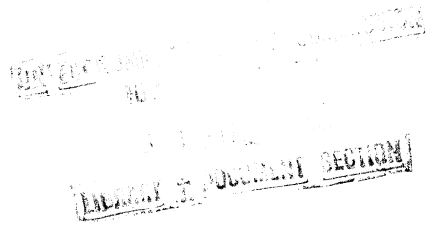
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PROCEEDINGS OF THE EXPERT GROUP MEETING ON THE IMPACT OF THE PEACE PROCESS ON SELECTED SECTORS

Amman, 23-25 June 1997

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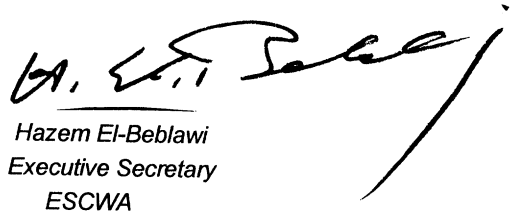
Foreword

After so many years of hostilities and antagonism, the search for peace has become the overwhelming aspiration of the majority of the peoples of our region. It is now generally recognized that wars and tension have only served the cause of destruction and arbitrariness, and that the time has come for construction and stability. Peace is a prerequisite for sustainable development, but when we speak of peace here, we refer to genuine peace, which is durable, just and comprehensive. Preparing for peace is a long and painful process; the obstacles standing in the way, however considerable, are no excuse for abandoning the effort. The rewards are worth the struggle.

In the field of economics, the expected dividends of peace have been publicized to such an extent that it has almost been taken for granted that with peace, everyone will be a winner. This is not true, however, at least not in the short run. Peace will bring major changes to the region, and with it there will emerge new risks and opportunities, losers and winners. However, in all major changes–peace being a case in point–the gains do outweigh the losses.

The Economic and Social Commission for Western Asia (ESCWA), in its endeavour to anticipate the problems of the future, undertook a number of studies addressing the theme of the economic implications of peace. Issues of a general nature, such as the impact of the new international environment–which includes the World Trade Organization and the Euro-Mediterranean initiative–were widely discussed. Trade relations were also dealt with. However, rather than limiting the analysis to the overall consequences of peace, such as the change in the investment climate, the reallocation of resources towards developmental purposes, political stability and increasing predictability, among other things, it was thought that a more in-depth analysis of the impact of peace on specific sectors was perhaps equally relevant and important. Two sectors, the textiles and garment sector and the electronics and software sector, were selected for a more thorough investigation of the impact of peace. The textiles industry is old, with established traditions in many countries of the region, whereas the electronics industry is a newcomer characterized by rapidly changing high technology. The contrast of the two helps elucidate many problems.

The Friedrich Ebert Stiftung and the Economic Research Forum for the Arab Countries, Iran and Turkey graciously agreed to cosponsor the present volume. It is my pleasure to thank all the organizations and individuals participating in this important meeting. I hope that the publication of the proceedings of the meeting will help encourage public debate on our theme, a theme which is vital to the future of our region.



Hazem El-Beblawi
Executive Secretary
ESCWA

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INTRODUCTION

The "peace process" is changing the status quo as well as the political and economic relations of the ESCWA region, creating new dynamics in economic relations and giving rise to serious uncertainties about future economic activities. The new player has a different level of development, a different economic, industrial, trade and financial structure, and different economic and industrial strategies and policies in comparison with ESCWA members. The developments associated with the peace process have already brought about political and economic changes in the region and are expected to result in more changes in the future. Some changes can be anticipated; others will be unpredictable and surprising.

In spite of political difficulties, economic agreements have been signed between Israel and Egypt, Jordan and the Palestinian Authority. Various forms of economic arrangements are being negotiated as well with other, more distant Arab countries (Morocco, Oman, Qatar and Tunisia). Trade between Israel and its neighbours, in particular Egypt, has been growing slowly, though this growth is strongly influenced by fluctuations on the political scene. The area under the Palestinian Authority continues to be closely integrated with the Israeli economy, in spite of the serious efforts that are being made to develop Palestinian economic autonomy. New forms of economic and industry relations are being initiated between Israel and its neighbours, including joint projects, joint ventures and subcontracting arrangements. The peace process has also been responsible for some changes in the relations between the countries in the ESCWA region and the rest of the world. Transnational corporations (TNCs) are setting up offices and/or facilities in Israel and other countries in the region. The European Union (EU) is actively promoting cooperation with neighbouring Mediterranean countries, through various EU partnership schemes.

Regional economic relations are still hindered by many problems in addition to political difficulties. These problems relate to trade barriers, controlled business activities, bureaucracy and complicated procedures, non-tariff barriers and other restrictions on both sides of the borders. Economic and industry relations are seriously hampered by non-economic barriers as well: cultural barriers, the frequent closure of the occupied territories, and the slow rate of progress of the peace process, including the question of Jerusalem and of the Palestinian refugees.

The impact of the peace process on the industrial sector in the region will be determined as well by the programmes to reform economic and industrial policies that the countries in the region, including Israel, are undertaking. It will also depend on the rate and extent of implementation of the agreements reached, as well as on other global agreements, such as the Uruguay Round agreements.

Although it may be too early to predict the depth of the impact on the technological updating and restructuring of the industrial sector in various countries of the region, this might be an opportune time to consider whether changes in trade relations will be the major aspect of economic relations between Israel and its neighbours. Other

mechanisms of industry relations and technology transfer may emerge as well, possibly leading to a new geographical distribution of production, through bilateral arrangements such as subcontracting, joint ventures or the possible relocation of industries from Israel to its neighbours. The newly emerging industrial patterns may result in Israel's concentrating on selected high-technology products (geared mostly to Western markets) and on the transfer of technology and know-how, while ESCWA member countries may continue to promote labour-intensive and/or less technology-intensive industries, such as food processing and textiles and garments.

To what extent could specialized high-tech Israeli products find a market in ESCWA member countries? How likely is it that Israel (in cooperation with a more advanced partner and also possibly with an Arab partner) could develop high-tech consumer products geared to the ESCWA market? Israel would benefit from certain comparative advantages in this regard (skilled labour, better infrastructure and proximity to the ESCWA market), in spite of certain non-competitive factors of production, such as the high cost of labour. The possibility of Israeli products penetrating the Arab markets would have to be considered in the light of the liberalized global economy promoted by the Uruguay Round agreements and the actual needs and capacities of the Arab markets. It should be noted that even if peace prevails, Israel will not have the status of a privileged partner.

The peace process will not only bring about changes in Arab-Israeli relations, it will also result in changes in the economic relations between ESCWA member countries and the outside world. More intensive and/or new forms of cooperation are expected to develop, in particular with the United States of America and the European Union and possibly with Japan. In this regard, special attention should be paid to the potential economic cooperation scope, mechanisms and modalities that may be established between the European Union and individual countries and/or the region as a whole. A peace settlement in the region may also lead to greater involvement of TNCs and to increased foreign direct investment in ESCWA member countries, with a possible bias towards tripartite partnership.

The labour-intensive textiles and garment industry has been selected as one of the main subjects of the Expert Group Meeting on "Impact of the peace process on selected sectors", in view of its significant contribution to total manufacturing output, value added, exports and employment in the selected ESCWA members and in view of the fact that this industry is expected to be the one most affected by the new patterns of economic relations in the region, particularly under the new Uruguay Round agreements. This industrial branch is also one of the major contributors to total exports in Israel. The impact of the peace process on this branch depends to a large extent on several factors: the productivity of the textiles and garment industry, each country's comparative advantage, and each country's competitiveness in the export market. The high-tech industries of electronics, software, communications and related services were selected as the second main subject of the meeting. Israel is more advanced in this branch than are the ESCWA members. One scenario expects Israel to concentrate on selected specialized high-technology products (geared mostly to Western markets), in particular electronics and related industries.

The current proceedings incorporates a series of papers presented at the Expert Group Meeting on Impact of the Peace Process on Selected Sectors, held in Amman, Jordan, from 23 to 25 June 1997. It also includes the major conclusions and recommendations.

The following objectives have been set for the Expert Group Meeting:

(1) To deliberate on the impact of the progress achieved in the peace process with regard to the development of the industrial sector in the ESCWA region, and to assess the opportunities and challenges brought about by such progress;

(2) To review the changes that have taken place in the Arab-Israeli industry relations and discuss the problems in these relations;

(3) To discuss the expected impact of the peace process on the industry relations between the countries of the region and the rest of the world, particularly the European Union.

The papers presented to the meeting cover five major themes:

(1) The changing international environment: WTO and Euro-Med initiative

(2) The prospects of trade relations between ESCWA member countries and Israel

(3) The state of industrial sector in Palestine National Authority Area

(4) Industry relations in the textile and garment sector

(5) Industry relations in electronics and software

Part I

THE CHANGING INTERNATIONAL ENVIRONMENT: WTO AND THE EURO-MEDITERRANEAN INITIATIVE

REGIONAL OPTIONS WITHIN THE MULTILATERAL TRADING SYSTEM FOR THE COUNTRIES AND TERRITORIES OF THE MASHREQ

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Introduction

The trend towards regional integration is gaining pace worldwide, and within the field of trade, it is increasingly cited in the Arab region and in the Middle East as an option for economic development.

This paper focuses on the instruments and options available to strengthen regional integration in the field of trade in goods and services for the Mashreq region. The background of the analysis will involve on the one hand the discipline and the debate within GATT/WTO regarding free-trade areas and customs unions, and on the other hand, the initiative launched by the Euro-Mediterranean Conference held in Barcelona in November 1995 for the creation of a free-trade area to encompass the countries of the European Union and the Mediterranean countries and territories.

These developments raise a key question about how trade liberalization measures at a multilateral, regional or bilateral level can be carried out so as to be consistent and coordinated with the commitments undertaken at all other levels, both from a legal and an economic point of view.

I. INSTRUMENTS FOR REGIONAL INTEGRATION WITHIN THE MULTILATERAL TRADING SYSTEM

Among the countries and territories of the Mashreq, only Egypt and Israel are members of the WTO, whereas Jordan is presently engaged in the process of accession, and Lebanon and the Syrian Arab Republic are evaluating its implications. The position of the occupied territories with respect to the WTO is unclear, since the Paris Agreement gives the Palestinian Authority only limited autonomy in setting its trade policy. Although only a limited number of countries are currently WTO members, the discipline laid down in GATT 1994 and the debate on such issues at the multilateral level may have implications for the region as a whole, especially in the context of the debate on a long-term trade arrangement.

Multilateral trade agreements provide the basic framework within which international trade relations are conducted. This situation, however, does not impede the furthering of trade relations at the regional and the bilateral levels. At present, within the multilateral trading system, two basic instruments may be used to establish regional integration schemes in derogation of the most-favoured nation (MFN) principle contained in Article I of the General Agreement on Tariffs and Trade: (1) Article XXIV of the General Agreement, and (2) the Decision on Differential and More Favourable Treatment,

Reciprocity and Fuller Participation of Developing Countries (commonly referred to as the Enabling Clause). The interpretation of Article XXIV was the subject of an Understanding among the Contracting Parties, which was included in the Final Act of the Uruguay Round. This section will provide a brief synthesis of both the rules and the debate on regionalism within GATT/WTO.

A. ARTICLE XXIV OF GATT 1947 AND THE UNDERSTANDING ON THE INTERPRETATION OF ARTICLE XXIV OF GATT 1994

In simplified terms, Article XXIV places four basic conditions on the formation of free-trade areas and customs unions:[1]

(a) That they cover substantially all trade among member countries;

(b) That they do not raise barriers against third countries;

(c) That any interim agreements lead to the formation of a free trade area or customs union within a reasonable period of time;

(d) That they are promptly notified to the Contracting Parties.

Requirements on "substantially all trade": Paragraph 8 of Article XXIV establishes that "duties and other restrictive regulations of commerce ... are eliminated with respect to substantially all the trade between the constituent territories".[2] This requirement on the formation of preferential arrangements clearly stems from a desire to discourage the misuse of the provisions of Article XXIV as a cover for sectoral agreements that discriminate in favour of one country or a group of countries, and at the same time to enhance the trade-creating potential of regional arrangements by enlarging their scope. It may be inferred that the practice of formulating trade agreements limited to specific sectors–a number of examples within the Middle East region can be cited–is at odds with this provision at least so long as these agreements are intended for notification under cover of Article XXIV.

Third countries' interests: In order to avoid unduly adverse effects on trade with third countries, Article XXIV contains the provision that, as regards free-trade areas, "the duties and other regulations of commerce ... applicable at the formation of [the] free-trade area ... shall not be higher or more restrictive than the corresponding duties and other regulations of commerce existing in the same constituent territories prior to the formation

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[1] The distinction between free-trade areas and customs unions lies in the treatment of tariffs applied on imports from third countries, customs unions being characterized by a common external tariff.

[2] This obligation is attenuated by the provision that "where necessary" constituent territories may introduce restrictive regulations of commerce under Articles XI (General Elimination of Quantitative Restrictions), XII (Restrictions to Safeguard Balance-of-Payments), XIII (Non-discriminatory Administration of Quantitative Restrictions), XIV (Exceptions to the Rule of Non-discrimination), XV (Exchange Arrangements) and XX (General Exceptions).

of the free-trade area."[3] A similar–although not identical–provision exists with respect to customs unions and requires that "the duties and other regulations of commerce imposed at [its] institution ... in respect of trade with [third countries] ... shall not on the whole be higher or more restrictive than the general incidence of the duties and regulations of commerce applicable ... prior to the formation of [the customs unions]."[4] It is important to note that if the common tariffs established at the formation of a customs union are inconsistent with this requirement, compensatory adjustment may be requested by the Contracting Parties that are primarily affected by the change in the schedule. In this case, Article XXIV (6) provides that negotiations should be carried out applying the procedure set forth in Article XXVIII for the modification of schedules, with an important proviso: "In providing for compensatory adjustment, due account shall be taken of the compensation already afforded by the reduction brought about in the corresponding duty of the other constituents of the union." This means that if the adoption of a common external tariff by two members of a customs union, country A and country B, requires country A to increase the rate of duty bound and country B to reduce it, then third parties that are affected by such changes should consider the reduction in tariff rates by country B in the negotiations for compensatory adjustment with country A.

Requirements regarding interim agreements: Article XXIV, paragraph 5(c) explicitly allows for interim agreements, leading to the formation of free-trade areas or customs unions, provided that the interim agreement contains an explicit plan or schedule for the formation of such a customs union or free-trade area within a reasonable length of time.

Transparency requirements: As a measure to increase the transparency of preferential trading arrangements, paragraph 7 of Article XXIV requires that "any Contracting Party deciding to enter into a customs union or free-trade area shall promptly notify the Contracting Parties." The notification is made to the Council for Trade in Goods, which until 1996 would institute a working party to examine the agreement. In February 1996, the Committee on Regional Trade Agreements was established and was charged with the task of examining trade agreements and reporting directly to the Council of Trade in Goods. Since then, no more working parties were to be established and the outstanding work of the working parties was to be carried out by the Committee.

It may be observed that these provisions leave room for a certain flexibility, in part because they were phrased at a time when it was thought that preferential agreements would be rare. Indeed, differences of interpretation on Article XXIV among Contracting Parties have resulted in long and often inconclusive debates on the consistency with WTO rules of these agreements that were notified. In fact, a report entitled *Regionalism and the World Trading System*, published by the WTO Secretariat in April 1995, notes that over 50

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[3] GATT, *The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts* (Geneva: GATT, June 1994), p. 523.

[4] Ibid.

working parties on individual customs unions or free-trade areas had been unable to reach unanimous conclusions as to the consistency of those agreements with WTO rules.

The debate has been particularly heated on the requirement concerning "substantially all trade." In particular, one interpretation has been that no major sectors may be excluded from a free-trade area or customs union agreement, making all agreements that exclude agricultural products or make them subject to specific concessions de facto inconsistent with WTO rules. A conflicting interpretation has maintained that exclusions are possible so long as "substantially all" actual trade among members is covered by the agreement.

Similarly, the requirement on duties and other regulations of commerce affecting third countries has generated substantial differences of opinion among Contracting Parties, as regards the comparison between *ex-ante* and *ex-post* tariff rates. One interpretation had it that the comparison should be based on applied duties, while an opposing interpretation claims that bound rates should be used. Heated debate also revolved around another issue, namely whether all members of a customs union are required to offer compensation for any individual sectors or subsectors, or whether instead increases in the protection granted to one sector would require no compensation if they were matched by decreases in other sectors, or in the same sector by other members of the customs union.

To answer these and other important concerns of the Contracting Parties, the Final Act of the Uruguay Round included the Understanding on the Interpretation of Article XXIV, which contributed to clarifying some of the controversies arising from these conflicting interpretations. It should, however, be noted that the Understanding did not solve what was arguably one of the most heated subjects of controversy, namely the "substantially all-trade" requirement.

The Understanding did clarify that the assessment regarding duties applied towards third countries should be based on the weighted average of duties collected–thus resolving the controversy on whether bound or applied duties should be used. As regards the conflicting interpretations concerning the procedure for compensating those Contracting Parties that would be primarily affected by a change in the tariff schedule of a constituent of a customs union (as described above), the Understanding provides that account should be taken of reductions of duties on the same tariff line. Should the compensation remain unacceptable, then compensation may take the form of reduction in customs duties on other tariff lines. In addition, the Understanding set the "reasonable length of time" for the formation of a free-trade area or customs union at 10 years, although some Contracting Parties claim that whenever the regional arrangements involve developing countries, the limit of 10 years should be interpreted with flexibility.

The countries and territories of the Mashreq may consider the discipline and the debate around Article XXIV as one of the alternatives to be pursued if they indeed choose to progress towards increased regional integration within the framework of the WTO. The following section focuses on the comparatively less demanding requirements entailed by the framework of the Enabling Clause.

B. THE ENABLING CLAUSE

The second main provision within the General Agreement which allows Contracting Parties to stray from the principle of non-discrimination is the Decision on Differential and More Favourable Treatment, Reciprocity and Fuller Participation of Developing Countries (commonly referred to as the Enabling Clause), which was agreed upon in November 1979 as part of the results of the Tokyo Round. The Enabling Clause provides that Article 1 of General Agreement does not prevent "Regional or global arrangements entered into amongst less-developed Contracting Parties for the mutual reduction or elimination of tariffs and, in accordance with criteria or conditions which may be prescribed by the Contracting Parties for the mutual reduction or elimination of non-tariff measures, on products imported from one another."[5]

Similar to the conditions laid down in Article XXIV relating to the interests of Contracting Parties that do not participate in a free-trade area or customs union, arrangements established under the Enabling Clause "shall be designed to facilitate and promote the trade of developing countries and not to raise barriers to or create undue difficulties for the trade of any other Contracting Parties."[6] Additionally, arrangements under the Enabling Clause "shall not constitute an impediment to the reduction or elimination of tariffs and other restrictions on trade on an MFN basis."

In parallel with the requirements laid down in Article XXIV regarding transparency, any modification of the arrangements under the Enabling Clause shall be notified to Contracting Parties, with the country or countries involved furnishing all the appropriate information. Upon the request of Contracting Parties, consultations may be held with respect to difficulties or matters that may arise.

An important difference between the Enabling Clause and Article XXIV is that the former does not contain any reference to the "substantially all-trade" requirement, and therefore it is an intrinsically more flexible instrument, which allows for mutual exchanges of tariff preferences which may exclude sensitive sectors and may cover even a small proportion of actual trade.

Another important point is that the Enabling Clause does not contain any reference to the formation of customs unions. Thus, if the establishment of a customs union is notified under the Enabling Clause, and its formation requires that some member countries increase their MFN tariffs to meet the common external tariff, the procedure for the compensation which is laid down in Article XXIV (6) discussed above cannot apply. As a result, if any tariff line needs to be increased, the procedure for the compensation will be the one which applies in the case of ordinary changes in tariff schedules and which is contained in Article XXVIII. In concrete terms, this means that no account would be

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[5] GATT, *Analytical Index: Guide to the GATT Law and Practice*, 6th Edition, 1994, pp. 53-59.

[6] Ibid., paragraph 3.

taken of reductions of duties on the same tariff line made by other constituents of the customs union upon its formation.

The interpretation of the Enabling Clause has given rise to controversy among Contracting Parties. In particular, "the Enabling Clause does not contain references to Article XXIV, an omission which has left unclear whether the Enabling Clause applies in situations in which the Article does not, or affects the terms of the application of that Article, or represents, for developing countries, a complete alternative to the Article."[7] The Understanding on the Interpretation of Article XXIV also does not mention the Enabling Clause and thus does not contribute to clarifying the issues at stake.

The debate about these and related issues of interpretation became heated when the Southern Cone Common Market between Argentina, Brazil, Paraguay and Uruguay (MERCOSUR) was notified under the Enabling Clause. In particular, it was questioned whether the Agreement should be analysed under the modalities of Article XXIV or under the modalities of the Enabling Clause. In the end, the mandate of the Working Party mentioned both the Enabling Clause and Article XXIV in its terms of reference. As a consequence, the working procedure which was subsequently adopted de facto reflected the modalities of Article XXIV, although as a matter of fact MERCOSUR was never notified under the modalities of Article XXIV. This complex situation resulted in a conundrum whereby the United States delegation argued that the procedure for compensation laid down in Article XXIV (6) could not be applied and requested the more rigorous procedure of Article XXVIII instead. The MERCOSUR countries are–quite logically–arguing against this interpretation, and the ongoing debate has yet to be resolved.

The debate around the Enabling Clause also has important consequences for the countries and territories of the Mashreq region, if they do decide to proceed towards an increased regional integration within the framework of the WTO. In fact, it follows from the above, that while the requirements for notification under the Enabling Clause are less restrictive, other Contracting Parties may object to a discussion under these terms and request discussion under the framework of Article XXIV instead. In addition, if any of the existing or future bilateral or multilateral arrangements among the countries of the Mashreq provided for or evolved into a customs union, it becomes questionable on the one hand whether discussion under the framework provided by the Enabling Clause would be acceptable to other Contracting Parties of GATT and on the other hand whether this option would indeed be in the interest of the members of the scheme.

C. ARTICLE V OF GATS

Throughout the world, integration at the regional level is continuously extending to new areas beyond trade in goods: trade in services in particular is becoming a well-established pattern of integration in various regions. In the Middle East, this could constitute an important option for furthering integration beyond the stage of a free-trade

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[7] WTO, *Regionalism and the World Trading System* (Geneva: WTO, 1995).

area, whether at the bilateral or at the regional level, in consideration of the important dimension of the movement of natural persons and the integration of the labour market in this region.

The General Agreement on Trade in Services (GATS) establishes an entirely new contractual framework to govern trade in services by defining four "modes of supply":

- Cross-border movement
- Movement of consumers
- Commercial presence
- Movement of natural persons

Article II of GATS reiterates the MFN obligation in the specific context of trade in services: "With respect to any measure covered by this Agreement, each Member shall accord immediately and unconditionally to services and service suppliers of any other Member treatment no less favourable than that it accords to like service and service providers of any other country."[8] Thus, for the service activities inscribed in each country's schedule, the market access provided for under each of the four modes of supply–within the respective limitations specified–must be extended to all foreign service suppliers on a MFN basis.[9] Exceptions are permitted if they are specified in the list of exemptions to the MFN treatment: for instance, a country may grant better treatment than that provided in the schedule to specific countries. In the case of Egypt, for example, the GATS list of exceptions indicates that full national treatment is extended only to foreign personnel of a restricted number of countries.[10]

In addition to the list of exemptions appended to GATS or indicated at the moment of accession (which in principle are closed to future extensions), WTO member countries can claim coverage for existing or new regional integration Agreements under Article V of GATS.

Requirements on "substantial sectoral coverage": Similar to Article XXIV of GATT, the coverage under Article V is intended for agreements with a "substantial sectoral coverage", defined in a far more precise way than the corresponding obligation within the General Agreement on Tariffs and Trade, in terms of number of sectors, volume of trade affected and modes of supply. Furthermore, agreements should provide for the absence or elimination of substantially all discrimination between or among the parties, in

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[8] GATT, *The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts*, p. 329.

[9] Where the commitment inscribed in a country's schedule provides for full national treatment, the member State will accord service suppliers of any other member treatment no less favourable than that it accords to its own like service and service providers. Exceptions to full national treatment take the form of discrimination between local and foreign service suppliers, with all foreign service suppliers being treated equally, again with the exceptions listed in the list of exemptions.

[10] Namely, Greece, Iraq, Jordan, the Libyan Arab Jamahiriya, Qatar, Sudan, the United Arab Emirates, Yemen and possibly other countries. See GATS, 15 April 1995, Egypt, Final List of Article II (MFN) exemptions.

the sense of according services and service suppliers from other countries members of the agreement treatment no less favourable than that accorded to its own services and service suppliers.[11]

Third countries' interests: Also in parallel with the requirements of Article XXIV of the General Agreement on Tariffs and Trade, Article V of GATS provides that "any Agreement ... shall not in respect of any Member outside the agreement raise the overall level of barriers to trade in services within the respective sectors or subsectors compared to the level applicable prior to such an agreement."[12] Unlike the General Agreement on Tariffs and Trade, GATS does not include a distinction between free-trade areas and customs unions, which would be hard to define in the field of trade in services. Partially for this reason, there is no specific procedure to deal with changes in specific commitments made within GATS by countries that become members or form an economic integration agreement. Any changes in the schedules of specific commitments will then be dealt with under the general procedure laid down in Article XXI.

Reasonable time-frame: Article V of GATS establishes that if barriers to trade in services are not removed at the entry into force of the Agreement, then this should be done on the basis of a reasonable time-frame.

Transparency requirements: Any agreement for economic integration in trade in services, as well as any modifications or enlargements, should be notified to the Council of Trade in Services, which may establish a working party to examine it and report to the Council on its consistency with Article V. Reports on the implementation of interim agreements, including a time-frame for the elimination of barriers to trade in services, should be provided periodically to the Council, which may establish working parties to examine these reports.

It is noteworthy that Article V provides for flexibility in agreements involving developing countries, as regards the "substantial sectoral coverage", in particular regarding the "absence or elimination of substantially all discrimination". Furthermore, it is established that in the case of agreements involving only developing countries, it is possible to waive the requirement that preferential treatment should be extended to service suppliers that are established in and carry out substantive business operations in the territories of the parties and which are owned or controlled by natural persons of a nationality other than the members of the agreements.

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[11] Exceptions are allowed for measures permitted under Articles XI, XII, XIV and XIV bis, respectively concerning restrictions on: payments and transfers; restrictions to safeguard the balance of payments; general exceptions (public morale, public order, public health, the prevention of fraudulent practices, the protection of privacy and safety); and security exceptions.

[12] GATT, *The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts*, p. 331. It should be noted that "with respect to export interests of third countries these requirements are more advantageous than GATT's requirement that trade barriers should not be 'on the whole' higher or more restrictive, since it applies to individual sectors or subsectors" (WTO, *Regionalism and the World Trading System*, p. 21).

The practice of agreements and arrangements notified under Article V of GATS is as yet limited, and especially so with regard to agreements among developing countries. As will be discussed in more detail below, however, the liberalization of trade in services is in many ways fundamental to the smooth functioning of a regional integration agreement. Thus, although in the case of many regional groupings, the integration of the services sectors has been postponed to the late phases of regional integration, it may nevertheless be advisable to keep this issue among the priorities from the beginning of the negotiations.

Whatever decisions may be made about the form–and indeed the desirability–of any new or strengthened regional trade arrangement among the countries of the region of the Mashreq and about the level of integration that it will imply, it is clear that the WTO discipline and the debate in the Committee for Regional Trade Arrangements should be a basic item in the discussions. At the same time, a second important factor will be represented by the process that was set into motion by the Barcelona Declaration, which, as will be shown immediately below, will have important repercussions on the integration of the countries of the Mashreq region.

II. THE EURO-MEDITERRANEAN INITIATIVE

Table 1 shows the prominence of the European Union as an importer from and exporter to the Mashreq region, which reflects the preferential relations maintained by the European Community since its formation with non-member Mediterranean countries. In the late 1970s in particular, cooperation agreements were signed between the European Community and Egypt, Jordan, Israel, Lebanon and the Syrian Arab Republic.[13] Trade with the West Bank and Gaza Strip was also the subject of specific concessions.

The European Union has in recent years reinforced its support towards non-member Mediterranean countries. The conclusions of the European Council meeting in Essen (Germany) endorsed at the Ministerial Conference in Barcelona in November 1995 outlined the European Union's new policy towards the Mediterranean countries. The political and economic attention of the European Union, mainly devoted in recent years to supporting the changes in Eastern European countries and the entry into force of the Europe agreements, is now concentrating on a new strategy and model for partnership with the Mediterranean countries. This partnership may be summarized as developing along three main streams:

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[13] Cooperation Agreement between the European Community and the Arab Republic of Egypt, *Official Journal* L266/78 of 27 September 1978; Cooperation Agreement between the European Community and the Hashemite Kingdom of Jordan, *Offical Journal* L268/78 of 27 September 1978; Cooperation Agreement between the European Community and the Syrian Arab Republic, *Official Journal* 269/78 of 27 September 1978. Similar agreements were signed with countries in the Maghreb region, including Algeria, Morocco and Tunisia.

TABLE 1. TRADE WITH THE EUROPEAN UNION,* TOTAL VALUE AND PERCENTAGE OF TOTAL IMPORTS AND EXPORTS, 1995

	Imports from the European Union		Exports to the European Union	
	(millions of $)	Percentage of total imports	(millions of $)	Percentage of total exports
Egypt	4562	38.9	1577	45.8
Israel	14687	51.8	6150	32.3
Jordan	1226	33.2	90	6.3
Lebanon**	3220	..	142	..
Syrian Arab Republic**	1792	..	2264	..

Source: COMTRADE database of the United Nations, on international trade flows.

Note: Two dots (..) indicates that data are not available.

* No data on trade for the West Bank and Gaza Strip are available on the COMTRADE database.

** Lebanon and the Syrian Arab Republic do not report to the COMTRADE database, although they do appear as partners. For these countries, imports and exports to/from the EU are therefore "reverse trade" (with the EU as reporter).

- Negotiations of free-trade area agreements of reciprocal nature with Mediterranean countries, covering both trade and trade-related matters, including aspects that go beyond trade in goods (for example intellectual property rights, competition law, approximation of standards, investment promotion).

- The creation of a Euro-Mediterranean free-trade area, comprising all European Union members and Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, the Palestinian Authority, the Syrian Arab Republic and Tunisia.

- Substantial financial assistance to support the necessary adjustments (5,500 million European currency units [ECU]).

The implementation of this policy is already well advanced. The European Commission signed an Association Agreement with Israel in November 1995[14], with Morocco in December 1995, and with Jordan in November 1997. Additionally, an Interim Agreement with the Palestine Liberation Organization on behalf of the Palestinian Authority Interim Agreement and the EU-Tunisia Association Agreement have as yet entered into force – respectively in July 1997 and in March 1998. Also, the provisions pertaining to commercial policy of the EU-Israel Association Agreement entered into

[14] Commission of the European Communities, *Decision of the Council and the Commission on the conclusion of an interim Agreement on trade and trade-related matters between the European Communities of the one part and the State of Israel, on the other part*, December 1995.

force in March 1996. At the time of the present writing, negotiations with Egypt, Lebanon and the Syrian Arab Republic were still on-going.[15]

These agreements aim at the establishment of free-trade areas under the provisions of Article XXIV of GATT. To achieve this objective, all quantitative measures affecting trade in industrial products will be eliminated upon the entry into force of the agreement. Mediterranean countries already enjoy duty- and quota-free treatment on their industrial exports to the EU (since the conclusion of their respective cooperation agreements with the EU), with the exception of processed agricultural products and certain categories of textile products. Mediterranean countries will now be required also to dismantle tariff protection for their industrial sector *vis-à-vis* the European Union within a transition period of 12 years. With regard to agricultural products, although the agreements entail only partial liberalization,[16] further liberalization is envisaged after 1 January 2001 and should be the subject of negotiations between the parties, beginning no later than 1 January 2000.

The smooth functioning of an integrated economic area requires provisions that go far beyond trade in goods: in recognition of this fact, the Euro-Mediterranean Association Agreements include a number of bilateral commitments in areas such as capital movement, services and the right of establishment, technical standards, intellectual property rights, competition law, and customs cooperation.

These commitments represent important incentives for investment in the Mediterranean region, in particular because they may boost the confidence of both the local and foreign business community in the stability and transparency of the regulatory framework. Further advantages may come from the standardization of administrative requirements and regulatory regimes in a number of areas, which could potentially lead to lower transaction costs. Examples include product standards, testing and certification procedures, mutual recognition agreements, and common documents for customs clearance.

Experts have nevertheless pointed out that–in particular in the field of liberalization of trade in services and right of establishment–the commitments contained in the Euro-Mediterranean Association Agreements still fall short of the expectations and the needs of the local industrial and agricultural sector. For example, commitments in the draft agreement with Egypt, which is currently under negotiation, simply confirm those made within the context of the General Agreement on Trade in Services (GATS). As

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[15] In the Maghreb region, Morocco and Tunisia signed Associated Agreements in February 1996 and July 1995 respectively; negotiations with Algeria were ongoing at the time of the present writing.

[16] For a detailed description of the preferential market access provisions applying to Mediterranean countries' agricultural exports, see UNCTAD, *Handbook for Exporters from Mediterranean Countries and Territories to the European Union Markets* (UNCTAD/ITCCD/TSB/Misc.3), 1997. For an analysis of the implications of these provisions, see S. Tangermann, *Access to European Union Markets after the Uruguay Round and Export Interests of the Mediterranean Countries* (UNCTAD/ITCD/TMB/Misc.5), 1997.

regards the right of establishment, the two Parties "agree to extend the right of establishment and the liberalization of the supply of services by companies of one Party to service consumers in another Party" (Article 34). It is foreseen that the Association Council should examine this matter within five years of the entry into force of the Agreement, but no precise target date is set and no mention is made of specific sectoral commitments. On the other hand, the main commitments made by Egypt within GATS as regards the services sectors that most directly impact on the agricultural and industrial sectors–such as business services, transport, construction telecommunications–appear as yet insufficient to support Egyptian industrial firms in their effort to compete successfully in European markets.

The impact of the limited liberalization of trade in services on the manufacturing and agricultural sectors may be considerable when the domestic service sector is insufficiently developed, inasmuch as it may delay the necessary restructuring of the industrial base. In this respect, it has been noted that "given the importance of services in the production process–for example transport of inputs and the goods produced, financial intermediation, insurance, business services, tele-communications–it is clearly necessary to take into account the extent to which regulatory regimes raise the cost of services, thereby imposing a tax on manufacturing and agriculture. These costs are not limited to direct price-raising effects. Insofar as their effect is to reduce the quality of services, users are also confronted with an implicit increase in prices."[17]

On the other hand, the impact of preferential liberalization in the field of services *vis-à-vis* the European Union should be carefully evaluated, for at least two reasons. First, it might be argued that foreign service providers may be tempted to adapt the quality and price of their services to that of local service suppliers. Thus liberalization of international trade in services would respond only partially to the needs of the manufacturing and agricultural sector, while at the same time potentially crowding out local service providers.[18] Second–for those countries that are still not members of the World Trade Organization and are currently negotiating their accession and at the same time their respective Association Agreements–there is a danger that preferential commitments *vis-à-vis* the EU might be exploited by other WTO Contracting Parties to request similar concessions in the negotiations for accession.

In spite of these concerns, the Euro-Mediterranean Association Agreements represent an unprecedented commitment to open the Arab markets to foreign competition. In this context, it is somewhat surprising that comparatively little progress has been made at the horizontal level. In other words, Mashreq countries, by signing or negotiating Association Agreements with the European Union, show that they are willing to accept the

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[17] S. Djankov and B. Hoekman, "Towards a free trade agreement with the European Union: issues and policy options for Egypt", *How Can Egypt Benefit from Its Partnership Agreement with the European Union?* (London: Centre for Economic Policy Research [CEPR], 1997).

[18] Empirical research on the impact of the liberalization of the services sector on the manufacturing and agricultural sector would be needed to substance these arguments, but–to the best of the author's knowledge–has yet to be carried out.

competition of one of the world's strongest and broadest industrial bases without the protection of tariff and non-tariff barriers. It would then seem incongruent if these Agreements were not matched by a liberalization of trade with regional partners. This is especially so in view of the experience of other developing and developed regions which are moving towards regional integration arrangements under the cover of the WTO rules. In the first part of this paper the experience of MERCOSUR was mentioned, and examples in other regions include the Southern Africa Development Community (SADC) and the Association of South East Asian Nations (ASEAN).

III. THE OPTIONS FOR THE MASHREQ

At present, the limited trade data that exist on intraregional trade in the Mashreq region suggest that the volume of regional exchange is still very small (see table 2).

TABLE 2. INTRAREGIONAL TRADE: TRADE WITH REGIONAL PARTNERS AS A PERCENTAGE OF TOTAL TRADE (1995)*
(Percentage)

	Egypt	Israel	Jordan	Lebanon**	Syrian Arab Republic**	Total imports from region
Egypt	–	0.20	0.09	0.21	0.10	0.60
Israel	0.16	–	0.01	–	–	0.01
Jordan	1.25	0.00	–	1.15	2.12	3.27

Source: COMTRADE, database of the United Nations, on international trade flows.

Note: An em dash (–) indicates that the amount is nil.

* No data on trade of the occupied territories are available in the COMTRADE database.

** Lebanon and the Syrian Republic do not report to the COMTRADE data-base, although they do appear as partners.

Notwithstanding the as yet underdeveloped trade relations, preferential trade agreements among the partners of the Middle East peace process have flourished in recent years, namely:

- The trade protocol of the Egypt-Israel Peace Agreement, signed in 1979.
- The Israeli-Palestinian Protocol on Economic Relations (Paris protocol) signed in 1994.
- The Technical and Economic Cooperation Accord between the Palesinian National authority and the Arab Republic of Egypt signed in 1994.
- The Trade Agreement between the Hashemite Kingdom of Jordan and the Palestinian National Authority, signed in 1995.

- The Agreement to create a free-trade zone between the Arab Republic of Egypt and the Hashemite Kingdom of Jordan, signed in 1996.

- The Agreement on Trade and Economic Cooperation between the State of Israel and the Hashemite Kingdom of Jordan, signed in 1995, and updated by the Memorandum of Understanding of 1996.

Furthermore, Egypt and Jordan are members of the Arab Common Market, established in 1964 with a view to the formation of a customs union including Iraq, the Libyan Arab Jamahiriya, Mauritania, Morocco and Tunisia. In February 1997 efforts were revived by a meeting of the Ministers of Economy of the Arab League in which it was decided to move towards a free-trade area. Liberalization will be achieved in equal steps of 10% annually, beginning in January 1998.

The apparent contradiction between the trade data shown above and the flourishing of trade agreements can, at least in part, be explained by the fact that these accords were concluded with a basically political underpinning, in other words, that they were mostly based on the assumption that increased integration would not only yield direct economic and social benefits, but would also "ensure that peace, once attained, [would] continue to be maintained, the costs of disrupting it becoming prohibitively high."[19]

To examine in detail the provisions of each of these agreements and comment on the consistency of each of them with the General Agreement on Tariffs and Trade is clearly beyond the scope of this work. A few general considerations may nevertheless be developed.

First, it may be observed that the agreements (among those mentioned above) that simply imply a bilateral exchange of tariff preferences between or among developing countries–and which are often the subject of preoccupations as to their WTO compatibility–may actually generate fewer problems than may be expected if notified under the framework of the Enabling Clause. In fact, as was emphasized above, the agreements notified under the Enabling Clause need not respect the "substantially all-trade" requirement. However, it may be noted that–since the Enabling Clause does not contain reference to free-trade areas or customs unions–claiming cover for such arrangements under the Enabling Clause may provoke observations from Contracting Parties that are third parties to the agreement in question, which may require examination under Article XXIV. The above-mentioned experience of MERCOSUR means that even when an agreement is notified under the Enabling Clause, the debate on its WTO compatibility may well be carried out with reference to Article XXIV.

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[19] H. Awartani and E. Kleiman, "Economic interactions among participants in the Middle East peace process", vol. 51, No. 2 (Spring 1997), p. 219.

Furthermore, customs unions notified under the Enabling Clause may give rise to controversies regarding the compensation procedures for third Contracting Parties if some of the countries participating in the scheme need to increase some of their MFN tariffs to meet the commonly established external tariff. In the case mentioned above regarding MERCOSUR, the simplified procedure provided for in Article XXIV would not be applicable, and third Contracting Parties would not be bound to accept as compensation the reductions in the corresponding MFN tariffs of other countries participating in the scheme. A customs union notified under Article XIV would, however, have to meet the more stringent requirements discussed in the first chapter of this paper, especially concerning the proportion of trade covered by the preferential arrangements.

With regard to the agreements that the countries of the region may wish to create among themselves at a regional or subregional level, the two overlapping developments that were sketched in the first sections of this paper–namely the strengthened set of rules at the multilateral level and the commitments at the bilateral level *vis-à-vis* the European Union–can be seen by the countries and territories of the Mashreq region as a "platform" that contains a number of concrete options and that also constitutes a challenging starting point.

The conclusion of bilateral agreements between the European Union and individual Mediterranean countries may constitute a challenge inasmuch as it may lead to a "verticalization" of trade relations and to the emergence of a "hub and spokes" system in the Mediterranean region, in which the European Union would be the hub and the individual Mediterranean countries would represent the spokes. In this respect, it has been noted that in the absence of integration among Mediterranean countries and territories an EU-based enterprise would benefit from preferential market access not only in all Mediterranean countries and territories but also and at the same time in Eastern European markets. An enterprise based in one individual country or territory of the Mashreq region, however, would only enjoy preferential market access to the European Union. Thus, the Euro-Mediterranean Association Agreements may be insufficient *per se* to bring about the desired revitalization of foreign direct investment towards the Middle East and may paradoxically draw investment towards the European Union.

The conclusion of bilateral trade agreements with the European Union should also be seen in the light of the comparatively high level of tariff protection in force in some of the countries of the region, a factor which has well-known consequences with regard to trade diversion. In fact, the greater the difference between MFN and preferential tariffs, the greater the possibility that imports from the European partner will crowd out more competitively priced imports from other sources owing to the different customs treatment. This may well have negative repercussions on the development of regional exchange among the countries and territories of the Mashreq, unless the option of deepening commercial ties within the region is pursued with more vigour.

However, the engagements taken at the multilateral and regional levels may represent an opportunity, to the extent that they lead the countries and territories of the region, albeit indirectly, into the adoption of a common framework of shared rules in a

number of areas, in particular to the extent that provisions contained in the Euro-Mediterranean Association Agreements regarding the enhancement of regional cooperation and the approximation of laws and standards are fully implemented.

All Association Agreements already signed or under negotiation contain a similarly worded Article on Regional Cooperation. The text of the European Union-Morocco Agreement can serve as an example: "In order to make the most of this Agreement, the Parties shall foster all activities which have a regional impact or involve third countries, notably:

- Intraregional trade within the Maghreb
- Environmental matters
- The development of economic infrastructure
- Research in science and technology
- Cultural matters
- Customs matters
- Regional institutions and the establishment of harmonized programmes and policies (Article 45)

Within this broad set, preliminary attention should be given to customs cooperation. In fact, regional integration starts at the border, and the harmonization of customs procedures and the elimination of administrative bottlenecks may greatly enhance the potential for intraregional trade.[20] The Euro-Mediterranean Association Agreements provide a possible basis for regional customs cooperation because they each contain a protocol on customs cooperation. However, such cooperation remains at a vertical level, and efforts should be made to enlarge it horizontally to encompass regional partners.

At a deeper level, the cumulation of origin[21] is another key issue. In fact, the definition of originating product may limit substantially the extent to which Mediterranean exports to the European Union will actually benefit from the preferences granted in the Agreements. Depending on the product in question, rules of origin require that inputs imported from a third country and utilized in the production process be from a different tariff classification (change of tariff heading criterion), that a specific transformation be undertaken on these inputs in the beneficiary country, or that a given percentage of the value of the product be added locally. Clearly, goods not meeting the required criterion are admitted into the EU market at the corresponding MFN tariff and will not benefit from preferential treatment.

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[20] The importance of customs cooperation cannot be overemphasized and finds an implicit confirmation in the ample space that has been devoted to this issue in the Protocol on Trade that provides the basis of the programme of regional integration of the Southern Africa Development Community (SADC).

[21] For a comprehensive analysis of this highly technical issue, see S. Inama, "Globalization and the international trading system: Issues relating to rules of origin" (UNCTAD/ITCD/TSB/2), 24 March 1998.

As is well known, rules of origin serve the objective of avoiding the deflection of trade in a free-trade area and ensuring that preferential treatment will only be granted to goods actually produced within the area, so as to maximize the benefits it derives in terms of value added and investment. Stringent rules of origin may, however, limit the extent to which a country with a small industrial base can actually draw benefits from a preferential trade agreement. It is partially for this reason that cumulation of origin is introduced in trade agreements. Normally, in fact, rules of origin would have to be fulfilled within one single customs territory. However, it is clear that overly stringent rules of origin requirements would demand an excessive verticalization of production, which does not exist in developing countries; furthermore, it would frustrate the trade creation effects expected in a regional trade area.

Cumulation allows for imports from a customs territory that participates in the regional integration scheme to be included in the determination of local content, according to specific rules. In the context of the Euro-Mediterranean Association Agreements that have been concluded or are in the course of negotiation, two kinds of cumulation are allowed for: bilateral cumulation and cumulation of working or processing. In particular, cumulation of working or processing has been granted for trade among the countries of the Maghreb (Algeria, Morocco and Tunisia), while all signatory countries and territories are granted bilateral cumulation.

With cumulation of working or processing, all the countries of the Maghreb are considered as one single customs territory, and therefore all processing or manufacturing operations carried out in any of the three countries will be counted in calculating local content, irrespective of whether the individual operation performed in each of the countries that participate in the production process is sufficient *per se* to confer the originating status.

With partial cumulation, only the products that *originate* in a customs territory that is part of the arrangement can be counted as local content when utilized for further manufacturing in a partner customs territory. Thus, origin-conferring operations must be carried out in each of the countries/territories which participate in the production process. An example will clarify this complex regulation (see box on bilateral cumulation and cumulation of working or processing in the Euro-Mediterranean Association Agreements).

The extension of the cumulation of working or processing arrangement–similar to that granted to the countries of the Maghreb–to the countries and territories of the Mashreq is conditional upon the conclusion of free-trade agreements among these countries, on the adoption of common rules of origin and on the development of customs cooperation.[22]

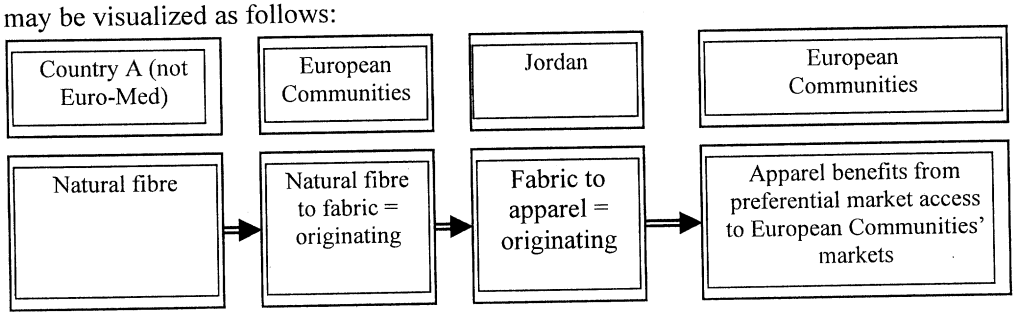
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[22] See the Declaration of the European Union in the draft EC-Egypt Association Agreement, and similar Declarations in the Agreements concluded with Israel and with the Palestinian Authority.

Bilateral cumulation and cumulation of working or processing in the Euro-Mediterranean Association Agreements

1. Bilateral cumulation (between the Mediterranean countries and the European Communities [EC])

EC rules of origin require that the manufacturing process for apparel not knitted or crocheted (HS 62) when imported inputs are used has to start from imported yarn. With bilateral cumulation, a producer of apparel in Jordan (one of the Mediterranean partners[23]) may utilize fabric imported from the European Union and the finished jacket (for example) will be considered an originating product; thus it will be possible to export it to the European market exempt from duties. This is because the imported fabric is counted under the cumulation rules as a domestic input and not as an imported input. However, this only applies when the fabric manufactured in the Community is already originating, that is it is wholly obtained (manufactured from domestic cotton fibres) or has been manufactured from imported natural fibres but not imported yarn.[24] This production chain may be visualized as follows:



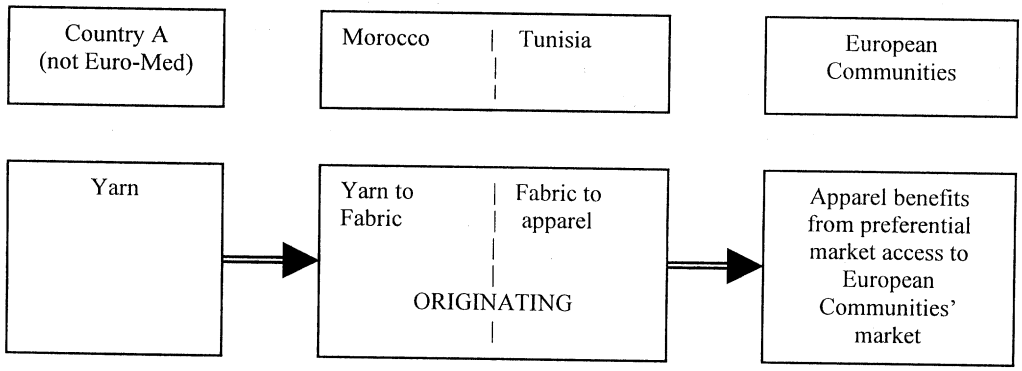
2. Cumulation of working or processing (among the Maghreb countries)

As was mentioned in the previous example, EU rules of origin require that, when imported inputs are used, the manufacturing process has to start from imported yarn. Since under the EC rules the Maghreb countries (Algeria, Morocco, Tunisia) are considered a single customs territory for rules of origin purposes, it is sufficient that such requirement be fulfilled within the area. Thus, the intermediate materials imported from another member of the Maghreb do not need to be already originating. In the case of full cumulation the production chain is as follows:

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[23] Namely Algeria, Egypt, Israel, Jordan, Morocco, the Palestinian Authority, the Syrian Arab Republic and Tunisia.

[24] Unless the finished fabric incorporates cotton thread. In this latter case, manufacturing from yarn is allowed.



For the countries and territories of the Mashreq, the drafts of the Agreements under negotiation and the texts of those that have been concluded do not allow for cumulation of working or processing, but only for bilateral cumulation. In this respect, two considerations are in order. First, the above examples show that with bilateral cumulation, only inputs originating in the European Communities are counted in the determination of local content but not those originating in the neighbouring countries and territories. Second, a full cumulation system may allow for "jumping" one step of the manufacturing process. In fact, under the bilateral cumulation system, in order to comply with the same rules of origin, beneficiary countries are obliged to import materials at an earlier stage of manufacturing (cotton fibre) or fulfil the specific operations prescribed regarding manufacturing from fabric rather than from yarn, as in the case with full cumulation.

The extension of cumulation of working or processing to Mashreq countries–and potentially also to Eastern European countries–is relevant in two ways. First, it could enhance the potential for intraregional trade among the countries of the Mashreq. Second, it may also help offset the hub-and-spokes nature of the EU web of agreements. This should therefore represent a key negotiating objective *vis-à-vis* the European Union.[25]

At a different level, efforts to deepen commercial ties among the countries and territories of the region may be reinforced within the framework of the strengthened rules of WTO with regard to regional arrangements. In the first section of the paper it was noted that in the future, the treatment of any free-trade area or customs union will be the subject

[25] It should also be noted that the EU-Israel Association Agreement contains a clause (see Article 12 of Protocol 4 of the Interim Agreement) which does not exist in any of the other Euro-Mediterranean Association or Cooperation Agreements. Under this provision, if a particular product originating in Israel is exported to a third country or territory, worked or processed there and subsequently reimported to Israel for further working or processing or for re-export to the Community, the product retains its originating status, so long as the total value acquired outside Israeli territory does not exceed 10% of value added. However, it should be noted that such provision does not apply to products within chapters 50 to 63 of the Harmonized System (all textile and apparel products). This provision should be distinguished from the issue of cumulation for which it clearly does not constitute a substitute.

of more rigorous scrutiny in WTO than was the case in the General Agreement on Tariffs and Trade. Nevertheless, the ongoing debate among member countries on Article XXIV suggests that the rules that apply to the formation of regional integration schemes still do allow for substantial leeway. This flexibility may be even greater in the case of arrangements involving developing countries, as the recent experience of MERCOSUR shows.

Were some or all the countries and territories of the region to decide to progress towards a free-trade area or a customs union, an additional question arises which relates to the liberalization of trade in services. In fact, this issue may be of special importance for the regional economy, in view of the extreme sensitivity of the issue of the mobility of labour, in the context of the endemic problem of unemployment and underemployment. It has been noted that

> in the Middle East as a whole (although less so for the subset of countries considered here) the integration of labour markets has tended to precede the integration of merchandise markets through trade. This reflects the fact that it was in the sparsely populated countries that oil was found, creating a demand for labour that could not be met by the local workforces.[26]

This observation applies in a wider context of the Middle East than the subset that is the focus of the present study–in particular as regards the movement of Egyptians, Jordanian and Palestinian workers to the countries of the Gulf. However, movements of labour among the countries and territories involved in the peace process are also estimated to be substantial and are indeed of an importance that cannot be overemphasized in the context of the Palestinian-Jordan-Israel interrelation.

In this context, it is noteworthy that Article V (bis) of GATS reads:

> This Agreement shall not prevent any of its members from being a party to an agreement establishing full integration of the labour markets between or among the parties to such an agreement, provided that such an agreement:
>
> (a) Exempts citizens of parties to the agreement from requirements concerning residency and work permits;
>
> (b) Is notified to the Council for Trade in Services.

A footnote of Article V (bis) further specifies that full integration of labour markets typically "provides citizens of the parties concerned with a right to free entry to

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[26] H. Awartani and E. Kleiman, op. cit.

the employment markets of the parties and includes measures concerning conditions of pay, other conditions of employment and social benefits."[27]

It remains up to the countries and territories of the Mashreq region to weigh carefully the opportunities and the potential drawbacks of different levels of economic integration, be it at the level of exchanging bilateral concessions in specific goods and sectors within the discipline of the Enabling Clause, or at the level of a fully-fledged customs union or free-trade area, potentially extending to include issues beyond trade in goods and (in particular) services. Nothing prevents the adoption of an evolving arrangement, which may gradually unfold in accordance with economic and political developments.

IV. SUMMARY AND CONCLUSIONS

The 1990s will be key for the development of export capacity in the ESCWA region, and indeed the trade policy choices that have been or are about to be made will shape the framework in which the business community will operate.

In this context, since the peace process began, the potential for economic cooperation and integration among the countries and territories of the region has aroused the interest of both policy makers and analysts, under the assumption that increased integration would not only yield direct economic and social benefits, but may also come to represent a building block in the peace process. Indeed, a number of bilateral agreements have been signed between many of the countries and territories of the region. At the same time, it has to be recognized that currently the main markets for the Mashreq are outside the region. Hence arises the importance of finding an appropriate balance between integration within the region and the integration of the region into the multilateral system of exchange.

The framework of the WTO provides a variety of instruments for pursuing regional integration at different levels. Indeed, integration may take many forms: from the exchange of preferences limited to specific sectors under the framework of the Enabling Clause, to a fully-fledged free-trade area under the framework of Article XXIV, to the adoption of a common tariff and the creation of a customs union. In the field of services, Article V of GATS and the list of MFN exemptions in the original schedule of commitments shape the framework for deepening integration at the regional level. It is up to the countries and territories of the region to weigh the opportunities and the potential

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[27] One example of an integrated labour market is the Nordic Labour Market, which includes Denmark, Iceland, Norway and Sweden. The arrangement grants nationals of the four countries right of access to the common labour market, without restrictions or requirements of residency or work permits. Furthermore, discrimination–especially as regards pay and conditions of work–against nationals of any of the four countries is strictly forbidden. It is noteworthy that while Denmark and Sweden are EU members, Iceland and Norway are not (although they are part of the European Economic Space), thus proving that within a customs union there may be regions that choose to pursue further their economic integration, and also proving that different schemes of economic integration may overlap.

drawbacks of different levels of economic integration. The debate currently going on within the Committee on Regional Trade Agreements and the recent experience of other developing regions may constitute a useful background in this regard.

The second subject area in the discussions regarding the desirability of further commercial integration in the Mashreq will be represented by the Euro-Mediterranean initiative of the European Union. It is clear that by signing or negotiating the Association Agreements, the countries and territories of the Mashreq have accepted the competition of one of the strongest and broadest industrial bases, without the protection of tariff or non-tariff barriers. It would then seem incongruent if these agreements were not matched by liberalization of trade with regional partners. Indeed, as was argued above, the absence of progress in this direction might lead to a verticalization of trade with the European partners at the expense of regional partners, and eventually to the emergence of a "hub and spokes" system which would be detrimental to investments in the Mediterranean region.

At the same time, the Euro-Mediterranean initiative and the post-Barcelona dialogue provide important opportunities for Mediterranean countries and territories of the region. For example, the Association Agreements all contain clauses directed at the approximation of standards, customs cooperation, mutual recognition of certification, and other things. At present, these clauses only refer to the European Union, but efforts to extend cooperation in this field at the horizontal level may greatly reduce transaction costs, enhancing trade efficiency and providing a starting base for deeper commercial ties. Indeed, the approximation of such regulations in the Mashreq would on the one hand reinforce the bargaining position of the countries and territories of the region *vis-à-vis* the European Union and on the other hand represent an incentive for both local and foreign investment. At a deeper level, cumulation of working or processing among the countries and territories of the Mashreq–along lines similar to those applying in the case of the Maghreb–would promote intraregional trade and provide an incentive to create interdependencies among the production structures, in particular as regards intra-industrial trade. It should thus represent a key negotiating objective *vis-à-vis* the European Union. Currently, the European Union conditions cumulation of working or processing between any two countries on the conclusion of a free-trade agreement between the two countries, on their adoption of common rules of origin, and on their developing customs cooperation.

It remains up to the countries and territories of the Mashreq region to weigh carefully the opportunities and the potential drawbacks of different levels of economic integration. Nothing prevents the adoption of an evolving arrangement, which may gradually unfold in accordance with economic and political developments. However, one conclusion emerges strongly from the present paper: Commercial policy choices made at the bilateral, regional and multilateral levels should be carefully coordinated. Thus, the WTO rules, the Euro-Mediterranean initiative and the bilateral agreements among the countries and territories of the region should be viewed as an interdependent framework which should be used as a tool for development in the Mashreq.

THE PROPOSED FREE-TRADE AGREEMENT BETWEEN LEBANON AND THE EUROPEAN UNION COUNTRIES: EVALUATION AND RECOMMENDATIONS*

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Introduction

In an attempt to carry out its newly designed policy toward the Mediterranean countries, the European Union proposed individually to Morocco, Algeria, Tunisia, Egypt, Jordan, Israel, the Syrian Arab Republic and Lebanon that they enter into an Association Agreement which would replace the trade agreements currently in effect. As of the present writing, three countries (Morocco, Tunisia and Israel) had completed their negotiations and signed the new agreement, whereas Lebanon was still in the initial stage.

As proposed to these countries, the Association Agreements are essentially the same; they cover many areas, including cooperation in the social, cultural, financial and economic fields. Regarding international trade in goods and services, of interest in the present study, the Agreement calls for the following:

- The creation of a free-trade area which would be temporarily limited to industrial goods.
- The adoption of mutual tariff reductions on agricultural products. Product categories and the amount of reduction would be decided by negotiation.
- The postponing of the liberalization of trade in services to negotiation in a later stage.

It is to be noted that, compared with the current agreement between the European Union and Lebanon (in force since 1978), the proposed agreement is a step backward. Under the current agreement, Lebanese industrial products have unrestricted access to EU markets (no customs duties and no quantitative restrictions), whereas Lebanon is not bound to any preferential treatment regarding EU industrial products. In contrast, the proposed free-trade agreement is based on reciprocity. Lebanon would have to refrain from using quantitative restrictions to protect its industries and would have to grant the EU countries similar tariff exemptions, with one exception. On the EU side, exemptions would be immediately granted, while Lebanon would be allowed to phase out its tariffs over a 12-year period. In other words, the exemptions granted to Lebanon with no reciprocity would have to be fully requited. The question is, therefore: why Lebanon would not keep the present agreement and decline the new offer? The answer is that most

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* This paper is partly based on a study undertaken for the Association of Banks in Lebanon and published in its Series Dossiers, No. 6, 1996.

probably, if not certainly, the European Union would repeal the present agreement if Lebanon does not accept the new proposal.

Actually, under its generalized system of preferences (GSP), the European Union unilaterally grants 146 developing countries, including Lebanon, preferential tariff treatment for their industrial products. However, there are two drawbacks in these preferences: they do not always reach the full-exemption level; and they can be unilaterally amended or withdrawn, without consultation with the concerned countries. In addition, the European Union grants with no reciprocity duty-free treatment to the industrial products of 69 countries from the African, Caribbean and Pacific Group of States (ACP group), under the Lome Convention, and almost the same treatment to manufactures imported from Egypt, Jordan, the Syrian Arab Republic and Lebanon under the 1978 agreements still in force. Moreover, and on the basis of reciprocity, the EU allows duty-free import of the industrial products of a number of European countries, including Switzerland, Norway, Hungary, the Czech Republic, the Slovak Republic, Romania, Bulgaria, Poland, Lithuania, Latvia and Estonia, and also the following Mediterranean countries: Turkey, Cyprus, Malta, Morocco, Tunisia and Israel (under the new Association Agreements).

Within this overall trade policy of the European Union, what would best serve the interests of Lebanon–accepting the new Association Agreement, which aims mainly at establishing, on a reciprocity basis, a free-trade area restricted to industrial products, or rejecting the proposal and consequently (assuming the EU would repeal the 1978 agreement) remaining without any agreement with the Union? In order to answer this question, a comparison of potential losses with potential gains must be made.

The present study makes use of the foreign trade statistics published by the Customs Higher Council, the 1994 *Report on Industrial Census,* published by the Ministry of Industry in December 1995, and the final version of *Horizon 2000 Reconstruction and Development: Main Report,* prepared by the Council for Development and Reconstruction (CDR), especially the Report's yearly estimates up to the year 2007 of Lebanon's gross domestic product (GDP), imports, and the budget receipts and expenditures. On the basis of the data gathered, and using a number of assumptions, the study estimated the potential yearly losses and gains to Lebanon during the period 1998-2007 from the proposed free-trade area. These estimates might not be wholly accurate, but they serve the present purpose, which is to provide an idea about what impact the proposed free-trade area would have on the Lebanese economy in general and on the industrial sector in particular. The figures obtained show that if the structure of the Lebanese industry does not change, the losses will by far exceed the gains–and any possible gain is predicated on a significant increase in Lebanese exports to the EU, through new investments to be attracted by the Lebanese industrial sector. However, the achievement of such an increase would be impeded by the rules of origin, which are set by the European Union in a protocol appended to the proposed Association Agreement. These rules, as will be seen, have been tailored to the needs of the EU countries so as to make them virtually invisible protection instruments. They would to a great extent restrict Lebanese exports to the EU markets.

It should be noted, finally, that the proposal for the creation of a free-trade area between the EU and Lebanon (as well as with the other Mediterranean countries) is being made in the context of a complete failure of all the attempts thus far made by the Arab countries to integrate their economies. The impact of the new Euro-Mediterranean free-trade areas on regional economic cooperation is a question which also needs to be addressed.

This study consists of five chapters:

- **Chapters I and II** consider respectively the expected losses and gains to Lebanon from the proposed free-trade area.

- **Chapter III** examines the rules of origin as set in the protocol appended to the proposed Association Agreement.

- **Chapter IV** reviews some of the rather positive effects that the Euro-Mediterranean free-trade areas are expected to have on regional economic cooperation and integration.

- **Chapter V** summarizes and concludes the study with some recommendations.

I. LOSSES TO THE LEBANESE ECONOMY FROM THE CREATION OF A FREE-TRADE AREA WITH THE EUROPEAN UNION

The losses incurred by member countries in a free-trade area are due, according to economic theory, to trade diversion. This topic will be addressed below, together with the loss to the Lebanese economy from a drop in domestic output owing to increased competition from the EU countries. In addition the study will look at the loss of tariff revenues, although this is not considered as an economic loss.

A. Loss of import duties

The gradual tariff reduction on industrial imports from the EU in accordance with the proposed Agreement would cost the Lebanese Government a large part of its revenues from that source. There is no doubt that the Government's plan to balance its budget by the year 2005 would be undermined, and to stay on target, the Government would have to impose new taxes and fees, mainly on imports.

It should be pointed out that the revenue losses from the removal of import duties on European goods do not represent a loss to the Lebanese economy, unless tariff removal

results in an increase in the prices of imports.[1] However, it is almost impossible for that to happen with a country such as Lebanon owing to the small size of its economy, compared with the economies of EU countries. Therefore, the supply of exports to Lebanon is perfectly elastic, which means that the prices of Lebanese imports from the EU countries (and the rest of the world) would not change whether they are subject to high tariffs or no tariffs in Lebanon.

1. *Present status of import duties in Lebanon*

In 1996, Lebanese tariffs were reclassified according to the Harmonized System nomenclature. The rates can be considered moderate compared with those of other developing countries; they range from zero to 100%, but the tariff on most items does not exceed 30%.[2] The unweighted average of the Lebanese tariffs is 10%, and this is also the most frequent and the median rate. Weighted by 1996 Lebanese imports, the average rate obtained is 15.29%. For purposes of simplification, this study will consider it to be 15%.

2. *Impact on budget*

In Lebanon as in other developing countries, customs duties play a major fiscal role; in 1996, tariff revenues accounted for 1,631 billion Lebanese pounds (LL) or about 46% of budget revenues. The creation of a free-trade area between Lebanon and the European Union would result in a sharp decrease in revenues from customs duties because: first, the share of the EU countries in Lebanon's total imports is very important (about 50%); and second, this share will rise significantly if import duties on EU goods were to be phased out while remaining unchanged on imports from the rest of the world.

Understanding how the proposed free-trade area would affect revenues from customs duties begins with acknowledging the fact that the domestic market, as far as manufactured goods (including processed foods) are concerned, is almost equally divided among domestic production, imports from EU countries and imports from the rest of the world, that is, each category of goods currently commands a third of the Lebanese market.[3] The analysis is based on the two following assumptions:

First, import duties would be reduced in equal increments until they were phased out over a period of 10 years, from 1998 to 2007. As a result, the average customs duties on goods imported from EU countries (currently 15%) would be reduced as follows:[4]

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[1] Calculated on a CIF (cost + insurance + freight) basis.

[2] For further information about protective duties in Lebanon, see annex 3.

[3] For further information, see annex 1.

[4] This tariff reduction schedule, on EU products only, was adopted because it does not conflict with the proposed European free-trade agreement with Lebanon, and because it allows for utilization of the findings of the economic model on the Lebanese economy, adopted by the CDR in its report on the reconstruction and development of the country.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Average customs duties on imports from EU countries	13.50	12.00	10.50	9.00	7.50	6.00	4.50	3.00	1.50	0

Second, the elasticity of substitution of the EU countries' products in the Lebanese market is assumed to be equal to 2. In other words, it is assumed that for every 1 percentage point drop in tariffs on imports from EU countries, their share in the Lebanese market would rise by 2%. It is also assumed that this increase in imports from the European Union would drive down imports from other countries and cause a decline in domestic production by the same amount.[5] Therefore, it is assumed that the share of each of these three groups (domestic production, imports from the EU countries and imports from the rest of the world) would change as follows:

Market share	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Imports of EU countries	33.30	36.30	39.30	42.30	45.30	48.20	51.30	54.30	57.30	60.30	63.30
Domestic production	33.30	31.80	30.30	28.80	27.30	25.80	24.30	22.80	21.30	19.80	18.30
Imports of rest of the world	33.30	31.80	30.30	28.80	27.30	25.80	24.30	22.80	21.30	19.80	18.30
Total	99.90	99.90	99.90	99.90	99.90	99.90	99.90	99.90	99.90	99.90	99.90

Consequently, Lebanese imports would be shared between the EU countries and the rest of the world as shown below:

Market Share	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU Countries	50.00	53.30	56.50	59.50	62.40	65.20	67.80	70.40	72.90	75.30	77.60
Rest of The world	50.00	46.70	43.50	40.50	37.60	34.80	32.20	29.60	27.10	24.70	22.40
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

If Lebanon maintains at their current level its tariffs on imports from the rest of the world but gradually phases them out on imports from EU countries, the average ratio of tariff revenues to the total value of imports from all sources would be as follows:

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Tariff revenues as a percentage of total value of imports	14.20	13.30	12.30	11.30	10.10	8.90	7.60	6.30	4.80	3.40

Note: The figures in this table are based on the average import duties on European imports (see the first text table above) and on the assumed 15% import duties on imports from the rest of the world. Each is assigned a weight equal to its share in total imports.

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5 Although these assumptions are not based on any particular study, it is believed that they are operational enough to provide an idea about the impact of a decrease in import duties on total imports and on domestic production.

This comes at a time when the government budget is suffering from a large deficit, estimated to be around 51% of total expenditures in 1996. The reduction of this deficit, and ultimately its elimination, is one of the main objectives of economic policy in Lebanon. It is expected, in the Horizon 2000 plan prepared by the CDR, that the Lebanese Government would be able by the year 2005 to balance its budget by taking a number of measures, including an increase in the tax burden, which would have to rise from 18.9% of GDP in 1995 to 27.10% in 2005. If it is assumed that the structure of government revenues will remain unchanged, that is, that all revenue components will rise by the same proportion, then the Horizon 2000 plan projects that, in order to balance the budget by 2005, customs duties would have to increase as shown below:

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Average rate of import duties implied by the Horizon 2000 plan (percentage)	16.60	17.60	18.40	19.30	19.60	19.90	20.00	20.30	20.50	20.60

If the rates, as implied by the Horizon 2000 plan aimed at balancing the budget, are compared with the value of duties (which, according to the assumptions used here, would be collected on Lebanese imports with the free-trade agreement in effect), a negative–and increasing–difference is observed as follows:

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Percentage difference between import duties under the Association Agreement and under the Horizon 2000 plan	-2.20	-4.30	-6.10	-8.00	-9.50	-11.0	-13.4	-14.0	-15.7	-17.2

This increasingly negative difference between import duties under the proposed free-trade agreement and those implied by the Horizon 2000 plan would make it impossible to balance the budget:

RATIO OF OVERALL BUDGET BALANCE TO GDP, 1998-2007

(Percentage of GDP)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
According to the Horizon 2000 Plan	-13.7	-10.8	-8.1	-5.9	-4.0	-2.5	-0.4	1.3	2.9	4.1
After the creation of a free-trade area with the EU	-15.4	-13.9	-12.5	-11.7	-10.8	-10.5	-9.4	-8.9	-8.4	-8.4

3. *Alternative taxes*

In order to make up for the potential revenue losses which would arise from the removal of import duties under the proposed free-trade agreement, the Lebanese authorities would have to find new sources of revenue. However, it is not expected that these alternative revenues could be generated by raising existing direct taxes or from imposing new income or capital gains taxes. First this would contradict the government policy (the policy of the present Government, at least), which lowered income taxes to attract foreign capital and promote new investments.

Second, in Lebanon, as in most developing countries, direct tax revenues are much lower than tariff revenues. In the 1996 budget plan, for example, the share of direct taxes in total tax revenues is less than 18%, whereas customs duties alone represent 56% of the total. Therefore, no matter how much direct taxes are increased, the revenue thus generated would still be far from enough to offset the loss of tariff revenues. One solution may be then to raise indirect taxes on goods and services. Regardless of the type or level of new taxes on services, there is no reason for the Government to refrain from imposing on goods new taxes equal to the present tariff revenues or to the level of future fiscal needs, especially since the budget is running an increasingly large deficit. If the Lebanese authorities, as some expect, decide to replace every reduction in tariffs with a new domestic tax on goods (for example, a value added tax), such a tax would probably have different rates and would apply equally to both domestic output and imports as specified by the proposed free-trade agreement (this agreement prohibits any discrimination between domestic products and imports, in terms of domestic taxation). However, if a new tax of this type were to be adopted (it should not apply to exports), it would be collected mainly from imports (which would account for about 93% of revenues raised thus), and only marginally from domestic production (about 7% only).[6]

It can therefore be concluded that the new tax rates would be very close to the reductions in import duties, if the purpose of the new tax was to generate revenues equal to those lost from customs duties. This means that the establishment of the free-trade area would have little or no impact on domestic prices in Lebanon. It will be seen later that this point is very important. As a result, the financial role of customs duties would remain unchanged but would operate under another name. This is what happened in Greece, after it joined the European Union. The share of customs duties in the budget revenues dropped

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[6] Whether Lebanon decides to exempt only EU products from customs duties, or to include the rest of the world as well, it is expected that the share of imports in the Lebanese market would not be less than 80%. Consequently, what is left for domestic products would not exceed 20%, and half of this (10%) would be value added. The value added tax would be determined as follows: 80/90 = 89% on imports and 10/90 = 11% on Lebanese products. However, about 40% of domestic output comes from small production units, and these are very numerous, according to the latest census by the Ministry of Industry. For all practical purposes, tax collection from these entities is next to impossible. If it is assumed (and this is a reasonable assumption) that the authorities would be able to collect 60% of the value added tax due on domestic output and 100% of the same tax due on imports, then revenues from this new tax would be in the proportion of (11 x 60)/100 = 7% from taxes on domestic output and in the proportion of 100 - 7 = 93% from taxes on imports.

to 0.1% in 1993, while the share of indirect taxes and fees on goods and services rose from 31.6% in 1980 to 68.3% in 1993.[7]

B. Losses to the Lebanese Economy from Trade Diversion

Phasing out customs duties on imports from the EU, while keeping the duties unchanged on imports from the rest of the world, will increasingly induce Lebanese consumers to replace their imports from the world markets by higher-priced imports from the EU countries. This additional cost of imports, which is a loss to the Lebanese economy (and an additional gain to the EU economies), will increase after each tariff reduction by Lebanon. For two reasons, this loss is expected to reach a significant level at the end of the transitional period:

- Although customs duties in Lebanon are relatively moderate in comparison with those of other developing countries, they remain quite high (an average rate of 15%).

- Many EU member countries are technologically advanced; they produce goods which are, in general, close substitutes to those produced by the rest of the world.

Table 1 attempts to show the potential loss to Lebanon from the diversion of a part of its imports in favour of the EU countries.

The last line of table 1 shows, as expected, that the losses to Lebanon from trade diversion would gradually increase with the phasing out of import duties, to reach a very high level at the end of the transitional period.

It should be pointed out, however, that there is a way for Lebanon to avoid these potential losses. Each time there is a reduction of Lebanese tariffs on goods from the EU, a similar reduction in the same proportion should be applied to imports from the rest of the world. This would circumvent the preferential treatment of EU imports, prevent trade diversion and thus avoid losses to the Lebanese economy.

This solution is not in convention of the proposed free-trade agreement, which leaves to each party the freedom to set its external tariffs according to its own perceived interests. Therefore, if the Lebanese negotiating team cannot obtain from the EU a compensation for the trade diversion losses (given that Lebanon's losses are the EU's gains), then Lebanon–if it decides to join the proposed free-trade area–should seriously envisage eliminating tariffs on its imports from the rest of the world, along with the liberalization of its imports from the EU.

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[7]The World Bank, *World Development Report 1995* (New York: Oxford University Press, 1995).

TABLE 1. ESTIMATED LOSS TO LEBANON FROM TRADE DIVERSION IN FAVOUR OF EU COUNTRIES

(Millions of dollars; in current prices)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Value of total imports a/	10685	11816	13193	14448	15659	17347	19210	20206	22228	24464
Trade diversion in favour of EU countries (percentage of total imports) b/	3.3	6.5	9.5	12.4	15.2	17.8	20.4	22.9	25.3	27.6
Value of trade diversion in favour of EU countries	353	768	1253	1792	2380	3088	3919	4627	5624	6752
Difference between duties on imports from EU countries and those on imports from the rest of the world (in percentage)	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
Estimated loss to the Lebanese economy from trade diversion c/	5.3	23	56.4	107.5	178.5	277.9	411.5	555.2	759.2	1012.8

a/ Taken from "Horizon 2000 Reconstruction and Development" prepared by the Council for Development and Reconstruction (CDR) (The Final Report).

b/ These figures are derived from line 1 in the third text table above, by subtracting 50% from each number. The 50% is the European Union's share in Lebanese imports.

c/ This means that the difference between duties on imports from EU countries and those on imports from the rest of the world is supposed to be equal to the difference between the prices from both sources.

C. LOSSES TO THE LEBANESE ECONOMY FROM A DECREASE IN ITS DOMESTIC PRODUCTION

With few exceptions, Lebanese industries benefit from protective tariffs. Raw materials and intermediate goods needed for domestic production are subject to low customs duties (2%-5% in general), while competing imported goods are subject to high customs duties (15%-35%). There is no comprehensive study about the effective rates of protection enjoyed by Lebanese industries. However, since the average value added in the domestic industries is 49%, according to the December 1995 industrial survey carried out by the Ministry of Industry, and since imported industrial goods similar to domestic products are subject to an average 20% tariff, with only 2% on intermediate goods, then the effective rate of protection, which varies from an industry to another, would average about 47%.[8]

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[8] The effective rate of protection gives the rate of increase in value added under protection in comparison with the value added for the same output under free trade. If the price of a unit of a good is LL 100, for example, and the price of intermediate goods is LL 51, then the value added (under trade protection) is LL 49. Since it is assumed here that the rate of import duties is 20% on competing foreign goods and 2% on intermediate goods, then the price of the good, under free trade, is LL 83.3 = 100/(1+0.20) and the price of intermediate goods is LL 50.0 = 51/(1+0.02). The value added under free trade is LL 83.3 - LL 50 = LL 33.30. The effective rate of protection is then [(49 - 33.3)*100] / [33.3] = 47%.

If the proposed free-trade area is established, the phasing out of customs duties on imports from the EU would lead to a gradual elimination of the protection enjoyed by Lebanese industries. Apart from the cases in which the effective rates of protection owing to the current tariffs are redundant (they seem to be non-existent in Lebanon) and the cases in which some existing industries can reorganize their production and survive without protection, the phasing out of customs duties will be accompanied by a decrease of the domestic production of some goods, perhaps to the point of extinction. As a result, some domestic factors of production will become idle and until they find alternative activities with at least an equal rate of return, the phasing out of customs duties by Lebanon will lead to a loss in domestic production. This kind of loss is not taken into account in the standard economic literature on trade liberalization, on the assumption that the domestic factors of production which become unemployed, owing to the competition of imports from other members of the free-trade area or the customs union will find without delay alternative activities with rates of return that are at least equal to those of their previous activities. The new occupations will be found in the industries where the country possesses a comparative advantage and which will expand or be created as a consequence of the liberalization of trade in the partner countries.

Such a phenomenon is hardly to be encountered in the case at hand, first because Lebanese industrial products have enjoyed a completely free access to the European countries since 1978. This free access cannot and will not be improved upon by the new agreement. Second, the Lebanese industrial sector is in general not cost-effective. It is oriented toward the domestic market, with a secondary orientation towards exporting to the neighbouring Arab countries. Since its exports to the EU have been negligible, the sector does not stand to benefit effectively from the free access offered by the EU. Unless and until an almost complete restructuring of the Lebanese industrial sector takes place, the liberalization of trade with the EU is expected to cause a loss to the Lebanese economy.

The question is: If the free-trade area is established, what would be the loss to the Lebanese economy from a drop in domestic output? The answer is given in table 2.

There is no loss when the factors of production in the industries whose output is reduced or eliminated can find, without delay, alternative activities with similar rates of return, but in the present case this is unlikely to happen. If it is assumed, however, that these factors need one year to find alternative activities, the loss from the successive and equal reductions (1.5% annually, as assumed above in the first text table) will amount to $84 million per year (in 1994 prices), with a loss of 5,031 permanent jobs and 1,761 seasonal jobs. This loss will remain unchanged and will disappear by the end of the year 2008. If, on the other hand, it is assumed that the period needed to find alternative activities is longer, there will be a greater loss; if it is two years, for instance, the loss in value added would be $84 million x 2 = $168 million per year.

Finally, if each job lost in the industrial sector is not replaced, there will be an annual loss accumulation which, from the year 2007 on, will reach $84 million x 10 =

$840 million per year in value added, with a loss of 50,310 permanent jobs and 17,610 seasonal jobs.

Which one of these scenarios is likely to materialize? In its present state, the Lebanese industrial sector, if deprived of protective tariffs, is generally unable to compete with industrial imports from the EU countries. In this case, the volume of its sales in the domestic market would most probably drop by 50% from its present level, as shown in table 2.

It is therefore expected that the proposed free-trade area with the European Union would inflict a heavy loss on the Lebanese industrial sector unless the latter were able to attract adequate investments (possibly in cooperation and association with the EU business community) to rehabilitate itself and establish new industries. In this way, it would have the capacity to cope with foreign competition without imposing protective tariffs, and its production would become mainly export-oriented, not only to Arab markets but also to the European Union. The renovated and new industries could then absorb the factors of production which were operating in the industries where output was reduced or eliminated. As will be seen later, new and large-scale industrial investments are essential to the success of the proposed free-trade area as far as Lebanon is concerned.

II. POTENTIAL GAINS TO LEBANON FROM THE PROPOSED FREE-TRADE AREA WITH THE EUROPEAN UNION

There are two sources of possible gain for a country joining a free-trade area: a rise in imports (which economists call "trade creation") and a rise in exports.

A. GAINS FROM TRADE CREATION

When a country joins a free-trade area and reduces or eliminates its customs duties *vis-à-vis* the member countries, its domestic prices will usually go down, leading to an increase in consumption and a decrease in production, and therefore to a rise in imports. This rise in imports represents for the country a gain which has two sources: first, the increase in domestic consumption; and second, the replacement of domestic production with lower-cost imports.

The following examines both sources of gain in the case of Lebanon.

1. *Gains from the rise in consumption*

For a country joining a free-trade area, the rise in consumption owing to the elimination of customs duties is considered, in theoretical and empirical studies, as a major source of gain. In general, the underlying assumption is that the eliminated duties would

TABLE 2. LOSSES TO THE LEBANESE MANUFACTURING SECTOR FROM THE CREATION OF A FREE-TRADE AREA WITH THE EUROPEAN UNION, 1999-2007

	1997	1998	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008
Average rate of customs duties (%) a/	15.00	13.50	12.00	10.50	9.00	7.50	6.00	4.50	3.00	1.50	0.00	–
Scenario No. 1: Factors of production will remain unemployed for a period of one year												
Industrial production index (for domestic market) b/	100	95.50	95.50	95.50	95.50	95.50	95.50	95.50	95.50	95.50	95.50	100
Value added losses c/		84	84	84	84	84	84	84	84	84	84	–
(Millions of US$)		5031	5031	5031	5031	5031	5031	5031	5031	5031	5031	–
Permanent employment loss d/		1761	1761	1761	1761	1761	1761	1761	1761	1761	1761	–
Seasonal employment loss d/												
Scenario No. 2: Factors of production will remain permanently unemployed												
Industrial production index (for domestic market) e/	100	95.50	91	86.50	82.00	77.50	73.00	68.50	64.00	59.50	55.00	55.00
Value added losses e/ (Millions of US$)		84	168	252	336	420	504	588	672	756	840	840
Permanent employment loss e/		5031	10062	15093	20124	25155	30186	35217	40248	45279	50310	50310
Seasonal employment loss e/		1761	3522	5283	7044	8805	10566	12327	14088	15849	17610	17610

Note: An em dash (–) indicates that the amount is nil.

a/ The average rates of customs duties used in this table are from the first text table above.

b/ The production index for the local market.

c/ Value added losses were derived as follows: from the 1995 industry survey commissioned by the Ministry of Industry in Lebanon, the value of the industrial production reached $3,719 million in 1994, with exports for about $509 million; consequently, $3,719 million-$509 million = $3,210 million for the local market. The value added of this output is $1,573 million ($3,210 x 49.10%), and it is assumed that the value added will grow at a rate of 6% between 1995 and 1997. As a result, the value added for 1997 is $1,873 million (or $1,573 x [1.06]). In this case, the losses from the unemployment of resources for one year is $84 million (or $1,873 x 4.5%) where 4.5 is the drop in the production index.

d/ Employment losses were calculated using the 1995 industry survey, which indicates that every 59.7 permanent jobs and 20.9 temporary jobs produce $1 million of value added.

e/ Losses are calculated as in notes c/ and d/, but there is, in this case, an annual accumulation.

not be replaced by other taxes or, at least, not by taxes on imports–but the structure of the Lebanese economy, as has been seen, will compel the authorities to compensate any reduction in customs duties with an equal domestic tax that will be levied mainly on imports. As a result, domestic prices will remain unchanged and there will be no rise in consumption. Thus, there is no expected gain to Lebanon from this source.

2. *Gains from replacing domestic production with lower-cost imports*

In general, the underlying assumption here is that the factors of production, idled by increasing competition from other member countries, will find alternative activities with rates of return at least equal to those of the lost activities. Again this assumption, as outlined above, may not apply to Lebanon.

These gains, however, are not significant compared with potential losses from the drop in production. If it is assumed that the average rate of customs duties in Lebanon is 15%, the potential gain from replacing high-cost domestic production with imports from the EU countries would be–if the idled factors of production do not find alternative activities–one fourteenth of the potential loss from that replacement.[9]

Thus, the gains from increased imports owing to trade creation (considered the main source of gain to a country joining a free-trade area) would be nil in the case of Lebanon when the increase in imports is due to a rise in domestic consumption, and negligible when it is due to the replacement of high-cost domestic production with lower-cost imports from the EU countries.

B. GAINS FROM INCREASED EXPORTS

Lebanon is a developing country with per capita GDP of about $2,500 and with per capita exports not exceeding (according to official customs statistics) $200 in 1994. In contrast, in some small developed countries, such as Sweden, Denmark and Switzerland, per capita GDP ranges between $26,000 and $36,000 (10 to 15 times that of Lebanon), and per capita exports range between $7,000 and $12,000 (35 to 60 times those of Lebanon). This comparison suggests that the growth of the Lebanese economy will depend, to a large extent, on the ability of Lebanon to increase its exports, in particular its industrial exports. To the extent it contributes to that end, the free-trade area membership will be beneficial to Lebanon. As mentioned above, the main characteristic of the proposed free-trade area is that it will take place between widely different economic entities. Lebanon is a very small country, with an estimated GNP of $8 billion to $12 billion, whereas the combined GNP of the EU countries is about $8,000 billion–one thousand times that of Lebanon. Therefore, the demand of the EU countries for Lebanese exports would be perfectly elastic, which means that Lebanon could export to these countries, at their own price level, any quantity of any product. Thus, if Lebanon does not

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[9] For the proof, see annex 2.

join the free-trade area, Lebanese exporters will have to bear the burden of customs duties levied by the EU countries. If Lebanon does become a member, Lebanese exporters will be among those who benefit from tariff exemptions. In other words, the gain to Lebanon from joining the free-trade area would be proportional to the level of EU customs duties.

Owing to successive reductions resulting from the GATT trade negotiations, EU customs duties have reached a very low level, with an average rate of 4.30% at the end of 1994. Under the Uruguay Round agreements, this rate will gradually fall to 2.67% by the year 2000. The customs duties on industrial goods (the most relevant category for the Lebanese economy) will drop to 3.90% in 2000, from 6.50% in 1994. Consequently, the gain to Lebanon from joining the free-trade area would not be significant in terms of saved customs duties.

Although this kind of benefit is limited, the advantage that Lebanon could derive from increasing the volume of its exports to the EU is virtually unlimited, because, as stated above, of the perfect elasticity of the demand by the EU countries for Lebanese products.

Since 1978, Lebanon has been enjoying the same tariff exemptions that are included in the proposed free-trade area agreement. Nevertheless, the value of Lebanese exports to EU countries is negligible. In 1994, it did not exceed $86 million, about 25% of which was in fact re-export of goods originating in the EU countries, such as aircraft engines. The reason for this situation is that Lebanese industrial production, with few exceptions, is oriented first to selling in the domestic market, where it enjoys tariff protection, and second to exporting to neighbouring Arab countries, where it can take advantage of geographical proximity and common language and culture.

If it is to benefit from the proposed free-trade area, Lebanon will have to make fundamental changes in the structure of its production, namely in the industrial sector. Along with rehabilitating existing industries, new industries will have to be established, probably in collaboration and association with the EU business community. The main purpose of this restructuring would be to increase exports to the EU countries, the Middle East countries and the rest of the world.

It is obvious, therefore, that Lebanon would benefit from the EU free-trade area only to the extent that its industrial sector would be able to attract new investments. To this end, a number of conditions should be met, including those related to security; in addition, there must be public sector efficiency, adequate judicial processes, modern infrastructure, and export-promoting policies. So far, Lebanese trade policy has been restricted to protecting domestic production through customs duties which, although moderate, increase the cost of competing imports. In order to be able to export and, therefore, to attract new investments to build export capacity, Lebanese industry needs a completely new official policy, which would aim at reducing the cost of domestic production instead of increasing import prices.

Thus, it is possible, but not certain, that Lebanon could gain from an increase in exports. Again, exports could remain negligible, but could also reach very high levels. In fact, everything would depend on the ability of Lebanese industry to attract new investment and on the policies followed by the Lebanese authorities.

What is the minimum increase that needs to be achieved in Lebanese exports to the EU in order to offset the losses to the Lebanese economy that would be sustained if Lebanon joined the free-trade area? And what is the amount of new investment needed to produce that increase in exports? To answer these questions, the paper reviews the estimated losses to the Lebanese economy, as detailed in table 3.

Table 3 is based on the assumption that the factors of production that are idled in industries whose output decreases after each reduction in customs duties or which go out of business will stay unemployed. The author believes that this is the most realistic assumption for, if the Lebanese industrial sector does not change in order to make it more attractive to export-oriented investments, it is almost certain that the idled factors of production will not find alternative activities, at least in the industrial sector. Table 3 shows the estimated losses to the Lebanese economy under two different scenarios: one in which customs duties are reduced only for the EU countries; and a second, in which they are reduced in the same proportion for all other countries as well. Under the first scenario, the loss would be larger than under the second scenario, because it includes a loss from trade diversion, which would not exist in the second scenario.

Table 3 shows that if Lebanese exports to the EU remain as weak as they are, the free-trade area will inflict a heavy loss on Lebanon that the country can scarcely afford. This loss would increase rapidly after each reduction in customs duties, until it reached about 6% of GDP under the first scenario (removal of customs duties for the EU countries only) and about 3.5% of GDP under the second scenario (removal of customs duties for all countries).

Table 4 tries to provide a solution to the questions raised above.

Table 4 shows that, in order for Lebanon to avoid the losses that would result from joining the free-trade area, its industrial exports to the EU should rise fast enough so that by the year 2007 they would amount to about $5,000 million if customs duties are reduced only on imports from the EU countries, and about $2,800 million if customs duties are reduced simultaneously on imports from all countries of the world. Table 4 also shows that by the year 2007, additional investment in the Lebanese industrial sector should reach $1,800 million under the first scenario and $736 million under the second. Unless these targets are achieved on time, the proposed free-trade area would have a highly adverse impact on the industrial sector and thus on the whole Lebanese economy. However, if the protocol on the rules of origin is adopted as proposed, it would be very difficult, if not impossible, to reach these targets.

TABLE 3. ESTIMATED TOTAL LOSS TO THE LEBANESE ECONOMY FROM THE IMPLEMENTATION OF A FREE-TRADE AREA

(Millions of current US$, unless otherwise specified)

	Losses from trade diversion (both scenarios deal with cases where Lebanon lowers import duties)		Losses from the drop in domestic output a/	Gains from the switch to lower-cost imports b/	Net losses to domestic output (both scenarios deal with cases where Lebanon lowers import duties)			Net losses as a percentage of total output	
Year	First scenario: Lowers duties on imports from EU (1)	Second scenario: Lowers duties on all imports (2)	(3)	(4)	First scenario: Lowers duties on imports from EU (5)	Second scenario: Lowers duties on all imports (6)	Domestic outputs c/ (7)	First scenario (5):(7) (8)	Second scenario (6):(7) (9)
1998	-5	Zero	-104	7	-102	-97	14895	0.68%	0.65%
1999	-23	Zero	-217	15	-225	-202	16717	1.35%	1.21%
2000	-65	Zero	-338	24	-370	-314	18770	1.97%	1.67%
2001	-108	Zero	-468	33	-543	-435	21060	2.58%	2.07%
2002	-179	Zero	-609	44	-744	-565	23666	3.14%	2.39%
2003	-278	Zero	-760	54	-984	-706	26324	3.74%	2.68%
2004	-412	Zero	-921	66	-1267	-855	29280	4.33%	2.92%
2005	-555	Zero	-1095	78	-1572	-1017	32584	4.82%	3.12%
2006	-759	Zero	-1281	91	-1949	-1190	35912	5.43%	3.31%
2007	-1013	Zero	-1480	106	-2389	-1374	39582	6.04%	3.47%

a/ The values in column (3) were derived from table 2, Scenario No. 2, the second line, on value added losses, where the figures are in constant 1994 dollars. The values in column (3) above were obtained by converting the value added losses in constant 1994 dollars into values in current dollars, assuming that international prices in dollars would increase by 4% annually during the period between 1995 and 2007, in line with the assumption used in the year 2000 Plan by the CDR.

b/ In column (4), the same methodology described above was used to convert a $6 million gain in constant 1994 dollars into current dollar values for the period in question.

c/ This information was taken from the CDR plan for reconstruction.

TABLE 4. ESTIMATED NECESSARY CHANGES IN INDUSTRIAL EXPORTS AND INVESTMENTS TO COMPENSATE FOR LOSSES FROM THE IMPLEMENTATION OF A FREE-TRADE AREA

(Millions of current US$)

	Needed increase in exports to compensate for losses a/		Additional net investments needed to increase industrial exports b/	
Year	First scenario: Tariff reductions for the EU countries only (1)	Second scenario: Tariff reductions for all countries (2)	First scenario: Tariff reductions for the EU countries only (3)	Second scenario: Tariff reductions for all countries (4)
1998	208	198	408	388
1999	459	412	492	420
2000	755	641	580	448
2001	1108	888	692	484
2002	1518	1153	804	520
2003	2008	1441	960	564
2004	2586	1745	1132	596
2005	3208	2076	1220	648
2006	3978	2429	1508	692
2007	4876	2804	1760	736

a/ The figures in columns (1) and (2) are respectively derived from columns (5) and (6) in table 3, on the assumption that the value added for manufactured goods in Lebanon is about 49% of output value, according to the above-mentioned Report on Industrial Census by the Ministry of Industry.

b/ The figures in columns (3) and (4) are respectively derived from columns (5) and (6) in table 3 by multiplying the annual changes in columns (5) and (6) by 4, which is the incremental capital-output ratio (ICOR), as used in the Year 2000 Plan for reconstruction and development of Lebanon.

III. THE PROTOCOL ON THE RULES OF ORIGIN

From the viewpoint of Lebanon's interests, the proposed protocol includes two important issues: the rules of origin and Article 14, which prohibits the refunding of customs duties and does not provide for their suspension.

A. RULES OF ORIGIN

In any agreement on tariff exemptions or reductions, goods exported by a member country are not considered as part of its production and thus are not entitled to benefit from preferential treatment in the importing member country unless they meet certain conditions, called the rules of origin.

A good usually goes through a number of production processes or stages. Each stage involves a physical transformation of the product and adds to its market value, hence the expression "value added".

Sometimes, all the processing operations take place in the exporting country; in this case the good is considered as wholly produced by the country in question, and the resulting domestic value added is equal to 100% of the price.

In most cases, however, the various processing operations take place in a number of countries, and the domestic value added generated in the exporting country would be a certain percentage of the price (for instance 30%). What conditions must then be met for the product to be considered as originating in the exporting country? This is determined by the rules of origin. These rules are based, often implicitly, on the value added or on the degree-of-processing criterion or on a combination of both criteria.

In its proposal, the European Union has not established a general rule of origin to be applied to all commodities, but rather a great number of rules to be applied to different commodities or different groups of commodities. The list of rules covers 111 pages; some are based on the concept of value added, some on the concept of the degree of processing and others on a combination of both.

A detailed survey of the rules of origin proposed by the European Union is beyond the scope of this study, which will, therefore, be restricted to the following remarks:

- In some instances, the rules of origin require that a commodity be wholly produced by the exporting country. In most cases, however, partial transformation is accepted.

- When implicitly based on the value added criterion, the rules require in some instances that intermediate goods be wholly produced by the exporting country, as in the case of corn oil, sunflower oil and seafood products, which must be produced respectively from seeds and fish produced in the exporting country. In other instances, intermediate goods can be imported, as in the case of soybean oil, peanut oil and palm oil. In yet other instances, the rules require that the value of imported intermediate goods must not exceed a specific proportion of the commodity price, which varies from one commodity to another.

- When based on the degree-of-processing criterion, the rules of origin rely on customs tariff classification to determine if the degree of processing is sufficient for the specification of origin. In some instances, a change from one tariff item to another is sufficient, as in the case of cocoa products; in other instances, the degree of processing should result in a transformation that involves two changes in tariff classification. For example, meat products must be produced with live animals, which could be imported; if they are produced with imported meat, they are not considered as a product originating in the exporting country. Another example is the requirement that crocheted women's knitwear must be produced with textile fibres and not with imported thread, and that men's garments must be produced with thread and not with textiles. Lastly, in some instances, the processing of a commodity is considered as sufficient, even if there is no

classification change from one tariff item to another, as in the case of roasted or ground coffee, and the case of tea, including aromatic tea.

- In many other cases, a combined criterion is used, based on value added and the degree of processing. In addition to changes in tariff classification as a result of processing, the rules require that the price of imported intermediate goods not exceed a given proportion of the exported commodity price; this proportion varies from a commodity to another.

In the form in which they are being proposed, the rules of origin are tailored to the interests of the productive sectors in the EU countries. Most probably, they constitute a serious obstacle to the growth of Lebanese exports to the EU countries and thus limit to a great extent the potential gains that Lebanon would enjoy by joining the free-trade area.

In the author's view, the proposed rules should be carefully and extensively analysed in consultation with the Lebanese industrial community, in order to determine what points are acceptable and what amendments should be proposed. It is in the interest of Lebanon to adopt a general and simple rule of origin, which would for instance require a minimum share of the domestic value added (say, 60%) in the exported good price, or a ceiling on the share of imported intermediate goods (say, 40%). Alternatively, the rule of origin could require that the processing operation result in a single tariff classification change from one item to another. This is because Lebanese industry depends heavily–and most probably will continue to depend–on imported raw materials and intermediate goods. It would not be in the interest of the country to allow any obstacle to these imports to be erected.

B. Reimbursement and suspension of customs duties

According to article 14 of the proposed protocol, Lebanese exports that are manufactured with imported intermediate goods on which import duties have been reimbursed, or with intermediate goods that have benefited from a tariff-suspension status (free-trade areas, industrial warehouse, temporary entry), would not benefit from tariff exemptions under the free-trade area agreement, even if they met all other requirements of the rules of origin. However, the provisions of article 14 do not apply to agricultural products: import duties paid on intermediate goods can be reimbursed, because this happens to be in line with the interests of agriculture in the EU countries.

The prohibitive provisions of article 14 would partly–and most often entirely–eliminate the benefits to Lebanese industry that should arise from the proposed free-trade area.

Since in the EU countries tariff rates are low (an average of 6.50% on industrial goods, to be reduced to 3.9% by the year 2000), the imposition by Lebanon of customs duties on intermediate goods may raise the cost of its industrial production by an amount exceeding the value of exemptions granted by the European Union. The only way to overcome this obstacle would be for Lebanese industry to use the cumulative origin rule,

that is to import the needed intermediate goods from the European Union itself, and in so doing to circumvent the provisions of article 14. This solution, however, is not always possible or appropriate, because: the needed intermediate goods may not be an EU product; and the double freight cost from the European Union to Lebanon (as an intermediate good) and then from Lebanon to the European Union (as an end- product) could make Lebanese industrial exports uncompetitive on the EU markets and thus cancel out the benefits of the free-trade area, with regard to the interests of Lebanon.

The provisions proposed in article 14 cannot be justified. In addition to the rules of origin, customs duties *per se* are levied only on goods to be consumed within a country. The reimbursement of duties levied on re-exported goods and the duty-suspension status applied to temporary imports of intermediate goods are common systems; both are used all over the world, including the EU countries. The proposed article 14, in addition to the already restrictive rules of origin, has no purpose but to limit the Lebanese export capacity to the EU countries. Eventually, the implementation of the provisions of article 14 and the rules or origin could wipe out all the benefits from the proposed Association Agreement. The end result of this association would be a net loss for Lebanon.

As was stated above, Lebanon must examine carefully and extensively the rules of origin specified for each industry, in order to take a stand in negotiations. The provisions of article 14, however, should be utterly rejected. If the European party insists on article 14, and Lebanon decides to accept the Association Agreement, the negative impact of article 14 could be avoided by an immediate elimination of customs duties on all raw materials and intermediate goods that are needed for Lebanese industrial production.

This paper now turns to its last point–the impact that the free-trade areas between the EU and the Mediterranean countries will have on regional economic cooperation and integration.

IV. THE IMPACT OF THE EU-MEDITERRANEAN FREE-TRADE AREAS ON REGIONAL ECONOMIC COOPERATION AND INTEGRATION

If the success of the free-trade area between the EU and Lebanon is conditional, from the point of view of Lebanese interests, on the ability of Lebanon to restructure its economy in order to make it more cost-effective and export-oriented, then it should be taken for granted that Lebanon would gain from regional cooperation and integration. The Lebanese economy is very small, and exporting is therefore a necessary condition for the Lebanese industry to benefit from economies of scale and become competitive. Its own region is the area where the products of Lebanon, because of proximity and the common language, have the best conditions for competition. The same applies to the other countries of the region.

The question asked here is what is the expected impact on regional economic cooperation and integration of the free-trade areas between the EU on the one hand and

Lebanon and the rest of the concerned Mediterranean countries on the other hand. The answer in this section will be brief and based on considerations of a general nature.

It must be noted first that the free-trade areas already in existence or which will be created either have or will have a bilateral character. They take place strictly between the EU and each of the Mediterranean countries separately. Hence, a Lebanese industrial product, for example, may have free access in the EU countries but will have to be submitted to customs duties and other barriers to trade wherever these exist, if it is exported to any country of the region. The same applies if the product is exported by Tunisia or Morocco. True, the Association Agreements signed or to be signed between the EU and the Mediterranean countries, and in particular articles 1, 23 and 54 of these, stipulate that the Agreement aims at promoting intraregional trade, and that they will not preclude the maintenance or the establishment of regional free-trade areas or customs unions. Such provisions can be construed as a wish or declaration of intention, but the Agreements do not contain any concrete measures which would effectively promote regional economic cooperation and integration.

All the attempts made at integration since the 1950s by the Arab countries, whether including them all or restricted to a subregion, ended in almost complete failure, the last attempt being the decision made at the level of the League of Arab States in February 1997 to create a free-trade area between all the member countries over a ten-year transitional period beginning in early 1998. There is no indication that this new attempt will escape the same fate as the previous efforts.

The reasons for the failure have been analysed extensively in the economic literature. They are varied and include: the lack of a political will on the part of the member countries that is strong enough to surmount the difficulties standing in the way of economic integration; lack of sufficient direct means of transportation and communication between the countries of the region; and incompatibility between the economic systems of the member countries.

The bilateral free-trade areas between the EU and each of the Mediterranean countries will have three positive effects on regional economic cooperation and integration. The first effect relates to the fear of competition. Experience has shown that the Arab countries, like most of the developing countries, are afraid of exposing their domestic production, in particular their industries, to foreign competition, whether from Arab countries or from the rest of the world. Having been built mainly to meet local demand, the domestic industries are in general cost-inefficient and operate under extensive protection. Free competition that allows foreign products into the country would likely wipe them out, hurting the vested interests and aggravating unemployment, which is very often high.

The successful implementation of a free-trade area between Lebanon and the EU presupposes that Lebanon has managed to restructure its industrial sector and to make it, as has been seen, cost-effective and export-oriented. If Lebanon manages to make its

industries capable of facing competition from the EU countries, Lebanon will certainly not be afraid of exposing its industrial sector to competition from the countries of the region.

The second effect concerns the costs from trade diversion. When two or more Arab countries engage in a trade liberalization scheme, they will incur high trade diversion costs for mainly two reasons:

- The level of protection from tariffs and other barriers to trade are usually high in most of the countries of the region;

- Import prices from the partner countries in the regional scheme are generally much higher than import prices from the efficient sources of supply in the rest of the world.

In turn, the high trade diversion costs render the regional integration scheme less attractive to potential member countries.

Suppose that along with the free-trade area with the EU, Lebanon entered into a regional free-trade area agreement. In such a case, exporters of the regional partner countries would have to compete in the Lebanese market with (generally cost-effective) exporters from the EU. Import prices in Lebanon from the region could not exceed import prices of similar products from the EU. As a consequence, trade diversion costs from the regional arrangement would in very many cases be nullified or at least substantially reduced.

The third and last effect that the free-trade areas with the EU would have on regional economic cooperation and integration relates to domestic investments, the increase of which is very much needed almost by all countries of the region.

Under the bilateral free-trade area arrangements, the EU exports would have free access in all the Mediterranean partner countries of the EU, while products from any particular Mediterranean country would be subject to normal tariffs and other barriers to trade if exported to any other country in the region. This situation would be different if in addition the countries of the region also concluded a free-trade arrangement. By so doing, they would enhance–it is hoped in a substantial way–their respective opportunities to attract new investments.

In conclusion, it can be said that the free-trade areas between the EU and the Mediterranean countries would facilitate the creation of schemes of regional economic cooperation.

V. SUMMARY AND CONCLUSIONS

A. SUMMARY

The new trade agreement proposed to Lebanon by the European Union is based on the principle of reciprocity, in the sense that Lebanon would have to grant European commodities, although gradually, the same exemptions which are granted to Lebanese products by the European Union. From this viewpoint, it represents a backward step, because under the 1978 agreement in effect, Lebanese industrial products enjoy, with no reciprocity, unrestricted access to EU markets. Moreover, the EU is appending to the proposed agreement a protocol on the rules of origin, which are tailored to the industrial needs of the EU countries. If accepted, some of them will be formidable obstacles to the growth of Lebanese exports to the EU.

The question is, therefore: Should Lebanon accept the proposed new free-trade area agreement and the protocol on the rules of origin? If so, under what conditions?

The attempt to answer this question involves an examination of the potential losses and gains to Lebanon from joining the free-trade area, as well as a look at the rules of origin.

1. *Potential losses*

Three factors are relevant here:

- *Loss of import duties*: In itself, this is not a loss to the Lebanese economy, but rather is a financial loss (although expected to be high) which must be compensated by new domestic taxes (such as the value-added tax) on domestic products and imports, but not on exports. Lebanese imports, then, would be the main target of such taxes, and the tax rates should be approximately equal to the reductions in customs duties. As a consequence, domestic prices would remain unaffected by the free-trade area.

- *Losses from trade diversion*: The preferential treatment to be granted by Lebanon to EU products would result in the replacement of a great number of Lebanese imports from world markets with higher-cost imports from the EU countries. This diversion of imports would result in a loss to the Lebanese economy, with this loss expected to increase after each tariff reduction by Lebanon in favour of the EU countries, reaching a very high level at the end of the transitional period when full exemption would be granted to imports from the EU. Making a number of assumptions, the author estimated that the losses would amount to about $1 billion in 1994 prices, using the findings of the model on the Lebanese economy adopted by the CDR.

If, as is likely to happen, the Lebanese negotiators cannot obtain from the European Union a full compensation for the loss from trade diversion (given that the loss

to Lebanon is a gain to the EU countries), Lebanon could resort to a simultaneous, equally gradual elimination of customs duties on imports from the rest of the world. Then, regardless of their origin, all Lebanese imports would receive the same preferential treatment; there would be no trade diversion and, therefore, no loss to Lebanon.

- *Losses from a decreasing or vanishing domestic production:* This loss is not usually taken into account in theoretical or empirical studies on free-trade areas, which assume that the idled factors of production will find without delay alternative activities with rates of return that are at least equal to those of their previous activities. This assumption does not apply to Lebanon, however. While some Lebanese industries will suffer from a drop in production, others will go out of business owing to increasing competition from the EU–and the idled factors of production will not be able to find alternative activities, at least in the industrial sector, if this sector remains in its present situation. This would result in an expected high loss, which the author has estimated (on the same basis used to estimate losses from trade diversion) at $840 million in 1994 prices, together with a loss of more than 50,000 permanent jobs and about 18,000 seasonal jobs.

2. *Potential gain*

This study has examined two possible sources of gain:

- *Gain from increased imports:* This gain, which economists call "trade creation", is considered in economic theory as the main source of gain for a country joining a free-trade area (or a customs union). The present study, however, has shown that, in the case of Lebanon, this kind of gain would be negligible.

- *Gain from increased exports*: This study has shown that, in the case of Lebanon, this gain is probable, and could vary from very small to very large.

Although they benefit from exemptions under the 1978 agreement now in effect, Lebanese exports to the EU are presently very weak. Lebanese industrial production has mainly developed with an orientation to meeting domestic demand in a protective environment, but also with a view to export mainly, and sometimes exclusively, to the neighbouring Arab countries. In general, in terms of quality and price, Lebanese industrial production is not exportable to EU markets.

In order to benefit from the exemptions that are included in the new Association Agreement (basically identical to those of the 1978 agreement), Lebanon needs new industrial investments, to enable it to produce for exportation. If Lebanon succeeds in attracting adequate investments for this purpose, its gains could be considerable. If not, they would remain negligible.

The proposed rules of origin are another obstacle to achieving the desired increase in exports.

3. *Rules of origin*

The present study has shown that the rules of origin, as proposed by the European Union, will hamper the growth of Lebanese exports to the EU. Actually, they are hidden instruments to protect EU production. The Lebanese negotiators should therefore give special attention to the following two elements:

First, according to Article 14 of the rules of origin, Lebanese exports which have benefited from a duty-reimbursement regime or which enjoy a duty-suspension status (free-trade area, industrial warehouse or temporary entry) cannot be duty-exempted in the EU countries, even if they meet all other conditions specified in the proposed protocol.

It is obvious that this article cannot be accepted by Lebanon.

Second, the European Union is not proposing a general rule for all industrial products, but rather specific rules for each industry, based either on the value-added or the degree-of-processing criterion, or on both criteria. The rules are designed to serve the interests of EU industries and could obstruct external competition.

If the Lebanese negotiators cannot replace all of the proposed rules with a single and general rule, based on the value-added or the degree-of-processing criterion, the proposed rules should be examined one by one, in order to determine what should be accepted, rejected or proposed for amendment.

B. CONCLUSION

What are, ultimately, the interests of Lebanon? Would they be better served by Lebanon's joining the proposed free-trade area under the new Association Agreement with the European Union or by staying out of it? It is not easy to answer. On the one hand, there would certainly be a significant loss, stemming mainly from the drop in industrial output and, in some cases, from the closure of businesses, owing to increasing competition from the EU. This implies that Lebanon should receive compensation from the EU for the loss incurred through trade diversion; alternatively the loss could be avoided by a gradual elimination of customs duties on imports not only from the EU countries but also from the rest of the world. On the other hand, there could be a gain, ranging from a negligible amount to a high level, exceeding the possible loss. It would come mainly from an increase in exports, which cannot be achieved, however, without attracting new large-scale investments to the industrial sector, perhaps in collaboration with investors from the EU countries. In so doing, Lebanon would secure modern technology and gain access to foreign markets. These investments, however, need an appropriate environment, including stable conditions and policies that would lead to lower domestic production costs by international standards. Thus, without the needed investments and the increase in

industrial exports, Lebanon would incur a great loss from joining the proposed free-trade area.

Eventually, if accepted by Lebanon, the free-trade agreement will prop up the industrial sector (and probably, in the future, the agricultural and services sectors) to the point that by the end of the transitional period, it could operate in a duty-free environment with no tariff protection. This, in itself, is not inconsistent with Lebanese interests. On the contrary, Lebanon needs to restructure its economy, namely the industrial sector, in order to be able to obtain greater access to foreign markets in general, and to EU markets in particular. Accordingly, there is no contradiction in the long run between the interests of Lebanon and the trade liberalization scheme proposed by the European Union. The problem for Lebanon is how to enable its industrial sector to make a transition from operating under protection to operating in free-trade conditions, without stirring up economic and social troubles. The solution to this problem should be found during the transitional period, which is unilaterally set at 12 years by the European Union and which should end by the year 2010, as decided upon at the Euro-Mediterranean Conference held in Barcelona (27-28 November 1995). This solution depends not only on the negotiation team but also (and mainly) on the Lebanese authorities. The problem for Lebanon is not simply to obtain better conditions from the EU but also to design and implement appropriate domestic economic policies.

In sum, the author believes that it is in the interests of Lebanon to accept the proposed free-trade agreement, but with the following conditions:

- Each reduction in Lebanese tariffs should be linked to the achievement of a specific increase (to be determined by negotiations) in Lebanese exports to the European Union, so that Lebanon would not initiate the tariff reduction process or go to a further stage before reaching the negotiated specific level of export increase. If this condition is not accepted by the European Union, tariff reduction by Lebanon–and consequently the 12-year transitional period–should not start before, say, a period of five years during which Lebanon would rehabilitate its infrastructure and meet all economic and other conditions. It would, otherwise, be very difficult for Lebanon to attract additional investment and to avoid the losses and the economic and social problems that could result from joining the proposed free-trade area.

- In order to avoid a loss from trade diversion, Lebanon should, at each phase of the transitional period, reduce simultaneously and in the same proportion its customs duties on imports from the EU and from the rest of the world, if Lebanon, as expected, cannot obtain adequate compensation from the European Union.

- Regarding the proposed protocol on the rules of origin, Lebanon should utterly reject article 14, under which the EU tariff exemptions on Lebanese industrial exports are not applied if the raw materials or intermediate goods used in their manufacturing have benefited in Lebanon from a tariff-

suspension status (free-trade area, industrial warehouse, etc.) or if the paid import duties have been reimbursed.

- The proposed rules of origin should be replaced with a single rule, based on the value-added or degree-of-processing criterion (a one-time tariff classification change). If this condition is not accepted by the European Union, the Lebanese authorities should undertake, in collaboration with the industrial community, a detailed and extensive survey aimed at identifying the rules that could be accepted, rejected or proposed for amendment.

The Lebanese public and private sector authorities should be convinced that the future of Lebanese industry does not depend on its being protected in the domestic market, which is very small, but rather on lowering its production costs. Appropriate policies and procedures should therefore be put in place without delay, in order to modernize the industrial sector and make it export-oriented. Lebanon would then be able to benefit from joining the free-trade area proposed by the European Union.

To end, it is of prime importance to Lebanon to enter a regional free-trade arrangement, whose conclusion would, it is hoped, be facilitated by the Association Agreements between the EU and the Mediterranean countries.

Annex 1

STRUCTURE OF THE LEBANESE DOMESTIC MARKET FOR INDUSTRIAL PRODUCTS BY COUNTRY OF ORIGIN

A. THE SITUATION IN 1994

	Value in millions of US$	Share (percentage)
1. Lebanese Industrial Production (according to the 1995 Industrial Survey by the Ministry of Industry)	**3.72**	
Less:		
Industrial exports*	.50	
Industrial output sold in the domestic market	3.21	33.33
2. Value of industrial imports	**5.42**	
Plus customs duties (15%)	6.23	
Plus 3% for clearance, transportation and storage	6.40	
Distributed almost evenly between the European Union and the rest of the world:		
Imports from the EU	3.20	33.33
Imports from the rest of the world	9.61	100.00

* The calculation here is based on 1994 foreign trade statistics published by the Lebanese Customs Higher Council.

B. PROJECTED STRUCTURE OF THE LEBANESE MARKET FOR INDUSTRIAL PRODUCTS AFTER THE CREATION OF A FREE-TRADE AREA WITH THE EUROPEAN UNION

Assuming that for every 1% reduction in import duties on European industrial products, the share of these goods in the Lebanese domestic market would rise by 2%, and since the average customs duties in Lebanon is 15%, the share of European industrial goods in the domestic market, by the end of the transitional period, would amount to 63.33% (or 33.33% + 30).

If it is assumed that the increase in the EU share works equally to the detriment of domestic industrial output and the industrial imports from the rest of the world, the 30% gain in market share for European products will translate into a 15% loss in the share of domestic output (33.33% - 15 = 18.33%), and a 15% loss in imports from the rest of the world (33.33% - 15 = 18.33%).

Consequently, Lebanese imports of European goods as a percentage of total imports of industrial products would amount to about 78% (or 63.33/(18.33 + 63.33).

Annex 2

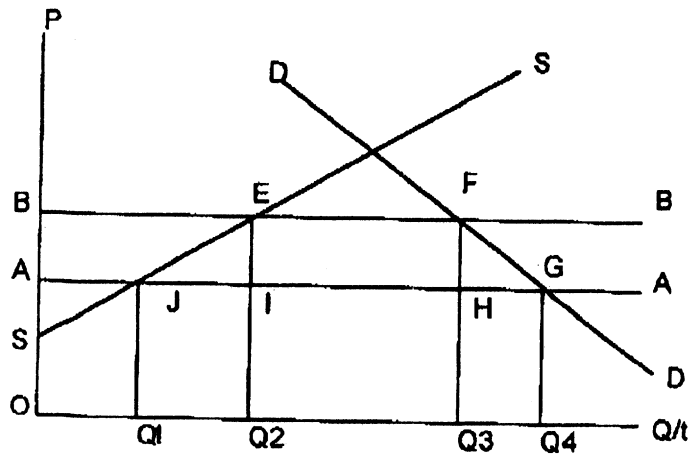
NOTE ON THE LOSSES AND GAINS TO A SMALL DEVELOPING COUNTRY FROM TRADE LIBERALIZATION OR FROM AN INTEGRATION SCHEME–A DIFFERENT VIEW

In the standard analysis of the gains and losses to a country from trade liberalization and from the formation of a customs union or free-trade area, two assumptions, usually implicit, are made which do not accord in general with facts in the developing countries and in Lebanon in particular. The first assumption is related to the gain from the increased consumption that is supposed to result from the removal of tariffs and the second to the gain from the replacement of domestic production by lower-costs imports. The relaxation of the two assumptions in order to make the analysis more realistic will show that trade liberalization or the formation of a free-trade area (or the like) will bring to a small developing country lower gains and higher losses than those obtained in the standard analysis.

B. THE STANDARD ANALYSIS

The standard analysis of trade liberalization is illustrated in figure I. SS and DD represent respectively the supply and demand in a small developing country of a certain good which is supposed to be homogeneous. BB is the supply curve of the rest of the world, customs duty AB included, while AA is the same supply curve, customs duty excluded.

Figure I



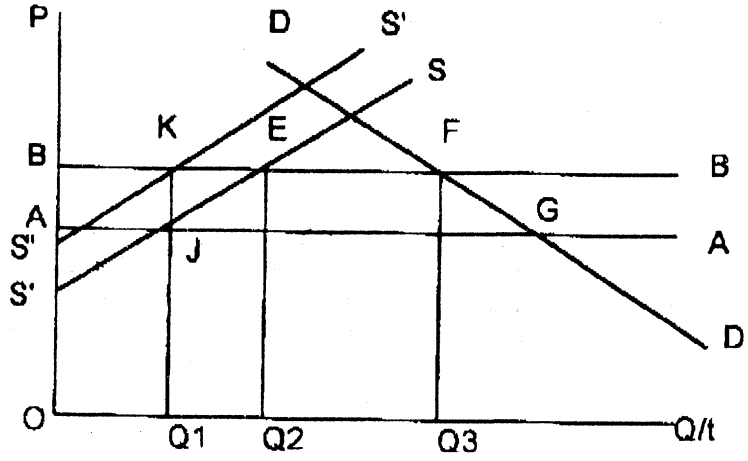
According to the standard analysis, the removal of customs duty AB will bring the domestic price down from OB to OA. Domestic consumption will increase per unit of time by the quantity HG. Domestic production will decrease by JI. Imports will increase by HG + JI. The standard analysis concludes that the country will obtain a gain that has two components: a gain in the consumer surplus represented by area FGH; and a real cost saving from replacing domestic production by lower-cost imports equal to area EIJ. This conclusion rests, as mentioned above, on two assumptions which will now be treated successively.

1. *The assumption related to the gain from the increase in consumption*

When the standard analysis states that the removal of the customs duty AB will result in a decrease of the domestic price by that amount, it assumes that this duty will not be replaced by any other tax on imports. However, this assumption is not in the least realistic in the case of a small developing country such as Lebanon, where the share of tariff revenues in the total fiscal receipts of the central Government is around 55%. Because of the structure of its economy, Lebanon, like most, if not all, of the small developing countries, is not able to forego tariff revenues, nor will it be able, if tariffs are removed, to compensate for them by imposing new taxes on income or capital gains. The only feasible and practical alternative available to the Lebanese authorities would be to impose new taxes, such as a value added tax, on domestic production as well as on imports. In fact, however, the new tax revenues are expected to be levied mainly (in the proportion of 90%, or more) on imports and only marginally on domestic production. Because of the narrow base of this latter and also because the large majority of the domestic production units are very small, making the collection of the new tax revenues a very difficult and costly task, the new tax rates will accordingly have to be equal to or at least very close to the customs duties removed for compensation to be possible.

In the situation represented by figure 2, the customs duty AB of figure 1 has been removed and has been replaced, for fiscal reasons, by a new tax of an equal amount, which will be levied on imports as well as on domestic production. For this reason, the domestic supply curve shifts upwards by a distance equal to AB from SS to S'S', while the supply curve of the rest of the world, including the new tax, remains the same at BB as it formerly was when tariffs were in effect. Hence, domestic consumption remains the same, at point F. As a consequence, the country does not reap any gain in consumer surplus from the removal of its tariffs, as predicted by the standard analysis.

Figure 2



2. *The assumption related to the gain from the substitution of domestic production by lower-cost imports*

In the situation illustrated in figure 2 (and also in figure 1), domestic production per unit of time decreases by the quantity KE, which is equal to JI, which is replaced in consumption by lower-cost imports. To say–as the standard analysis does–that a gain equal to the area EIJ accrues to the country from this replacement is to assume that the factors of production made idle by the drop in the domestic production have readily found new employment with returns at least equal to the earnings they have lost and which are represented in both figures 1 and 2 by area EJQ_1Q_2.[10] More often than not, this assumption is far from being realistic in small developing countries, including Lebanon, in particular as far as the industrial sector is concerned. The reason is that, with few exceptions, domestic production has been built and operates under tariffs and other means of protection in order to sell mainly in the local market. If protection is lifted, many of the domestic firms will be wiped out of business, with no possibility for the small developing country to provide new jobs to the factors of production made jobless. The loss to the country from the decrease of its production by the quantity JI per unit of time will then be equal to the area EJQ_1Q_2.[11]

For this loss to be zero, as is assumed in the standard analysis, the economy of the small developing country should be restructured and its existing production units replaced

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[10] Iff the customs duty is 15%, $EI = 0.15\ JQ_1$. Accordingly, the area EJQ_1Q_2 divided by the area EIJ would give: $2.15/0.15 \neq 14$.

[11] Let t = the *ad valorem* tariff rate: $OA = P$ and $Q_1Q_2 = Q$; the area $EIJ = 0.5\ (t\ P\ Q)$; the area $EJQ_1Q_2 = 0.5\ (2P + tP)\ Q = 0.5\ PQ\ (2 + t)$; hence, $EJ\ Q_1Q_2/EIJ = (2 + t)/t$. If $t = 0.15$, then $(2 + t)/t = 14.34$.

by cost-effective, mainly export-oriented activities. This restructuring, however, needs quite a long period of time to be implemented and is unlikely to succeed without substantial investments as well as financial and technical assistance from the developed countries. Meanwhile, the small developing country will bear from the removal of its protection a *net loss* equal in figure 2 to EJ Q_1Q_2 - EJI = J Q_1Q_2I. This net loss, which could be considered of a transitional character, is in many instances quite heavy.

B. TRADE DIVERSION

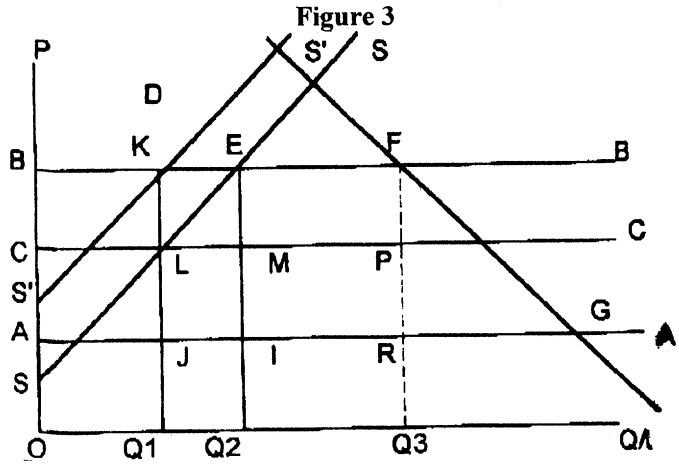
To the net loss mentioned above must be added the loss from trade diversion, as accounted for in the standard analysis, in order to obtain the total cost to a country joining an integration scheme. In this respect, it is noteworthy that if the integration scheme is being set up between a large developed country or a group of developed countries and a small developing country, like the free-trade area arrangement being at present negotiated between the European Union and Lebanon, the loss from trade diversion is expected to be heavy for the small developing country and almost nil for its developed partner, for at least two reasons:

- The share of the large developed country in the small developing country's total imports is usually very high before the free-trade agreement is concluded and will probably increase substantially soon afterwards. For example, the share of the European countries in Lebanese imports at the current time amounts to around 50% and may increase after the full implementation of the free-trade area to more than 80%. The situation is quite the opposite on the other side. The share of the developing country in the total imports of its large developed partner is almost nil and will most probably remain so for many years after the implementation of the free-trade arrangement.

- Customs duties are usually much higher in the developing countries than in the developed countries.

The impact of a free-trade arrangement on the economy of a small developing country is illustrated in figure 3.

Figure 3



In this figure, AA and BB are the supply of the rest of the world, respectively excluding and including the customs duty AB. CC is the supply curve from the partner country in the free-trade arrangement, which is assumed here to be large and developed. BC is the new domestic tax (for example, a value added tax) the developing country has created to compensate for the tariff revenue loss resulting from the free-trade arrangement. To simplify the analysis here, BC has been chosen so that it is equal to the difference between OB and OC. The supply curve of the rest of the world, including tariffs and the new domestic tax (not represented in figure 3) will shift above BB by a distance equal to BC.

As in the case illustrated in figure 2, consumption in the small developing country remains unchanged at point F. Consequently the country does not enjoy a gain from an increase in consumer surplus. On the other hand, production will decrease by LM, which is replaced by lower-cost imports from the developed member country. However, as long as the small developing country fails to provide new activities to the factors of production rendered unemployed, the replacement of its production by imports will bring to it not a gain but a net loss which is equal to area LQ_1Q_2M in figure 3. In addition, there is a loss to the country from trade diversion, equal to area IMPR. However, the small developing country can certainly avoid the trade diversion loss if it reduces its customs duties *vis-à-vis* the rest of the world by the same rate and at the same time that it reduces them *vis-à-vis* its partner countries in the integration scheme. In such a case, the situation of the developing country would be as illustrated in figure 2. This solution, it be should noted, is not possible unless this scheme is of the free-trade area type, where each member country retains complete freedom to determine the levels of its external tariffs.

CONCLUSION

Because of its economic structure, a developing country–in particular if it is small like Lebanon–is not likely to enjoy a gain from trade liberalization or from participating in an integration scheme with a large developed country or group of countries; rather, until its succeeds in restructuring its economy and creating new cost-effective export-oriented activities, the small developing country will suffer a loss. This loss, which could be heavy and could last for quite a long period of time, would explain at least partly the reluctance and resistance of the developing countries to liberalizing their trade and should be taken into account in trade negotiations, whether bilateral or multilateral.

Annex 3

CUSTOMS DUTIES IN LEBANON

The new "Lebanese customs duties according to the Harmonized System", published by the Lebanese Customs Higher Council and effective from the beginning of 1996, include 5,578 tariff items and sub-items distributed by duty rates, as shown in table 1.

TABLE 1. DISTRIBUTION OF LEBANESE TARIFF ITEMS AND SUB-ITEMS BY RELEVANT TARIFF RATES

(Percentage of total number of new items)

Duties	Zero	2	5	10	15	20	25	30	35	40	50	80	100
Proportion of items taxed with each tariff rate	0.01	30.4	15.7	26.1	11.8	5.80	3.30	5.80	0.54	0.00	0.01	0.20	0.07
Cumulative proportion	0.01	30.4	46.1	72.2	84.0	89.8	93.1	98.9	99.4	99.4	99.5	99.7	99.7

Table 1 demonstrates the following:

1. About 99% of tariff items and sub-items are associated with rates not exceeding 30%.

2. These items can be divided almost equally in two categories:

- About 46% are taxed at a rate of less than 5% (in fact two thirds of this category are taxed at a rate of less than 2%).

- The remaining 53% are taxed at a rate of between 10% and 30%.

3. If each tariff rate is weighted by the number of items or sub-items to which it is applied, the average tariff would be 10%.

4. This rate of 10%, the most frequent in Lebanese tariffs, is also the median rate.

- Calculating the unweighted average of tariff rates in the first 15 chapters (major categories), which include mainly live animals, meat products, vegetables and fruits, if each rate is weighted by the number of relevant tariff items, yields a rate of about 10.25%.

5. If the rates of 2% and 5% that apply mainly to raw materials, intermediate goods, agricultural and industrial equipment and machinery, and also some foodstuffs considered as basic are excluded, the average tariff rate computed with the above-mentioned method

will be 15.98%. This rate reflects, in the author's opinion, the average tariff rate on industrial products in Lebanon.

In table 2, the weighted average of the Lebanese tariffs has been calculated on the basis of the customs duties as applied on 24 May 1997, and using as weights the value of Lebanese imports in 1996 corresponding to each rate.

The question is now: what are the effective rates of protection provided to domestic industry through customs duties? The answer to this question requires information that was not available to the author when the study was undertaken. However, in order to learn about effective protection in Lebanon, the author used some of the findings of the Industrial census published by the Ministry of Industry in December 1995 and obtained the effective rates shown in table 3.

The weak point in these figures is mainly that they are based on sectoral ratios of the value of intermediate goods to the value of the final goods in order to derive the effective rates of protection for specific industries. These figures should therefore be used with caution.

TABLE 2. THE AVERAGE LEBANESE TARIFFS WEIGHTED BY THE CORRESPONDING IMPORTS

Tariff rates	Corresponding imports in 1996		Weighted rate
	Value (000) US$	Percentage of total imports	
(1)	(2)	(3)	(4) = (1) x (3)/100
0	180907	2.39	0.00
2	1717568	22.72	0.45
5	933190	12.34	0.62
10	1745820	23.09	2.31
15	718872	9.51	1.43
20	366804	4.85	0.97
25	299810	3.97	0.99
30	548758	7.26	2.18
35	63976	0.85	0.30
40	434	0.00	0.00
50	727	0.01	0.00
80	13468	0.18	0.14
100	1386	0.02	0.02
21 a/	609190	8.06	1.69
87 b/	358199	4.74	4.12
		Total	15.22

Source: The Lebanese Customs Administration.

a/ This rate relates to passengers vehicles, on which tariffs are *ad valorem*; rates increase with the successive tranches of import unit value. The rate in the table was obtained by dividing the customs duties collected on imported cars by their total import value.

b/ Four items in the Lebanese customs tariffs nomenclature have *ad valorem* rates combined with minimum specific rates. The rate used in the table was the result obtained by dividing the customs duties collected on the four items by the value of the corresponding imports.

TABLE 3. APPROXIMATE RATES OF EFFECTIVE PROTECTION TO SELECTED LEBANESE INDUSTRIES

Industry	Average effective rate of trade division
Processed vegetables	46%
Soaps and detergents	50%
Clothing	48%
Metal capsules and caps	28%
Aluminium products	40%
Leather tanning	48%

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THE LINK BETWEEN THE IMPACTS OF INTERNATIONAL TRADE AGREEMENTS AND THE PEACE PROCESS ON THE INDUSTRIAL SECTOR (THE CASE OF TEXTILES AND CLOTHING)

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Introduction

Much has been said and written about the economic cooperation between Israel and ESCWA member countries that would result from the peace process when real peace finally reigns over the region.

In reality, economic cooperation cannot be achieved merely by political declaration or by the creation of official avenues for engaging in trade. It will only materialize when the people in the region really believe that it will bring to them welfare, prosperity and employment, when the members of the business community are convinced that they are entering into business deals that are fair and beneficial to both parties, and above all when all interested parties in the region respect and try to tolerate fundamental differences whether these relate to religion, culture, level of development, or national pride and aspirations and when confidence has replaced years of mistrust.

Going beyond generalities to a more in-depth study of regional cooperation requires a recognition that regional cooperation is governed by an entire spectrum of rules and disciplines imposed by various international agreements to which the countries of the region have committed themselves.

With regard to trade, relations between Israel and the Arab countries (for the purpose of this paper, the ESCWA member countries) should take into consideration the various rules and disciplines of:

- The multilateral trading system as embodied by the World Trade Organization (WTO).
- The regional trade agreements, specifically the European Union's free-trade area agreements with the Mediterranean countries, the United States-Israel free-trade area agreement and the United States-Palestine Agreement.
- The free-trade area agreement between Arab countries signed in March 1997.
- The bilateral agreements between Israel and some Arab countries.

Each of these agreements has its own rules, obligations and rights, which have to be taken into consideration when drawing up cooperation initiatives or in seeking out

business deals or concluding contracts. This can be called *the trading environment under which economic cooperation may be established.*

This paper is concerned mainly with regional cooperation in the textiles and clothing sector.

Israel is a major producer and exporter of textiles and clothing compared with the ESCWA member countries. Its exports to the developed world amounted to a little over $1 billion in 1995 (see table 1), while the total ESCWA member countries' exports to the developed world amounted to just under $2 billion (see table 3) in the same year.

Among the ESCWA member countries, Egypt is a major exporter of textiles and clothing. Its exports to the developed markets amounted to $939 million in 1995; those of the United Arab Emirates totalled $515 million. Outside the ESCWA member countries, comparable figures for Tunisia and Morocco were $2.5 billion and $3.4 billion respectively (see table 3).

A closer analysis of the figures reveals that Israeli exports of textiles and clothing have grown slowly, at a rate of about 10% over the past few years, while ESCWA member countries' exports are rising quickly. For example, Egypt's exports of clothing have grown fourfold over the past six years. Furthermore, it should be taken into consideration that Israel's exports are restrained neither in the United States nor the European Union, while in general ESCWA member countries are restrained in both of these main markets. It should also be noted that Egypt, Lebanon and the Syrian Arab Republic have been traditional producers and exporters of textiles and clothing and that the remaining ESCWA member countries have the potential to increase their exports. In addition, all ESCWA members countries, and Israel as well, have internal and external constraints working against any increase in their exports.

I. WTO RULES

Israel and a number of ESCWA member countries are members of the WTO. Jordan, Lebanon, Oman, Saudi Arabia and the Syrian Arab Republic are not members, although some of these are actively engaged in the process of acceding to the Organization. All WTO rules, disciplines, rights and obligations apply to Israel and to the ESCWA member countries which are members of the WTO. Among the Uruguay Round agreements which are relevant to these countries' exports of textiles and clothing to the importing markets are the following:

- The Agreement on Textiles and Clothing
- The tariff concessions given by each country acceding to the WTO from which it can benefit on a most-favoured nation basis
- The tariff reduction commitments made by developed countries

- The agreements on anti-dumping, subsidies and countervailing duties

- Various aspects of the other Uruguay Round agreement such as Trade-Related Aspects of Intellectual Property Rights (TRIPs), Trade-Related Investment Measures (TRIMs), rules of origin and technical barriers to trade

A. THE AGREEMENT ON TEXTILES AND CLOTHING

The Agreement on Textiles and Clothing is described as a transitional arrangement between the old regime of the Arrangement regarding International Trade in Textiles (MFA) and the more liberalized trading rules of the General Agreement on Tariffs and Trade (GATT) and the WTO. Under the MFA, ESCWA member countries have been subjected to restraints on various export items with some of their exports being severely restrained. ESCWA non-WTO members have also been restrained. It is true that almost all ESCWA member countries which export textiles and/or clothing are restrained either in the United States or the European Union (or both), yet overall they are restrained on only a few items, mainly clothing, as follows:

- Bahrain on 4 categories in the United States

- Egypt, on yarn, a group of limits on fabrics and 5 categories in clothing and yarn and fabrics in the EU

- Kuwait on 4 categories in the United States

- Oman on 12 categories in the United States and 3 in Canada

- Qatar on 6 categories in the United States

- Lebanon on 1 item in Canada

- The Syrian Arab Republic on 3 items in Canada and 1 item in the EU

- United Arab Emirates, heavily restrained in the United States

- Jordan is not restrained at all.

In contrast to this picture, Israel has never been restrained under the MFA, but has been treated like other developed countries, with the so-called gentlemen's agreement being applied. This non-application of quotas can be explained by the free-trade area agreements it concluded with the United States, the EU, and European Free Trade Association (EFTA) countries.

It should be noted that MFA quotas imposed on the exports of ESCWA member countries will not be eliminated during the 10-year transition period. An analysis of the implementation programme of the United States, the EU, and Canada shows that none of

the quota items imposed on ESCWA member countries will be integrated (eliminated) in GATT, until after 31 December 2004. Only one or two items exported by the United Arab Emirates have been developed country importers.[1]

It should also be noted that quotas maintained until the end of the transition period will benefit from the element of "growth over growth" provided for under the Agreement on Textiles and Clothing, which means the access opportunities will be increased over the coming years until the end of the transition period. For example, if Egypt's quota in 1994 was 100, it will grow to 252 at the end of the year 2004. It goes without saying that since no quotas are imposed on Israeli exports, there is no reason to discuss integration or growth, as Israel will continue to have free access to the world's main importing markets. The quotas of Lebanon, Oman and the Syrian Arab Republic will not benefit from "growth over growth" under the Agreement on Textiles and Clothing as they are not members of the WTO.

The issue of quotas under article 6 of the Agreement on Textiles and Clothing should be mentioned here: new quotas can be imposed on ESCWA member countries' exports if the importing countries can prove that items exported cause "serious damage"; quotas under this transitional safeguard may be imposed for a period that does not exceed three years.

Another element of the Agreement on Textiles and Clothing which is relevant to this study is the rules of origin disciplines under article 4. The United States has changed its rules of origin. The new rules now consider that for clothing items the country of origin is the country of assembly, not the country where the fabric is cut, as was formerly the case. However, the United States has exempted Israel from the new rules.

B. TARIFF REDUCTION BY DEVELOPED COUNTRIES ON TEXTILES AND CLOTHING

Under the Uruguay Round, developed countries committed themselves to reducing their tariffs on textiles and clothing by percentages that are not as great as the percentage reductions for industrial products. However, studies have shown that Canada has reduced its tariffs on textiles and clothing by 37% and Japan by 32%, while reductions by the European Union and the United States were quite modest, 15% and 11% respectively. However, since the original tariff bases were different, each reduction has meant that the new averages of applied rates are also quite different; the tariff average for the United States is now 15.2%, Canada 13.5%, for the European Union 10.3% and for Japan 7.3%.

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[1] M. Maamoun Abdel-Fattah, "Challenges and opportunities of the new international trade agreements (Uruguay Round) for ESCWA member countries in selected sectors: textiles and clothing industry" (E/ESCWA/ID/1997/7).

C. THE AGREEMENTS ON ANTI-DUMPING, SUBSIDIES AND COUNTERVAILING MEASURES

Article 7 of the Agreement on Textiles and Clothing calls upon members to abide by the GATT 1994 rules and disciplines so as to *"ensure the application of policies relating to fair and equitable trading conditions as regards textiles and clothing in such areas as dumping and anti-dumping rules and procedures, subsidies and countervailing measures..."*

Although these measures have been applied to exports of certain ESCWA member countries by developed countries, there is no reason that these rules should not be observed in relation to trade between Israel and ESCWA member countries, so as to ensure that fair and equitable rules apply to their trade exchange. It is well-known that Israeli production and exports are heavily subsidized, but in their future relations, ESCWA member countries and Israel should have a leveled playing field, as ensured by the WTO rules.

D. THE VARIOUS RULES UNDER OTHER AGREEMENTS

Both Israel and the ESCWA member countries must respect the WTO rules in their trade relations, especially those relating to technical barriers to trade and the protection of fashion designs under the TRIPs agreement.

To sum up, it can be said that the ESCWA member countries and Israel must take into consideration their rights and obligations under the WTO in designing the bilateral agreements that will serve as the framework for their future cooperation.

For example, it has sometimes been suggested that in textiles, some ESCWA member countries can cooperate in joint ventures, joint projects and subcontracting arrangements with Israeli firms to make use of the duty-free treatment enjoyed by Israel in both the United States and the EU markets and to take advantage of the exemption from quota restrictions on Israeli goods.

These "facts" can no longer be taken as true if the result of our previous analysis is now applied.

It is true that Israel enjoys duty-free access for textiles and clothing in the United States and the EU. However, Egypt, Jordan, Lebanon and the Syrian Arab Republic also have duty-free access to the EU under either the economic cooperation agreements or the proposed free-trade agreements. They do not have duty-free access to the American market and can benefit from the Israeli's exemption from duties in the market. With regard to quotas, cooperation makes sense only on items where ESCWA member countries are restrained (and these are very few in number); for other items ESCWA member countries and Israel are on an equal footing. For bilateral trade with each other, nothing should prevent them from initiating anti-dumping or countervailing cases against each other under WTO rules. It should be emphasized, however, that such measures

should not be resorted to for political purposes. Applying the WTO rules should not be a matter of politics.

II. EUROPEAN UNION FREE-TRADE AGREEMENTS

The European Union (EU) has concluded economic cooperation agreements with all Arab Mediterranean countries since 1997. Under these agreements, the industrial exports of the latter received duty-free access, and in addition, non-tariff barriers were eliminated. However, the EU managed to impose voluntary quotas relating to yarn, fabric and knitwear on Egypt and relating to fabric on the Syrian Arab Republic. The EU later dropped the restraints on knitwear on Egypt. Israel signed an agreement establishing a free-trade area with the EU.

Under its new Mediterranean policy, the EU is negotiating free-trade area agreements with the Arab Mediterranean countries. Such agreements have been signed with Jordan, Morocco and Tunisia.

Industrial exports receive duty-free access to the EU, whether under cooperation agreements (which are still currently valid) or under free-trade area agreements signed or under negotiation.

However, if economic cooperation between Israel and the ESCWA member Mediterranean countries is sought and if these latter would like to maximize the benefits of their free-trade area agreements with the EU, they will face a major stumbling block in the form of the EU rules of origin.

A. The European Union Rules of Origin

The EU is proposing a new set of rules to govern the free-trade area agreements which they have already signed. These rules have been accepted by all countries in Eastern Europe and by some of the former Soviet republics. The proposed rules naturally are tailored for and (it is safe to say) biased towards the interests of European countries. A careful inspection of these rules as regards textiles and clothing (HS chapters 50 to 63) reveals that they are quite restrictive and biased towards the use of EU-origin inputs.

One major aspect of such rules and one which has a critical impact on future cooperation in the Middle East region, is the cumulation of origin.

The EU allows cumulation, meaning that in a trade transaction involving three parties–the EU and two Mediterranean countries who have free-trade area agreements with the EU, for example Israel and Jordan–a shirt exported from Israel to the EU made of fabric manufactured and cut in Israel, assembled in Jordan and then returned to Israel to be exported to the EU, must fulfill the following conditions to benefit from preferential treatment in the EU free-trade area with Israel:

- It acquired "origin status in Israel".

- Jordan and Israel have signed a free-trade area agreement with the EU and have signed such agreements with each other.

- The three parties–the EU, Israel and Jordan–apply the same rules of origin, meaning they have to accept the new EU-proposed rules of origin, being negotiated currently.

These conditions are easy to comply with, only if Israel and the other Mediterranean countries have signed a free-trade agreement with each other and, naturally, if the new rules have been successfully concluded.

However, the EU may eventually accept to apply and accept "diagonal cumulation" without necessarily insisting on the conclusion of a free-trade area agreement between the two Mediterranean countries in question. It may accept a lesser type of agreement that could include an item allowing for preferential element.

Finally, the specific rules proposed by the EU must be studied carefully by each country concerned, to determine how it can obtain the maximum benefit of the EU free-trade area.

B. The United States-Israel Free-Trade Agreement and the according of similar treatment by the United States to the West Bank and Gaza Strip

As mentioned above, Israel's exports enjoy free access with regard to the following:

- Customs and duties

- Quota restrictions

- Certain rules of origin conditions, in particular those enforced by the United States since July 1996.

However, as of 1996, the United States accorded the same duty treatment to exports of the occupied territories of the West Bank and Gaza Strip. These two agreements–the one between the United States and Israel and the other between the United States and the West Bank and Gaza Strip–can be taken into consideration if regional cooperation is to be utilized.

III. THE ARAB FREE-TRADE AREA

In February 1997, the Arab countries agreed to establish a free-trade area which would eliminate tariffs over a period of 10 years; tariffs are to be reduced in 10 yearly instalments.

This Arab free-trade area is a fact that has to be taken into consideration when examining Middle East economic cooperation and when trying to determine whether it would add to or subtract from the free-trade area and whether they go in parallel. This is particularly relevant when Arab Mediterranean countries decide to enter into bilateral agreements with Israel and of course when they design their objective bearing in mind also FTA's signed with the EU or the United States.

IV. CONCLUSION

Regional cooperation between the ESCWA member countries and Israel will reflect the intensity and depth of the peace process. The form of cooperation that will emerge will embody each country's national objectives and strategies. For example, a given country may have an objective of increasing exports to other markets in the region, or of establishing joint or wholly owned projects, or of participating in joint ventures to export to third countries, or of participating in subcontracting arrangements. The extent and form of such cooperation will be based on the level of development, the size of the market, the purchasing power of the population, labour availability and labour costs (this list is by no means exhaustive). Other relevant factors include the country's infrastructure, the degree of liberalization and the degree of deregulation. Each economy, including that of Israel, has its own complexities and particularities.

There are other variables as well that should be inserted into the equation, such as the policies and strategies of other countries outside the region and what benefits they seek to gain from the region, whether meaningful regional cooperation is established or not. This also applies to multinational corporations. All these variables have to be taken into consideration when examining economic cooperation in the region. In addition, it is important not to neglect the fact that all policies, strategies and objectives take place in the context of an international environment dictated by the international obligations of the WTO, the FTA agreements of the EU and the United States and the newly formed Arab free-trade area agreement.

Careful study of the opportunities and obligations of countries in the region makes it easy to avoid the certain misconceptions about regional cooperation and to design cooperation correctly. For example:

- Why should an Arab country make use of Israel's access to the European market, when it has the same opportunities to gain access to that market?

- It is true that Israel's exports enjoy duty-free treatment in the American market and that there are no quotas on its exports of textiles and clothing. In addition, the rules of origin in the United States are quite relaxed with regard to Israeli exports. This being the case, there most definitely is a reason for ESCWA member textiles and clothing exporters to use Israeli access opportunities to the United States market. However, this potential has to be

explored while bearing in mind that only a very few items in ESCWA member countries' exports are restrained.

- The theory that cooperation between Israel and the ESCWA member countries should be designed with a mixture of advanced Israeli technology and the cheap labour of countries such as Egypt or the Syrian Arab Republic is not necessarily true, since these latter countries could operate such ventures directly with the EU under their partnership agreements. The decisive factor here involves how each partner perceives the advantage it could gain by participating in a business deal involving advanced technology and requiring a great deal of labour.

- There is a misconception about joint ventures and subcontracting based on ideas that Israel enjoys world business contacts while Arab countries do not. Experience in the past few years has shown that this is not always true, however. Ironically, the quotas enjoyed by Arab countries have attracted buyers from Europe and the United States without necessarily using Israel's role of middle-man.

- Bilateral trade between Israel and the Arab countries which are members of the WTO must be conducted according to WTO rules. It is to be expected that when trade flows at an increasing pace, then pressures from the various industries would force Governments to initiate action involving WTO rules related to anti-dumping, countervailing duties, safeguards and other provisions.

In closing, it should be re-emphasized that as a final and just peace becomes a fact in the region, economic cooperation will materialize only if it brings benefits and prosperity to all parties involved and not if one party benefits at the expense of the other.

TABLE 1A. ISRAELI EXPORTS OF TEXTILES AND CLOTHING TO THE DEVELOPED WORLD FROM 1993 TO 1995
(Millions of US dollars)

	1993	%	1994	%	1995	%
Textiles	285	32.5	322	33.2	363	34.9
Clothing	590	66.5	645	66.7	677	65.1
Total	875	100.0	967	100.0	1040	100.0

TABLE 1B. ISRAELI EXPORTS OF TEXTILES AND CLOTHING TO THE EUROPEAN UNION FROM 1990 TO 1995

(Millions of US dollars)

	1990	1991	1992	1993	1994	1995
Textiles (HS* chap. 50 to 60)	169.5	119.5	155.0	105.0	160.9	168.8
Clothing and made-ups (HS* chap. 61 to 63)	264.2	298.2	318.2	314.7	308.6	284.5
Total textiles and clothing	433.7	417.7	473.2	420.2	469.5	453.9

*Harmonized Commodity Description and Coding System.

TABLE 1C. ISRAELI EXPORTS OF CLOTHING TO THE UNITED STATES FROM 1991 TO 1995

(Millions of US dollars)

	1991	1992	1993	1994	1995
Clothing	161.7	201.5	191.2	267.6	304.7

TABLE 2. TEXTILES AND CLOTHING EXPORTS OF SELECTED ESCWA MEMBER COUNTRIES TO THE EUROPEAN UNION

(Millions of US dollars)

	1990	1991	1992	1993	1994	1995
Egypt						
Textiles	203	200	181	140	315	260
Clothing	72	94	101	139	156	184
Total	275	294	282	279	471	494
Lebanon						
Textiles	2	1	3	1	2	2
Clothing	13	20	23	24	18	19
Total	15	21	26	25	20	21
Syrian Arab Republic						
Textiles	10	7	5	2	5	8
Clothing	11	24	39	53	61	52
Total	21	31	44	55	66	60
United Arab Emirates						
Textiles	3	5	3	6	19	26
Clothing	92	160	180	217	200	166
Total	95	165	183	223	219	192

Source: European Union trade statistics.

Notes: These countries were chosen, as exports of the rest of the ESCWA member countries are negligible. Statistics of the European Union were used, as individual figures are not available.

TABLE 3. EXPORTS OF ESCWA MEMBER COUNTRIES AND SELECTED OTHER COUNTRIES TO DEVELOPED COUNTRIES FROM 1993 TO 1995

(Millions of US dollars)

	1993			1994			1995		
	Textiles	Clothing	Total	Textiles	Clothing	Total	Textiles	Clothing	Total
ESCWA									
Egypt	290	308	598	483	361	844	500	439	939
United Arab Emirates	61	429	490	52	421	473	64	451	515
Syrian Arab Republic	7	62	69	11	71	82	14	100	114
Oman	2	86	88	1	113	114	1	142	143
Bahrain	–	56	56	–	72	72	8	74	82
Qatar	–	54	54	–	64	64	1	69	70
Kuwait	1	51	52	1	28	29	1	5	6
Jordan	4	21	25	6	33	39	5	30	35
Lebanon	3	27	30	3	21	24	3	23	26
Saudi Arabia	7	2	9	6	6	12	8	12	20
Yemen	–	–	–	–	–	–	–	–	–
Iraq	–	–	–	–	–	–	–	–	–
Total ESCWA	375	1096	1471	563	1190	1754	605	1345	1950
MAJOR SUPPLIERS									
China	3159	1745	20581	3799	19544	2334	4234	21380	2561
Hong Kong	356	9377	9723	350	9357	9707	351	9420	9771
Republic of Korea	1381	4896	6277	1596	4695	6291	1819	5135	6954
Taiwan Province of China	1269	3224	4493	1393	3122	4515	1457	2741	4398
SELECTED SUPPLIERS									
India	1799	2960	4759	2087	3494	5581	2517	3896	6413
Pakistan	1659	988	2647	1822	1095	2919	2085	1246	3331
Indonesia	884	2700	3584	1055	2800	3855	1178	3061	4239
Turkey	996	3796	4752	1269	4044	5312	1504	5135	6639
Israel	285	590	875	322	645	967	363	677	1040
Tunisia	89	1719	1808	124	1966	2090	132	2399	2531
Morocco	101	1678	1779	112	1873	1985	131	2242	3375

Source: Compiled from UNSED COMTRADE.

Note: An em dash (–) indicates that the amount is nil or negligible.

TABLE 4. ISRAELI EXPORTS OF CLOTHING TO THE UNITED STATES DURING THE PERIOD 1991 TO 1995

(Millions of US dollars)

Harmonized System Category	Description	1991	1992	1993	1994	1995
237	Playsuits	1127	1019	1028	914	973
239	Infant sets	9180	10612	7363	9143	9269
	COTTON					
332	Hosiery	166	202	791	518	845
334	Coats	18	55	37	141	288
335	Jackets	654	450	691	396	355
336	Dresses	792	3052	869	2630	4601
338	Knit shirts	5679	12315	29118	25684	27637
339	Knit blouses	48095	61724	50294	74218	91093
340	Shirts	85	561	309	399	1093
341	Blouses	215	490	931	1273	534
342	Skirts	2589	1328	848	1486	2287
345	Sweaters	613	1147	599	1270	1185
347	Trousers	1399	977	2997	5619	7152
348	Trousers	29580	37957	44486	52364	40025
349	Brassieres	–	20	1898	2393	6577
350	Dressing gowns	125	105	322	679	1689
351	Nightwear	895	3808	3942	2643	3097
352	Underwear	9276	16719	23343	33012	49376
359	Other apparel	1025	1533	2324	4101	5082
360		2285	1781	–	–	–
361	Other	9022	8653	–	–	–
362	cotton	2089	2222	–	–	–
363	clothing	6737	6605	–	–	–
369		853	830	–	–	–
	WOOL					
432	Hosiery	–	–	–	–	48
433	Suit coats	36	686	1810	5640	4544
435	Jackets	63	103	–	–	–
438	Knit shirts	13	46	160	641	1232
439	Knit blouses	71	–	–	–	–
443	Suits	1382	5103	3885	4517	5780
445	Sweaters	–	–	86	1066	2587
446	Sweaters	133	177	101	269	869
447	Trousers	–	–	301	1714	1019
448	Trousers	–	–	–	–	225
459	Other apparel	15	56	53	288	271
465	Other apparel	458	448	–	–	–
	MAN-MADE FIBRE					
631	Handmade fibres	–	–	–	–	142
632	Hosiery	–	–	1406	1292	1415
634	Coats	385	217	214	82	278
635	Jackets	952	863	233	1063	788
636	Dresses	407	146	–	–	702
638	Knit shirts	760	571	1050	410	268
639	Knit blouses	1111	4170	4907	3310	4675

Harmonized System Category	Description	1991	1992	1993	1994	1995
641	Blouses	613	554	774	883	1083
642	Skirts	2108	453	540	697	1223
643	Suits	143	27	–	–	–
644	Suits	–	–	17	158	–
645	Sweaters	411	410	686	445	482
646	Sweaters	828	637	970	929	530
647	Trousers	71	–	198	118	453
648	Trousers	2121	1170	1623	2821	2585
649	Brassieres	–	–	–	–	136
650	Dressing gowns	99	28	–	–	–
651	Nightwear	11	–	–	–	–
652	Underwear	66	335	297	331	180
659	Other apparel	16186	16409	18597	21876	20082
665	Other apparel	454	743	–	–	–
666	Other apparel	314	394	–	–	–
670	Other apparel	4	145	–	–	–
739	Vegetable fibres	–	–	–	–	48
835	Jackets	–	–	45	260	–
859	Other	–	–	–	–	65
TOTAL		161714	201451	191207	267589	304717

Source: International Business and Economic Research Corporation (IBERC).

Note: An em dash (–) indicates that the amount is nil or negligible.

TABLE 5. UNITED STATES IMPORTS FROM EGYPT

		1991		1992		1993		1994		1995		1996	
Category	Description	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000
QUOTA CATEGORY													
218	Cotton fabric (m2)	–	–	–	–	–	–	–	–	–	–	454	477
219	Cotton fabric (m2)	–	–	–	–	–	–	–	–	323	187	–	–
220	Cotton fabric (m2)	–	–	–	–	–	–	–	–	804	900	616	690
226	Cotton fabric (m2)	–	–	–	–	–	–	–	–	355	146	635	16
300	Cotton yarn (kg)	–	–	–	–	–	–	–	–	4169	15175	1308	521
301	Cotton yarn (kg)	–	–	–	–	–	–	–	–	2977	17356	2443	14120
313	Cotton fabric (m2)	–	–	–	–	–	–	–	–	13543	6365	4911	2504
314	Cotton fabric (m2)	–	–	–	–	–	–	–	–	10335	6718	14	23
315	Cotton fabric (m2)	–	–	–	–	–	–	–	–	15003	7952	813	407
317	Cotton fabric (m2)	–	–	–	–	–	–	–	–	2504	1528	889	569
338	Cotton knit shirt	378	13700	633	24300	612	21800	570	19700	749	26208	1201	40534
339	Cotton knit blouse	585	16400	651	17000	610	18300	879	24500	1069	33658	988	33128
340	Cotton shirt	54	2000	69	2700	518	21800	1034	44500	1126	48350	660	32967
448	Wool trousers	–	1300	14	1600	17	1900	19	1900	20	1881	17	1643
640	M.m.f. shirts	–	–	12	1400	25	1000	3	200	19	979	10	549
NON-QUOTA CATEGORY													
237	Play suits	3	100	13	400	5	200	12	300	15	433	19	1174
239	Infantwear	27	500	97	600	188	1500	180	1700	102	1513	159	2859
331	Cotton gloves	900	100	503	800	685	1000	1026	1400	1263	1959	1182	1783
334	Cotton jackets	8	600	10	800	22	1500	30	2100	32	2375	83	5491
335	Cotton jackets	36	3500	51	5600	76	8900	51	6000	21	2714	18	2211
336	Cotton dresses	3	–	2	–	4	200	24	800	61	2240	69	2852
341	Cotton blouses	40	500	31	700	36	1000	61	2000	121	4143	142	5818

Category	Description	1991		1992		1993		1994		1995		1996	
		1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000
342	Cotton skirts	48	1500	10	400	–	600	–	300	16	628	71	3665
347	Cotton trousers	231	9100	421	17200	507	23300	460	19800	710	31996	842	37932
348	Cotton trousers	390	13400	543	21900	527	23300	693	32000	737	33880	528	25191
350	Dressing gowns	1	100	–	–	–	–	3	300	6	585	21	1875
351	Underwear	2	–	1	–	27	800	174	6000	176	8041	213	9412
352	Underwear	125	1100	203	1500	19	–	83	1000	74	1606	215	4437
359	Other apparel	8	100	15	1600	37	200	47	700	80	1019	151	1348
363		–	1300	–	2400	–	–	–	–	4732	6150	3311	4569
369		–	–	–	–	–	–	–	–	2060	8425	1866	6717
435	Wool jackets	3	–	–	–	2	300	3	200	6	1064	8	1502
442	Wool skirts	–	–	–	–	4	–	3	–	5	325	6	488
443	Wool suits	9	500	–	–	–	100	–	800	54	2614	25	1203
444	Wool suits	10	400	10	200	21	500	20	400	12	243	20	478
459	Other apparel	–	–	–	–	–	–	2	200	11	232	7	165
465	Other apparel	–	600	–	700	–	–	–	–	26	1884	39	2874
631	M.m.f. gloves	573	1500	553	1600	715	1900	741	1900	931	2430	971	2592
634	M.m.f. jackets	20	1600	19	1700	2	–	20	2400	31	3014	48	2880
635	M.m.f. coats	53	5800	91	7900	94	–	78	10800	78	13305	103	19400
638	M.m.f. shirts	–	–	–	–	–	–	1	–	7	166	50	1149
639	M.m.f. blouses	–	–	–	–	1	–	16	500	1	156	9	368
644	M.m.f. suits No.	–	–	–	–	–	–	–	–	2	43	14	354
647	M.m.f. trousers	–	–	2	–	–	–	4	–	16	544	33	988
648	M.m.f. trousers	3	–	4	–	12	200	16	400	20	830	7	165
659	Other apparel	9	–	10	–	24	300	31	400	32	440	43	774
665	Other apparel	–	1700	–	4600	–	–	–	–	980	10946	1528	17000
840	Vegetable blend	–	–	–	–	–	–	–	–	–	–	11	686

		1991		1992		1993		1994		1995		1996	
Category	Description	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000
	shirts												
844	V.f. suits	–	–	–	–	–	–	–	–	29	411	32	545
847	V.f. trousers	4	–	45	–	62	–	43	–	37	2746	43	3538
859	V.f. other apparel	–	–	–	–	–	–	–	–	10	127	14	232
TOTAL										320000		312000	

Source: International Business and Economic Research Corporation (IBERC).

Notes: Numbers are rounded to the nearest thousand. Amounts of less than $3,000 or 3,000 dozen are represented by an em dash (–). "M.m.f." stands for man-made fibre. "V.f." stands for vegetable fibre.

TABLE 6. UNITED STATES IMPORTS FROM JORDAN

Category	Description	1991		1992		1993		1994		1995		1996	
		1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000
NON-QUOTA CATEGORY													
220		10	52	14	80	–	–	–	–	–	–	–	–
239	Infant sets	–	–	–	–	–	–	–	–	13	156	6	7
338	Knit shirts	–	–	5	277	–	–	–	–	29	1334	27	595
339	Knit blouses	–	–	–	–	26	494	56	1176	82	2706	93	3452
340	Cotton shirts	–	–	–	–	46	3128	187	9911	134	4824	100	4017
341	Cotton blouses	–	–	–	–	–	–	7	6	2	98	1	32
342	Cotton skirts	–	–	–	–	–	–	–	–	7	273	–	–
347	Cotton trousers	5	373	114	7797	31	1922	22	1232	12	720	19	574
348	Cotton trousers	5	340	38	196	62	4154	85	2805	75	2325	22	700
359	Cotton apparel	12	138	–	–	65	4745	–	–	70	770	15	120
448	Wool trousers	–	–	–	–	14	1148	15	1485	8	728	5	221
465	Other wool	–	–	51	408	–	–	–	–	–	95	4	95
638	M.m.f. knit shirts	–	–	–	–	–	–	–	–	5	120	–	–
665	Other m.m.f.	3	24	23	161	73	385	–	–	47	–	161	666
666	Other m.m.f.	–	–	13	104	123	738	–	–	–	–	227	969
TOTAL										16000		12000	

Source: International Business and Economic Research Corporation (IBERC).

Notes: Numbers are rounded to the nearest thousand. Amounts of less than $3,000 or 3,000 dozen are represented by an em dash (–). "M.m.f." stands for man-made fibre.

TABLE 7. UNITED STATES IMPORTS FROM LEBANON

Category	Description	1991		1992		1993		1994		1995		1996	
		1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000
QUOTA CATEGORY													
338	Knit shirts	32	352	136	1763	35	311	17	180	15	322	13	184
339	Knit blouses	126	2163	139	2224	–	–	–	–	–	–	–	–
NON-QUOTA CATEGORY													
239	Infant sets	11	158	1	12	10	150	15	240	15	240	13	–
340	Cotton shirts	2	15	–	–	–	–	–	–	–	–	–	–
347	Cotton trousers	–	–	–	–	3	–	–	–	–	–	–	–
365	Other apparel	5	105	13	273	3372	–	–	–	–	–	–	–
659	M.m.f. other apparel	–	–	5	60	–	–	–	–	–	–	–	–

Source: International Business and Economic Research Corporation (IBERC).

Notes: Numbers are rounded to the nearest thousand. Amounts of less than $3,000 or 3,000 dozen are represented by an em dash (–). "M.m.f." stands for man-made fibre.

TABLE 8. UNITED STATES IMPORTS FROM THE SYRIAN ARAB REPUBLIC

Category	Description	1991		1992		1993		1994		1995		1996	
		1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000	1,000 dozen	$1,000
NON-QUOTA CATEGORY													
239	Infantwear	–	–	17	238	32	512	94	1410	271	4336	177	2840
300	Carded cotton yarn	88	264	–	–	–	–	–	–	–	–	–	–
313	Cotton fabric	902	442	–	–	–	–	–	–	–	–	–	–
317	Cotton fabric	112	69	–	–	–	–	–	–	–	–	–	–
334	Cotton coats	–	–	–	–	–	–	4	244	5	325	2	189
338	Knit shirts	–	–	5	46	25	300	61	915	89	1246	74	1132
339	Knit blouses	25	300	52	260	43	344	–	–	64	704	61	1213
340	Cotton shirts	–	–	–	–	5	264	–	–	7	329	5	330
341	Cotton blouses	–	–	–	–	–	–	–	–	4	144	–	–
348	Cotton trousers	24	648	6	132	–	–	–	–	–	–	–	–
352	Cotton underwear	7	44	43	258	62	372	43	387	129	589	78	564
359	Other apparel	7	28	9	28	–	–	–	–	–	–	7	25
443	Hosiery	14	700	15	675	–	–	–	–	13	293	19	454
632	M.m.f. hosiery	–	–	–	–	–	–	12	45	10	26	10	22
643	M.m.f. suits	–	–	5	81	6	103	–	–	–	–	5	79

Source: International Business and Economic Research Corporation (IBERC).

Notes: Numbers are rounded to the nearest thousand. Amounts of less than $3,000 or 3,000 dozen are represented by an em dash (–). "M.m.f." stands for man-made fibre.

Part II

PROSPECTS FOR TRADE RELATIONS

THE POLITICAL ECONOMY OF LIBERALIZATION AND PRIVATIZATION IN THE ISRAELI ECONOMY

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ABSTRACT

This paper analyses some specific aspects of the restructuring process that have taken place in the Israeli economy in recent years. The paper defines a political economy within which the process can be understood as part of the ongoing Zionist project. The steps already taken in liberalizing trade, privatizing industry and deregulating markets are evaluated from the viewpoint of their impact on the structure of the economy and integration into world markets. The paper also comments on the future role of the Israeli economy in the new Middle East.

Introduction

Since 1986, successive Israeli Governments have committed themselves to a policy of privatizing industry, deregulating markets and liberalizing trade. The decision to embark on such a comprehensive restructuring of the economy was reached by the National Unity Government (1984 to 1987), as a long-term reform plan designed to sustain the positive results achieved by its emergency and short-term measures. These were directed at eliminating the stagnation which had affected the economy from the mid-1970s and which had reached crisis proportions by the mid-1980s.[1] Further economic reform in the early 1990s was given impetus by the twin processes of liberalization and globalizing that pervaded world markets. Economic reform was envisioned, therefore, as the route that would lead Israel to integrate fully its economy with world markets and allow it to grasp new opportunities. Both the Likud and the Labour parties have repeatedly emphasized their commitment to economic reform as a necessary step toward modernizing the economy and accommodating its adjustments to the powerful new trend of globalizing. Nevertheless, economic reform–in particular

[1] For a detailed analysis of the economic crises in Israel during the period 1974 to 1986, see Y. Plessner, *The Political Economy of Israel: from Ideology to Stagnation* (State University of New York Press, 1994) and I. Sharkansky, *The Political Economy of Israel* (Oxford: Transaction Books, 1987).

the privatization of powerful economic entities, the deregulation of the capital market and removal of subsidies–has progressed at a pace slower than expected. In 1994, both the United States Government and the International Monetary Fund (IMF) criticized Israel for not moving faster on these fronts.[2] This raises an obvious question concerning the internal dynamics of reform in Israel. What are the forces that push it forward, and what are the forces that impede it? The recent trend initiated by the peace process toward normalizing economic relations between Israel and the Arab countries poses another set of interesting questions. How far has Israel gone in reforming its economy? What are the major steps needed to complete the task? What is the relation between economic reform in Israel and Israel's entry into Arab markets?

The purpose of this paper is to explore these questions. Chapter I lays the groundwork for the other sections by supplying a brief account of the Israeli system of political economy and serves as a framework for discussions of liberalization, privatization and deregulation. Chapter II traces the opening of the Israeli economy to foreign trade and evaluates its current trade regime. Chapter III examines the process of economic reform by considering three important elements: public vs. private ownership of industry, developments in the capital market, and the role of subsidies in economic activities. Finally, chapter IV considers the present stage of economic reform in the Israeli economy in conjunction with the ongoing normalization of relations with Arab economies.

I. ELEMENTS OF THE ISRAELI SYSTEM OF POLITICAL ECONOMY

The Zionist ideology and the Jewish labour parties combined to make Israeli economics in Palestine differ markedly from European colonial projects in North America, Australia and South Africa. Whereas the latter were established and nurtured by private capital investments allocated and disciplined by market forces, the former was created and solidified by public investments determined by the priorities of constructing the 'national homeland'. The absence of 'free land' in Palestine, which existed in abundance in other colonial projects, made the cost of building independent settlements very high. At the same time, Jewish immigrants could not find employment with established Jewish businesses in Palestine because manual labour was fully supplied by Arabs. This explains why during the period of the great Jewish emigration from Eastern Europe (1905 to 1914) 1 million persons immigrated to the United States and Canada and only 30,000 to Palestine, and why the majority of those subsequently returned to

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[2] See Economist Intelligence Unit, *Country Profile – Israel* (1995, 1996).

Europe or moved on to North America.[3] This set the stage for a marriage between the World Zionist Organization and Jewish labour parties. The former was "a settlement movement without settlers" and the latter "a workers' movement without work". Both understood that "if a Jewish State was going to be built, it would have to be financed by public funds invested for national reasons, and not for the sake of profits."[4] The marriage was founded in 1920 by the establishment of the General Organization of Workers in the Land of Israel, the Histadrut. This was an organization with multiple functions: labour union and simultaneously owner and operator of industrial, financial, commercial and social services.[5] One of its primary objectives was "achieving economic, political and organizational isolation of Jews from Arabs–especially the Arab working class."[6] Its efforts were successful in creating what became known as the 'labour' or 'parallel' economy during the British Mandate period (1919 to 1948). This economy was characterized by collective agriculture (the kibbutz and the moshav), public ownership of industrial, financial and service establishments (by the World Zionist Organization, the Histadrut and political parties) and a system of production and distribution fashioned after socialist principles rather than market criteria.[7] After 1948, the 'State' inherited most of the World Zionist Organization's economic functions and became, along with the Histadrut, involved in steering all economic activities, including controlling factor markets and establishing direct ownership of companies in all economic sectors.[8] Two influences were dominant. First, the expansion of the Zionist project demographically and geographically–in terms of the absorption of mass immigration and the building of new settlements on Arab land, first in the Arab Galilee and after 1967 in the West Bank, Gaza Strip and the Golan Heights–was

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[3] See H. Sacher, *A History of Israel: from the Rise of Zionism to Our* Time (New York: Alfred A. Knopf, 1982

[4] See Plessner, op. cit., p. 4.

[5] The Histadrut is considered the most durable and stable institution in Israel. It controls 25% of the economy and employs the same percentage of the labour force. More than 80% of workers are directly affiliated with it. See L. Grinberg, *Split Corporatism in Israel* (State University of New York Press, 1991).

[6] See M. Shaley, *Labour and the Political Economy in Israel* (Oxford University Press, 1992).

[7] For detailed analysis of the development of this 'economy', see B. Kimmerling, *Zionism and Economy* (Cambridge, Massachusetts: Schenkman Publishing Company, Inc., 1983).

[8] About 93% of the land is publically owned. State ownership is exercised through the Israel Land Authority, under the auspices of the Ministry of Construction and Housing, which owns about 75% of the land in Israel, and through the Jewish National Fund (JNF), which owns another 18% of the land. Even though a substantial share of capital is not collectively owned, almost all of it has been collectively allocated. For many years, there was almost no way to raise capital in Israel except through the Government (see chapter III of the present paper). Finally, the vast majority of labour has been unionized by the Histadrut (see note 5).

considered by the political leadership to be a task equal in importance to the establishment of the State and thus one that could not be left to the private sector and the forces of the free market. Secondly, the predominant role played by socialist labour parties in Israeli Governments in the first three decades reinforced opposition to the development of free markets. In the early years in particular hostility to free markets was expressed in ideological arguments reflecting the principles of socialist doctrine. Later, hostility was expressed in arguments fashioned along mainstream neoclassical lines focusing on market failures and externalities, and attributing more efficiency to public than to private allocation of resources in undeveloped markets.[9] The historical record of the first three decades, characterized by a strong government role, is mixed. On the one hand, the Israeli economy achieved considerable expansion in all fields. Israel's population increased by a factor of four. The country's GDP and GDP per capita grew (in real terms) at the impressive rate of 9% and 4.5%, respectively. It made the transformation to an industrialized society with very advanced and sophisticated capacities in science and technology. It built highly effective systems of health, education and welfare, in addition to a modern fighting force. On the other hand, the system generated serious distortions and inefficiencies. Many of the economic establishments owned by the Government and the Histadrut were kept in operation only by continuous injections of public funds, and large establishments in the private sector often depended on a steady flow of subsidies. Agricultural products exported to Europe and North America, which underpinned the image of a country that "made the desert bloom", were in fact exported at a loss. For instance, it would have been cheaper to import oranges from Europe than to grow them in Israel, let alone export oranges to Europe, which in effect was an indirect export of water, the scarcest resource in the country.[10]

Clearly, the existence of a very impressive growth record over many years despite the prevalence of micro inefficiencies indicates the existence of special circumstances that facilitated and fostered the expansion. Foremost in these circumstances are the three factors detailed below:

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[9] During the 1960s and the 1970s, a continuous debate between economists from the Bank of Israel and the Ministry of Finance took place regarding economic policy and the role of the public sector. Economists from the Ministry of Finance opposed those from the Bank of Israel, who advocated a free market approach to economic policy. They maintained that the private sector cannot be relied upon to supply the resources necessary to settle immigrants and build the infrastructure needed by the country. They pointed out that the capital market is underdeveloped and thus places very high risk premiums on private investment related to those activities.

[10] See S. Lonergan and D. Brooks, *Watershed: the role of Fresh Water in Israeli-Palestinian Conflict* (Ottowa: International Development Research Center, 1994), p. 79.

- *A steady and increasing transfer of external resources.* These include the confiscation of Arab properties in 1948, donations from Jews in Europe and North America, the compensation payments from Germany, official aid from the United States for strategic and political purposes and a continuous transfer of resources from the West Bank and Gaza Strip since 1967. While the size of these transfers varied over the years, it was always more than 10% of GNP, reaching 25% in some years.[11] Table 1 shows that this resource transfer has been responsible for a very large proportion of Israeli capital formation; in some years in the 1970s and 1980s, it financed all capital formation and some consumption.

- *Large and identifiable investment projects.* During the early stages of Israeli economic development, public investment was well suited to serve as an engine of growth. This was so because many large investment projects, which created a great deal of linkages and employed considerable labour, were easily identifiable and not dependent on private entrepreneurs to discover them. These include the construction of the country's basic infrastructure in energy, transport and housing, as well as building up traditional industries such as textiles, shipbuilding and steel. Such investments were carried out in many centralized economies during the same period and generated similarly impressive rates of growth.[12]

- *A bureaucracy imbued with the attribute of 'embedded autonomy'.* In the 1950s and 1960s, leadership in the Government, the military and industry came virtually from the same circles of the labour parties. Familiarity, dedication and a strong sense of mission allowed them to build public institutions that performed the function of a *developmental State.* The Israeli State started with a well-trained bureaucracy, selected according to practical and effective screening procedures that emphasized competence and organizational identity. It

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[11] See I. Sharkansky, *The Political Economy of Israel* (Oxford: Transaction Books, 1987), chapter 3. Note that the confiscation of Arab property in 1948 and the transfer of resources from the West Bank and Gaza Strip since 1967 are not included in these percentages. Estimates of the former varies considerably. Estimates of the latter varies between 15% and 25% of the Palestinian GNP in the West Bank and Gaza Strip, which amounted to an annual transfer of half a billion dollars to three quarters of a billion dollars in the early 1990s. See O. Hamed and R. Shaban, "One-sided custom and monetary union: the case of the West Bank and Gaza Strip under Israeli occupation" in Stanley Fischer, D. Rodrik and E. Tuma, eds., *The Economics of Middle East Peace* (Cambridge, Massachusetts, 1993).

[12] For instance East Germany, Poland and Yugoslavia had GDP growth rates for the period 1950 to 1955 of 13%, 8.8% and 11.2% respectively, which are similar to the Israeli rate of 13%.

had an internal coherence allowing *embedded autonomy*, meaning that it was tightly woven into the fabric of the different economic sectors and at the same time empowered with the autonomy and capacity to formalize its own programme and carry it through. It differed strikingly from many bureaucratic bodies in third world and centralized economies, which display little internal coherence and whose members operate by no uniform rules, but instead exploit individual and sub-group opportunities.[13] It should be emphasized here that the steady flow of foreign resources that was put at the disposal of the Israeli Government supplied the Israeli bureaucracy with a very effective instrument to safeguard its autonomy. Instead of being dependent on the private sector for revenue, the bureaucracy had the power to bestow riches on it.

The dynamic of these three factors, both separately and together, generated impressive growth despite the distortions and inefficiencies created at the micro level.

In broad terms, the Israeli political economy was created as a social democracy based on *a corporatist arrangement* involving tripartite exchange relations between *labour, capital* and *the State,* and the existence of the three factors just reviewed lent the system a unique dimension.[14] Unlike other social democracies, legitimacy emanated not only from the recognition by the three parties of their mutual interests, but also from nationalistic ideology. Accordingly, the role of the *State* was very strong; in addition to mediating between *labour* and *capital*, as in other social democracies, it also mediated between different strands of the *ideology,* which embodied different economic agendas, primarily through the labour parties under the leadership of the Mapi.

The system came under strain as a result of its very success. By the end of the 1960s, large investment projects were virtually completed in Israel. Thereafter, the relative returns on different investments became less obvious:

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[13] For an illuminating analysis of the role of the State in development, see P. Evans, *Embedded Autonomy* (Princeton University Press, 1995).

[14] The government investment allocation and generous subsidy scheme has resulted in over-investment and a reduction in the rate of return. In Israel the stock of capital per employee grew by more than 70% between 1970 and 1980 compared with only 30% in the United States, 40% in Canada, and between 45% and 60% in European countries. See A. Bergman, "Government intervention in industry: the case of Israel", *Journal of Development Economics*, vol. 25 (1987), pp. 353-367. Empirical studies have shown that the Histadrut and public firms are poor performers in a number of dimensions. Large public firms are inefficient and pay excessively high wages. See A. Bergman and others, "The production and cost structure of Israeli industry: evidence from individual firm data", Working Paper Series, Department of Economics, University of Toronto, 1992.

free-market competition and entrepreneurial skill were needed to discover and pursue new opportunities. Allowing the Government to continue to play its role as the primary force allocating investment resources, through its control of the capital market and the granting of subsidies, resulted in waste and distortions.[15] At the same time, the internal coherence of the State bureaucracy was gradually undermined by the emergence of a new generation of labour leadership reared on middle class values and aspirations rather than the collective culture of their antecedents, and by the rise of 'Zionist revisionism' and right wing parties that succeeded in presenting a reliable political alternative to the labour parties.

Naturally, the bureaucracy's reduced coherence has inevitably weakened its potential for autonomy. This was exacerbated by the changing role of capital, both from foreign and domestic sources, which started to have an important impact on the economy in the late 1970s. Although the magnitude of foreign aid increased considerably–from one sixth of GNP in the late 1970s to almost one quarter of GNP in the mid-1970s–its usefulness to the State as an external source of capital that could be used to steer economic development diminished. After the 1967 war, a major proportion of aid was devoted to military purposes, thus reducing the State's external funds that could be used for economic purposes. In addition, the emerging 'military-industrial complex' proved to be a far less deferential to the State and to hegemony by labour parties than the political-economic axis built by the State and the Histadrut earlier. Simultaneously, domestic capital in the private sector, after two decades of utilizing State subsidies and investing returned earnings, had greatly strengthened and started to display increasing vigour and assertiveness in its relation with both the State and labour. Indeed, the ascent of private capital created a 'solidarity of capital' in which the political leadership of the Histadrut encouraged its affiliates to participate in joint ventures with private investors "and joined its counterparts in

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[15] Sharkansky described this phenomenon as follows: "Israel's governmental and quasi-governmental bodies are able to spend *more than the nation's gross national product* because they receive substantial resources that do not figure into the calculation of GNP. There are grants from overseas Governments and private contributors, plus loans from overseas and domestic sources. These bizarre phenomena also reflect the overwhelming dominance of the Government in the nation's economy. Israel offers the worst of the East and West. Policy makers have economic responsibilities that resemble those of Eastern Europe, in the context of aggressive political parties, labour organizations and other features of the democratic West. Israel's variety of democracy seems especially conducive to a large and growing role of Government. No party has ever won a majority in elections conducted according to proportional representation. Coalition Governments include competitive parties and sub-party factions whose leaders seek to bid up the resources available to ministries they control, or at least to keep a retrenchment-minded finance minister from cutting the budgets of their ministries." He goes on to say that "the inability of the Government to ratchet down from triple-digit inflation during 1980-1984 owes something to this difficult combination of a dominant role for Government in the economy, and competitive democracy" (italics in the original). See Sharkansky, op. cit., p. 24.

the Government in praising the virtues of profitability and private enterprise."[16] The new trend took strength from the ramifications of the first serious economic recession, which occurred in the mid-1960s. Characteristically, the economic contraction disproportionately afflicted small and weaker enterprises and led to a rash of mergers and take-overs. Three formidable financial/industrial conglomerates–Koor, Discount Investments and Clal–emerged as dominant establishments with capital from the three sources–public, Histadrut and private. Despite competitive frictions, the 'big three' were "increasingly bound together by structural interlocks (a dense network of ownership and other business connections) and by their virtual monopolization of State subsidies."[17]

The cumulative effects of these broad and far-reaching changes on the fabric of Israel's body politic have undermined the system of social democracy. The loss of the State's autonomous character caused Israeli Governments in the late 1970s and early 1980s to lose the sense of unified policy direction. This was exemplified by the various ministries' pursuit of different, and sometimes contradictory, goals catering to different constituencies.[18] The collapse of the labour parties' political hegemony sapped the foundation of 'ideological leadership' in political Zionism and gave considerable importance to small, extremist political parties, which in turn made the task of ideological mediation unstable and very costly. The ascendency of private capital, with the tacit consent of Histadrut and public capital, drastically changed the relative weights of *capital* vs. *labour* and thus ended the earlier corporatist relationship between them.

Not surprisingly, there occurred a virtual collapse of the mediation mechanism of the system. Neither the State nor the Histadrut were capable of carrying on with their historical role of mediating corporatist exchanges, ushering in a period of open struggle over resources that unleashed tremendous inflationary pressures. This situation was also responsible for the economy's lack of effective policy responses to the shock of the 1973 war, the rise of energy costs and the decline in world trade. The inability of the system to adjust to vast and all-encompassing changes can now be seen as the main reason for Israel's slide into extreme stagflation and fiscal crisis. The vibrant economic growth in the first quarter century (1948-1973) was replaced by a sluggish period buffeted by crises, causing three-digit inflation, a worsening of the balance of payment, and increased foreign debt. Economic instability lasted more than a decade, culminating in June 1985 in a crisis that threatened a complete loss of control over inflation. Faced with this hazardous situation, the Government of National

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[16] See Shalev, op. cit., p. 295.

[17] Ibid.

[18] For a detailed analysis of the working of the Israeli Government in the 1970s and 1980s, see Sharkansky, op. cit.

Unity adopted a forceful and comprehensive stabilization programme that included a mix of expenditure reductions, expenditure switching and a freeze on prices and wages. The ensuing fall in both public and private consumption put an almost instantaneous halt to the accelerating spiral of price rises: within a period of two months, the programme reduced the annual rate of inflation from close to 500% to less than 20%,[19] although a generous grant from the United States ($1.5 billion) contributed considerably to minimizing the cost.[20] While the programme was primarily a short-term stabilization measure, it nevertheless injected a sense of discipline into Israeli markets for the first time and created a widespread realization that a longer-term remedy had to be fashioned via privatization and through a major retrenchment of Government away from direct involvement in the economy, as well as full integration with world markets.

The growth of the Israeli economy in the 1990s has been impressive and was linked to a manageable balance-of-payment deficit and a reasonable level of foreign debt. This is testimony to the economy's resilient nature and its capacity to rebound; however, the role of special circumstances should not be overlooked. These include a rapid infusion of massive quantities of labour and capital–1 million highly skilled immigrants from the former Soviet Union and $10 billion in loans guaranteed by the United States Government–and a noticeable increase in the flow of foreign investment since 1991, as a result of the peace process. Moreover, despite the relative economic stability of the 1990s, the question remained open: exactly how would the Israeli political economy evolve? To what extent would the old system of corporatist exchange be replaced by market exchange? To what extent would such a development affect and be affected by the peace process? The following two sections summarize the efforts at liberalization and restructuring in order to supply a framework suitable for an examination of the first question. In the last section, elements of the second question are examined.

II. LIBERALIZATION OF TRADE

External trade plays an important role in the Israeli economy. Industrial production depends heavily on imports of raw materials and intermediate goods. The annual volume of imports reaches a very high proportion of GDP–around

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[19] For a detailed analysis of the stabilization programme and its success in stopping inflation, see D. Patinkin, "Israel's stabilization program of 1983, or some simple truths of monetary theory", *The Journal of Economic Perspective*, vol. 7, No. 2 (1993).

[20] It is noteworthy that other countries in the Middle East, when faced with similar problems, had to take loans from the IMF and to abide by its 'conditionality' requirements. The United States' grants to Israel were free of any condition. The State Department, however, established a committee of economists to monitor the Israeli economy and report on the progress achieved by its stabilization campaign, and later on in applying the restructuring measures.

50%. The Government pursues an elaborate and generous policy of encouraging exports as a source both of foreign exchange to pay for imports and of employment. However, from the very beginning, exports fell short of imports, creating a deficit in the trade balance, which reached crisis proportions during the period 1984 to 1987. Since 1985, United States official aid together with American and European private aid have been instrumental in covering the trade deficit and in leading to a small surplus in the balance on current account in some years. In the 1990s, however, economic expansion worsened the trade deficit and increased Israeli's dependence on external aid, which amounted to $7 billion in 1995–around 10% of GDP (see table 2).

The vast majority of Israeli exports is made up of manufactured goods (70%) and diamonds (26%). The former include (in approximate order of importance) chemicals, rubber and plastics, electrical and electronics, metals and machinery, textiles, clothing and leather, wood, paper and printing, and food, tobacco and beverages. The share of agricultural products in exports has been declining continuously and now amounts to less than 5% of the total.[21] Although there are no official statistics concerning the export of military weapons, all indications point to an increasing role played by the military industry in exports. The largest single industrial company in the country is Israel Aircraft Industries (IAI), which is reported to have exported more than three quarters of its products–more than $1 billion–in the early 1990s.[22] In this regard, it should be noted that some Israeli weapons and military instruments are produced entirely for export, in particular to third world countries, as the Israeli Army itself buys better American and European weaponry.[23] The bulk of Israeli imports are raw materials and intermediate goods (75% of total) and capital goods (15%). Three items figure very prominently: fuel, defence and diamonds. The latter magnitude of the last indicates a very low value added in diamond exports. Israel's external trade is concentrated on EU countries (40% of exports and 62% of imports) and the United States (28% of exports and 18% of imports). The rest of the country's trade is mainly with Asian countries (15% of exports and 7% of imports) and the West Bank and Gaza Strip (5% of exports and 4% of imports).

Israeli commercial policy has always involved Government in all aspects of Israel's external economic relations. In the early stages, government policies were intended to constrain the volume of trade, but at latter stages they were intended to control the composition of trade among different categories of goods and services–capital goods and raw materials vs. luxury goods–and between the trade account and the capital account. There are four important stages of

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[21] All these percentages, and the others below, are averages over the early 1990s.

[22] See P. Rivlin, *The Israeli Economy* (Oxford: Westview Press, 1992), p. 45.

[23] Ibid., p. 48.

development. The first was the import substitution period extending from the establishment of the State in 1948 until the early 1960s. By using quotas and import licensing measures, the Government completely shielded domestic industries from foreign competition. Importation of a commodity could be banned by the Ministry of Commerce and Industry upon being informed that a domestic producer was producing it.[24] The second period extended from 1962 to 1975 and was characterized by "nominal liberalization". It was ushered in by a new economic policy designed to alleviate a deteriorating balance of payments by encouraging exports. The Government became heavily involved in subsidizing exports and liberalizing trade. The latter was carried out via partial tariffication (agricultural and other products were exempt), replacing quantitative restrictions on imports by tariffs. However, the tariff rates were so high that the policy was judged to have maintained the previous level of protection.[25] Real liberalization did not start until the import substitution policy gave way to reliance on exports as an engine of growth. This third period commenced with the signing of free-trade agreements with the European Community (EC) in 1975. This introduced systematic and gradual tariff reductions and exposed Israeli industries to European competition. The process was reinforced by the signing of a free-trade agreement with the United States in 1985 (the first treaty of its kind ever signed by the United States).[26] The two treaties were primarily for goods and did not cover many services; financial services in particular were not covered at all. The two treaties allowed Israel to continue protecting infant industries for a designated period of time. It is widely believed that vested interests in the public sector and in the Histadrut resisted the gradual removal of protection implied by the two free-trade agreements by using various non-tariff barriers as an alternative protective measure. The lowering of tariff walls with Europe and the United States was not matched by reductions for other countries. On the contrary, "third area" countries, in particular the newly industrialized countries in Asia, were not covered by the tariff reduction and in many cases were subject to tougher protection measures, often in the form of quantity restrictions. This seems to have counteracted the liberalization measures toward Europe and the United States; studies show that the import penetration ratio was not significantly higher in 1990 than it had been in 1977.[27]

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[24]See L. Kahane, "The political economy of Israeli protectionism: an empirical analysis", *Public Choice*, vol. 74 (1992), pp. 339-353.

[25] See N. Kanafani, "Trade relations between Palestine and Israel: free trade area or customs union?" (Ramallah: Palestine Economic Policy Research Institute [MAS], 1996); see also Kahane, op. cit.

[26] The final reductions in tariff rates for the EU was set for January 1989, and 1995 for the United States.

[27] The import penetration ratio of a particular good is defined as the share of imports of total apparent consumption (gross output minus net exports) of that good.

The final stage of liberalization was initiated in 1991 with a comprehensive reform programme designed to remove discrimination against "third area" countries. The programme removed all quantity restrictions against imports from those countries and replaced them with tariffs. The rates were not allowed to be more than 76%, and were scheduled to be reduced linearly over five years to reach a target of 8% for inputs and 12% for final products. Some products considered to be highly vulnerable to competition from Eastern Asia countries–textiles, clothing and building materials–were allowed higher tariffs and a phasing-out period of seven instead of five years (later extended to nine years for textiles). The results of this programme have been mixed. Whereas some goods previously not imported from third world countries began to be imported, others kept the same volume of imports as before, and for some the volume decreased or ceased.[28] Over the last five years, tariff rates were reduced in accordance with the planned sequence, and other liberalization measures were taken as a result of negotiations with the United States and the EU.

As things stand today, Israel's commitment to further reductions in tariff rates is unquestionable, and this is expected to result in relatively low tariffs by the turn of the century. Indeed, the rate is already low. In 1995, GATT Secretariat estimated the tariff on Israeli imports from "third area" countries to be between 0% and 100% with an average of 8.3% in mid-1993.[29] However, the continuing reduction in the tariff rate, profound as it is, should not be taken as an unqualified indication of reduced levels of protection. The experience of the 1970s and 1980s shows clearly that in many instances reducing tariff rates only meant that the method of protection was changed to non-tariff barriers which are very effective in generating both quantity restrictions and hidden import duties. Among these methods are the following three practices.

(a) *Using standards and specifications as a method of protection.* Perhaps the most important of the non-tariff barriers is the use of standards and specifications. In Israel standards and specifications are designed by the Israel Standards Institute (ISI), whose rules and guidelines are reportedly more stringent than many international standards.[30] Furthermore, it is widely believed that the "application of standards in Israel constitutes an elusive barrier concealed behind allegations of inappropriate quality, health hazards, safety considerations and

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[28] See N. Halevi, "International trade", paper presented to the Conference on Sustaining Middle East Peace through Regional Cooperation held in Amsterdam, 17-19 October 1984.

[29] See Kanafani, op. cit., p. 31.

[30] See German-Arab Chamber of Commerce, *Trade for Peace in the New Middle East: Measures to Enhance Trade between Egypt, Israel, Jordan, and the Palestinian Territories* (Cairo: German-Arab Chamber of Commerce, 1995).

others."[31] In many cases standards are tailor-made to the specifications of Israeli production. In others, the requirements of specific packaging and labeling have protected domestic goods from foreign competition.[32] Another discriminatory use of standards is the insistence that importers must satisfy not only the mandatory standards but also the voluntary standards, whereas the local producers are free to choose whether or not to do so. It is also worth noting here that the application of standards were used effectively against Palestinian goods, in particular agricultural and pharmaceutical products.[33] Egyptian and Jordanian businessmen have also reported this as a major obstacle to selling in the Israeli market.[34]

(b) *Discriminatory use of taxes.* Another non-tariff barrier is the application of the purchase tax to imports. Since the tax is levied on the wholesale price of domestic goods, a similar treatment of imports requires marking up the import value (known in Hebrew by the acronym TAMA). In many cases this mark-up is exaggerated and is used as an instrument to protect domestic production. A more direct exploitation of the purchase tax is used to protect textiles, clothing and materials utilized in the construction industry. No purchase tax is levied on their final products in these categories of products on the pretext that tax was paid on the imported value of inputs. Thus the importer of the final product has to pay a higher purchase tax than the domestic producer.

(c) *Anti-dumping and countervailing duties.* Israel has used anti-dumping and countervailing duties to raise the effective cost of imports for certain goods, especially foodstuffs and textiles from Eastern Asia. In the case of foodstuffs, Israel is allowed to do so without violating its free-trade agreements with the EU and the United States since in the two agreements many foodstuffs are considered agricultural rather than industrial products.

III. RESTRUCTURING THE ECONOMY

In addition to being involved with external trade through its commercial policy, the Government of Israel intervenes in the working of the economy through its direct control and ownership of some important economic establishments, its control over the capital market and its extensive and elaborate subsidy schemes. This chapter considers recent attempts at reducing government

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[31] Ibid.

[32] A striking example of this is American instant coffee, which was excluded from the Israeli market because the packages expressed weight in rounded figures in grams rather than in ounces. See Halevi, op. cit., p. 9.

[33] See UNCTAD, "Main features of domestic and external merchandise trade of the West Bank and Gaza Strip" (UNCTAD/ECDC/SEU/5, 21 October 1994).

[34] German-Arab Chamber of Commerce, *Trade for Peace in the New Middle East.*

involvement in these three areas, under the headings of privatization, deregulation of the capital market, and subsidies.

A. PRIVATIZATION

Privatization has been the official policy of consecutive Israeli administrations since 1985. The task of privatizing involves three separate but interrelated policies. The first is the sale of Government-owned companies–which comprise 12 of the largest 100 industrial companies and which accounted for 22% of sales, 21% of employment and 33% of exports in 1985. The second is modernization of Histadrut-owned establishments, which accounted for 35 of the largest 100 industrial companies, and which represented 29% of sales, 29% in employment, and 22% of exports in 1985.[35] The third is privatization of the five largest banks that dominate the financial sector and whose control passed to the Government after it rescued them from collapse in the banking crisis of October 1983.

The privatization campaign to sell the Government-owned companies and government shares in other companies was launched in 1986. It was expected that the Government-owned shares in some of the largest industrial establishments such as Israeli Chemical Group (ICG), the airline carrier El-Al and the Israel Electric Corporation would be sold. However, privatization on this scale did not occur. Some 68 smaller companies and holdings in another 12 were sold, but sales of large establishments were inhibited by "the entrenched tradition of State ownership in industry, which had for so long been a mainstay of Zionist ideals and which would not easily be abandoned."[36] Ministers responsible for large companies were reluctant to help the sales effort, as it represented a loss of their political patronage, and the Knesset Finance Committee was reluctant to approve sales because of strategic considerations. While there were different obstacles for each major case of privatization, the story of the failure to privatize Israel Chemical Limited (ICL) over the last six years indicates the general problems facing privatization. A sale of the conglomerate was scheduled for completion by April 1990, but it was vetoed by the Knesset Finance Committee on the ground that "the State should not relinquish control of ICL because of its role as exploiter of Israel's chief natural resource, potash, and its importance to the economy as a whole."[37] Later the Knesset approved selling 49% of the conglomerate, but the proposal failed because foreign investors were unhappy

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[35] See Y. Aharoni, *The Israeli Economy: Dreams and Reality* (London: Routledge, 1991), p. 176.

[36] See T. Niblock and E. Murphy, *Economic and Political Liberalization in the Middle East* (London: British Academic Press, 1993), p. 247.

[37] Ibid.

with the terms of the arrangement. In 1992, the United States Government voiced a criticism of the Israeli Government's handling of the economy, in particular, its slow pace of privatization (the criticism was made in conjunction with Israel's request for $10 billion in loan guarantees). Subsequently, the Knesset rescinded its requirement that the State retain 51% of equity, reducing it to 28%. However, the 28% entitled the State to wide-ranging veto power enshrined in what is known as 'golden share' status. Sales were scheduled to be carried out in several stages. The first consisted of public flotation through the Tel Aviv Stock Exchange (TASE) of 20% to 25% of equity, with a smaller percentage to be sold to employees. In the second stage, one or more foreign strategic investors was to be sold 10% to 15% and the sale needed the approval of the Knesset Finance Committee, whose conception of *strategic investor* means investors with "pro-Zionist credentials."[38] However, no sales have taken place since the articulation of this plan in 1992; rather, time was spent arguing over and debating how, when and to whom to sell ICL. It should be noted here that the concept of 'golden shares' is not peculiar to ICL. It is in fact attached to many privatization plans for large State establishments and has drawn much criticism from analysts who see its wide-ranging veto powers as a menace to a genuine privatization plan because it effectively maintains government control.

After the disastrous economic performance of Histadrut's companies in the 1980s, reflecting both inefficient management and an inability to adjust to changing conditions, a plan was adopted for restructuring in the early 1990s. This called for Hevrat Ha'ovdim (the main holding company controlling all of Histadrut's business concerns) to establish a genuine joint stock company that would provide professional management to all Histadrut companies. Its major task is to reorganize all units on business principles that emphasize profitability, and it has the authority to close or sell unprofitable units. Some restructuring and downsizing in some Histadrut establishments followed. For instance, Koor, the largest industrial conglomerate in Israel and the flagship of the Histadrut business empire, reduced its work force from 32,000 in 1988 to 16,000 in 1992.[39]

Efforts at privatization and deregulation have also been introduced in the services sector with varying degrees of success. The following gives a very brief summary of some of the most important fields.

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[38] For good accounts of this aspect, see *Middle East* (March 1990).

[39] It is worth mentioning here that at the end of 1988 Koor was on the verge of being liquidated by a New York bank. Strong support from both the Government and banks in Israel saved the company.

(a) *Energy provision*

The energy sector in Israel is dominated by monopolies and near monopolies. Fuel distribution is completely controlled by three companies and electricity by one–Israel Electrical Corporation (IEC). These companies have been successful in blocking all attempts at deregulation. In 1996, IEC's monopoly power was extended for at least 10 more years. The only change in the sector is new legislation allowing private companies to produce up to 20% of the country's demand for electricity, but only if the electricity is marketed through IEC.

(b) *Telecommunications*

All telecommunications systems were formerly controlled by the Government-owned monopoly Bezeq. In the 1990s, however, regulatory authorities allowed competition; there are now two private competitors, and there are plans for two more. The Government sold 25% of its shares in Bezeq, and further sales are planned as well. Regional private radio stations were allowed in 1995, and a private TV station started to compete with the public station in 1994.

(c) *Education and health*

As a result of a rapidly increasing population owing to large-scale immigration, and a shift toward more technically-oriented jobs, higher education in Israel has extended beyond traditional universities and academic institutions. Trade colleges and an open university have witnessed increasing enrolment. This is a result mainly of private efforts, reflecting growing fiscal constraints on the public system. According to one estimate, the public share of education services stood at 73% in the mid-1990s, compared with 80% a decade earlier.[40] Similarly, fiscal constraints, combined with an increase in demand and rising costs, have been responsible for increasing privatization in the health sector. It is estimated that households financed about 52% in health expenditures in 1994, compared with 33% a decade earlier.[41] Comprehensive plans of the Government, however, which aimed at reforming the hospital system through decentralization and privatization of hospitals, have not been successful, owing to strong political opposition.

Notwithstanding the importance of all these efforts, it is widely believed that reforming the banking system is central to the future of the entire restructuring programme. This is due to the fact that banks in Israel dominate the capital market and have substantial holdings in non-banking subsidiaries and

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[40] See Economist Intelligence Unit, *Country Profile – Israel* (1996).

[41] Ibid.

affiliates. The financial system consists of 24 commercial banks, 1 investment bank, 9 mortgage banks and various other specialized institutions. Concentration in the sector is so high that 90% of all financial activities are conducted by the five largest groups: Lumi, HaPoalim, Israel Discount, Mizrahi and First International. Indeed, the largest three groups have a market share of some two thirds to three quarters in most major areas of activity. The banking industry is structured on the central European model of 'universal banking'. Accordingly, banks provide a wide range of financial services in addition to the normal services of deposit-taking, check-clearing, loans and foreign exchange operations, including acting as an investment bank, extending long-term financing to firms or taking an equity position in firms, and providing brokerage and underwriting services, as well as operating mutual and provident funds. As a consequence, the five largest banking groups have built up extensive non-financial holdings. Bank HaPoalim, for instance, owns 45% of the Clal Industries conglomerate (whose business ranges from hi-tech to tourism) and over 70% of Delk (one of the largest energy companies), as well as a controlling stake in Dinr, a large real estate company.[42] Following the collapse of their share prices in October 1983, the Government stepped in, in an arrangement that cost $8 billion from 1985 through 1991. In effect this has passed ownership and control of the four largest banks to the Government. Even though during the last decade the Government sold a small proportion of the equity in HaPoalim, Lumi and Israel Discount, it still has complete control over them; an Israeli investor bought a controlling share in Bank Mizrahi, making it the first one of the largest five to be privatized.

Observers believe that a sale of one of the three largest groups would represent a watershed in the development of the Israeli banking industry, especially if the buyers included a major foreign financial institution.[43] Such a sale, however, has been frustrated many times by various factors, the most important of which is the general uncertainty surrounding the future of the banking sector. To a great extent, this stems from the lack of any clear governmental stand on the desirable structure and scope of the banking industry. Issues related to the future role of the State, the range of banking activities and the extent of foreign ownership have not been settled. A move toward clarifying some of these issues was taken by the Government in May 1993, when it adopted a series of proposals on the structure of banking; however, the plan was widely criticized as a half-hearted scheme presenting a compromise between the Bank of Israel (the central bank) and the Ministry of Finance. The former pushed for a radical programme that included a clear separation between the banks and mutual and provident funds, as well as a limit on bank holdings in non-banking concerns. The latter opposed these measures and defended the status quo. Thus,

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[42] Economist Intelligence Unit, *Country Profile – Israel* (1996).

[43] Ibid.

compromise did not go far enough in remedying the major problems related to the unusually high degree of concentration of the banks and their involvement in non-banking activities. The plan limited the holding of each bank to 25% of the equity of any non-banking concern. It was this limitation on banking activities that was cited by the Claridge-Arison Consortium as the reason for the withdrawal in August 1996 of its tender for a significant share in the Bank HaPoalim. Israeli papers described the withdrawal as the 'HaPoalim fiasco', which left the entire bank privatization plan in chaos.

It should be noted here that part of the problem of selling bank shares is that they are not very attractive to investors, since holding a majority of shares in any given bank does not carry with it a majority of voting rights, which are given to 'founding shares', held by the original owners of the banks. For instance, the original owner of Bank Lumi, the Jewish Colonial Trust, owns only 2% of the ordinary shares of the bank, but 75% of the voting share. Similarly, Hevrat Ha'ovdim, the Histadrut holding company, controls 50% of Bank HaPoalim's voting shares, and the Recati family has the largest voting share in the Israeli Discount Bank.[44] It should also be mentioned that efforts at privatization in 1994/95 suffered from the crises in the stock market (TASE), which had led the Government to cancel some of its public flotation.

The return of the Likud party to power in the summer of 1996 was accompanied by a new governmental emphasis on privatization and deregulation. The Government promised to push for an expansion of the privatization of governmental corporations and set a time limit for implementation. It also promised an increase in competition in the energy and telecommunications sector.

B. Deregulation of the Capital Market

After the banking crisis of October 1993, a Commission of Inquiry was created to investigate the banking sector. Its report includes the following statement:

> The central feature characterizing Israel's capital market for as long as Israel has existed is the Government's domination of the capital market. The Government's involvement transcends anything that is known in politically free countries. The main expression of this involvement is the fact that most of the finances that accumulate in the various savings schemes...are channeled to the State's budget or allocated by it. The Government sets, for every financial instrument, its term, rate of interest

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[44] See Niblock and Murphy, op. cit., p. 242.

and tax regulations. Since the Government is the chief mobilizer of savings, it is also the main allocator of credit. The lion's share of long-and medium-term credit to households (mortgage loans) and the business sector (finance of investment in industry, agriculture, tourism, etc.) is allocated through its budget or by other means.[45]

Thus, the Government in effect plays the role as intermediary in the capital market. It absorbs the vast majority of private saving and allocates it among public and private investment projects. The former task is performed by imposing very stringent restrictions on other intermediaries. These include the requirement that institutional savers allocate the majority of their funds to buying governmental bonds and the requirement that no private firm can issue bonds or shares of stock without the approval of the Minister of Finance. During the 1970s and 1980s, private firms were not able to compete with the subsidized indexed government bonds. At those times of high and increasing inflation, no private firm could issue an indexed bond, and thus the whole debt market was dominated by the Government.

The Government's intermediary role, combined with its reign over the banking sector and foreign exchange market, gives it virtual control over the entire capital market. The first partial attempt at deregulating the market was carried out in October 1977 by the first Likud Government which announced the elimination of almost all currency controls and opened the economy to free capital movement. The experiment had a destabilizing effect on the economy, as it contributed to an acceleration of inflation and a worsening of the current account deficit. It was subsequently perceived as unsustainable and was abandoned. The main reason for its failure is widely believed to be the fact that it was executed without the necessary supportive fiscal measures.[46] In fact, the experiment was accompanied by a huge increase in government expenditure to finance Likud's expansion of settlements in the West Bank. This episode–and the subsequent failure of Likud's economic policy during its two first administrations (1977-1984)–has pointed out a division in the Israeli political economy. For Labour, economic reform is accepted as a practical necessity, and it proposes to proceed gradually, maintaining harmony with a gradual Zionist expansion and without alienating any important constituency. For Likud, economic reform is embraced as a matter of ideology, and the party is always ready to sacrifice it so as to satisfy the higher ideological demand of swift Zionist expansion.

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[45] See Plessner, op. cit., p. 37.

[46] See O. Sussman, "Financial liberalization: the Israeli experience", *Oxford Economic Papers*, vol. 44 (1992), pp. 387-402.

Since 1986, in particular in 1990, measures have been introduced by the Government to liberalize and deregulate the capital market. They include a major relaxation of the regulations on foreign currency transactions, the ending of multiple exchange rate arrangements, a reduction in the subsidization of mortgages, forcing the disinvestment of banking groups' major non-financial holdings, and the most important measure of all: substantial relaxation of the regulations requiring institutional savers to hold the majority of their portfolio in government bonds. All this has resulted in the introduction of a certain degree of competition to the market, allowing many companies to issue bonds and equity and permitting institutional savers to diversify into equity. In the last three years some Histadrut companies have started public flotations of their shares. The cumulative effect of these processes has been to make the market broader, deeper and more sophisticated. However, the move toward liberalizing the capital market is not irreversible, in particular when it constrains Zionist expansion. In recent years, under the pressure of absorbing the tremendous immigration wave from the former Soviet Union, the Government has resumed heavy subsidizing of mortgages, offering loans to immigrants (and young couples) at lower interest rates and more generous terms. This has effectively wiped out most of the liberalization measures introduced into the mortgage market in 1990.

Despite the substantial changes in the capital market, the market is still not free. Important areas of the financial system continue to be closed to competition. Badly needed financial instruments such as commercial paper for short-term corporate borrowing and secondary mortgage market do not exist. There are also limitations on capital flows, in particular with regard to institutional savers, who cannot invest more than 2% of their resources in foreign markets (10% in mutual funds). More important, little has been accomplished thus far in the way of reducing the bank's dominant role in the capital market.

C. SUBSIDIES

Since the establishment of Israel, governmental subsidization has played a leading role in directing resource allocation. Over the years, the Government has combined domestic resources acquired through its dominance of the capital market with external resources received from official and private sources, to finance a large part of national capital accumulation. The law for the encouragement of capital investment was issued in 1950 and has been revised many times since, but the three objectives the Government has sought to achieve have remained unchanged: development of the productive capacity of the national economy, improvement of the balance of payments, and the absorption of immigrants. Allocation of subsidies to the first objective is achieved through identifying 'developmental zones', ranked according to government preference. In general, a high ranking is assigned to the least developed areas of the country. The Negev, for instance, is considered as high priority, Zone A. However, Jerusalem is also treated as Zone A for reasons of Zionist expansion. In the 1970s and 1980s some studies estimated that an investor in a given project classified as

being in Zone A would have needed to provide only 48% of the total capital invested over a 10-year period. The rest would be supplied by the Government in the form of grants, subsidized loans and tax breaks.[47] In the early 1990s, grants available to projects in Zone A amounted to 38% of capital cost, reduced in 1995 to 34%. The Likud Government announced its intention to carry out a substantial reduction in subsidization such that grants for Zone A will drop from 34% to 20%, and those for Zone B from 17% to 10%.[48] Export subsidies have been the main instrument used to improve the balance of payments. The subsidy is calculated according to the value added in exports: foreign exchange earned less foreign exchange spent on imported inputs required for the production process.[49] The rates have changed over the years, and there is a general feeling that they have increased. To understand their importance, it is sufficient to note that for a five-year period, 1980 to 1984, export subsidies amounted to 7.8% of the unsubsidized value of exports, which amounted to approximately 32.5% of the value of capital invested in the production.[50]

The absorption of new immigrants has always received priority in the government subsidy programme. New immigrants are offered grants, loans at subsidized rates, tax relief and a host of other supplements to their income. In this regard, the subsidization of settlement in the West Bank, the Gaza Strip and the Golan Heights represents major expenditures in the budget. It is estimated that by the end of 1995, Israel had built 194 settlements in the West Bank and Gaza Strip–148 in the West Bank, 28 in Jerusalem (13 in the annexed part of the city) and 18 in the Gaza Strip. Building the infrastructure for these settlements is estimated to have cost $14 billion by the late 1980s. Incentives are offered to encourage settlement in the occupied territories, including better mortgage rates and terms than otherwise available, tax relief, grants to encourage new industrial investments, and advanced transport and settlement infrastructure.[51]

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[47] See Plessner, op. cit., p. 128.

[48] See Economist Intelligence Unit, *Country Profile – Israel* (1995, 1996).

[49] The rates were set in 1966 as follows: Goods with value added content less than 25% received a subsidy of 1% of that value; at 25% to 45% the subsidy was 3.5%; at 46 to 65% value added, the subsidy was 6% of the export value; and for goods whose value added content exceeded 65%, the subsidy constituted 8.5% of the export value. See Plessner, op. cit., p. 124.

[50] Assuming that the value added in exports is 60% of the exported value, then the subsidy constitutes 13% of the value added (0.078/0.60 = 0.13), and assuming that labour's share of the value added is 60%, then the subsidy constitutes 32.5% of the share of capital (0.13/0.4 = 0.325). See Plessner, op. cit., p. 131.

[51] See UNCTAD, TD/1305 (9 August 1991); TD/B/40(1)/8 (25 July 1993); TD/B/41(1)/3 (7 July 1994); and TD/B/42(1)/8 (3 July 1995).

Another important area for subsidies is agriculture. Israel has one of the most comprehensive and sophisticated agricultural support systems in the world. The system includes direct subsidies, cheap water, marketing boards, a comprehensive insurance scheme and marketing research facilities.[52] These elements function to increase the profitability of Israeli farmers, smooth the fluctuations in their production, prices, and incomes, spread farmers' risks, help them develop new products, and furnish accessibility to new markets.[53] Since the mid-1980s, major reductions have been made in direct subsidies, but indirect subsidies–in particular cheap water and high domestic prices reflecting controlled market access–continue in place. In recent years both kibbutzim and moshavism have suffered heavy losses on their agriculture operations. This is partly due to their failure to adapt to changes brought about by the economic stabilization plan of 1985 and partly to competition in the European market from Spain, Morocco and other suppliers of fresh fruit, vegetable and fresh flowers. The failure has led the kibbutz and moshav sector to borrow heavily from the banks, with accumulated debt amounting to $4 billion in 1994. To stem further deterioration, the Government introduced a system of minimum prices for agricultural products aimed at stabilizing farmers' income in 1994.

Yet another area of subsidization that has become more important in recent years is related to the subsidies offered as an incentive for foreign direct investment (FDI). The improvement in the security and risk conditions brought about by the implementation of the peace process, in addition to the collapse of the Arab economic boycott, has led many foreign companies to build factories in priority areas (zone A) to take advantage of the large subsidies available (38% of capital expenditure, 34% starting in 1996). Intel is building a plant in the Negev at a cost of $1.8 billion and is expected to receive $600 million in subsidies over the next ten years. Motorola is negotiating to build a $1 billion plant and is demanding a subsidy calculated according to the same terms as Intel.[54]

IV. THE ISRAELI ECONOMY IN THE NEW MIDDLE EAST: A HUB-AND-SPOKE SYSTEM?

The foregoing analysis underscores two important aspects of the ongoing process of restructuring the Israeli economy. First, it demonstrates that it is not very instructive to understand the process entirely in the context of a desire to

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[52] See M. el-Jafari, "Non-tariff barriers: the case of the West Bank and Gaza Strip Agriculture exports", *Journal of World Trade*, vol. 25, No. 3 (1991), pp. 15-31.

[53] See UNCTAD, "Prospects for sustained development of the Palestinian economy: strategies and policies for reconstruction and development" (UNCTAD/ECDC/SEU/12), 21 August 1996.

[54] See the *Economist Intelligence Unit*, 4th quarter, 1996.

integrate the Israeli economy fully into world markets in accordance with recent worldwide trends emphasizing liberalization and globalization. Undoubtedly, the general movement has added a sense of urgency to the process, but it did not create it. In fact, the process started in the early 1970s, reflecting the change in the Israeli social democratic system in which *capital* has been gradually replacing *labour* as the dominant partner in the corporate exchange arrangement. Secondly, the process is multifaceted, difficult and slow. In addition to its encroaching on the power of established political centres, it is also constrained by ideological considerations. Events in the last two and a half decades have demonstrated clearly that the newly unfolding political economic arrangement emphasizes the role of the market and downplays that of the Government only as long as the new structure advances the cause of Zionist expansion. After almost half a century of statehood, Zionism is still the only source of legitimacy for the whole political economic system.

These two aspects together provide the context within which the restructuring of the Israeli economy can be best appreciated. It is a complex and slow process moving in the direction of reducing the economic role of the Government and solidifying that of capital but ensuring at the same time that the emerging freer market can be relied upon to advance the goals of Zionist expansion. Attracting immigrants and ensuring their absorption into the market requires a major increase in the profitability of that market and this in return requires an increase in the size of the market and a recognition of the full potential of economies of scale. In this light, we can appreciate the advantages Israel would derive from normalizing economic relations with Arab countries. Two elements are readily identified:

- Advanced large-scale industries in Israel would out-compete inefficient small-scale industries in its Arab neighbours, in particular the West Bank and Gaza Strip and Jordan. This would confine these latter economies to producing low-skilled goods, and would mean that a sizeable portion of their labour force would either commute to work in Israel or be employed in domestic establishments involved in subcontracting arrangements with Israeli industries.[55]

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[55] The experience of the West Bank and Gaza Strip in subcontracting arrangements with Israeli firms over the last 30 years shows very clearly that the arrangement is basically an indirect trade in labour services, similar to the direct employment of Palestinian daily workers in Israel. The arrangement involves neither a commitment of Israeli capital nor a transfer of technology. Israeli firms bring semi-finished goods to Palestinian firms and contract for processing according to certain specifications. See UNCTAD, "Main features of domestic and external merchandise trade of the West Bank and Gaza Strip" (UNCTAD/ECDC/SEU/5, 21 October 1994).

- Thus far, Israel has been able to tailor its relation with each Arab country separately. If the present trend continues, Israel will end up with trade agreements with each Arab country, while these countries will have no comparable agreements with each other. Such an arrangement would give rise to a trade pattern resembling the "hub-and-spokes" of airline operations. Israel, the hub, would likely attract most of the foreign investment, as it would provide preferential access to all of the "spoke" Arab markets. Its hub position would be further solidified by the fact that it is the only country in the world with free-trade agreements with both the United States and the European Union. Furthermore, it is the only country in the region that is "scientifically-connected", in the sense that its universities and research centres have reached a level of sophistication allowing them to be linked with scientific and research centres in the most advanced countries. This confers on Israel great advantages, with its status of regional centre dominating the new growth industries, including microelectronics, biotechnology, and robotics and machine tools, as well as computers and software, and the new information-based service industries.

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TABLE 1. RESOURCE GAP

Percentage of GDP	1950	1960	1965	1970	1975	1980	1985	1990	1995
Private consumption	74.1	70.4	68.1	61.2	60.3	61.5	58.2	61.8	61.7
Government consumption	18.8	18.7	20.7	36.3	44.2	36.1	36.6	30.2	29.2
Public saving	7.1	10.7	11.2	2.5	-4.5	2.4	5.2	8.0	9.1
Investment	31.0	27.5	30.0	29.0	32.1	23.6	18.5	18.7	24.9
Resource gap	23.4	16.8	18.8	26.5	36.6	21.2	11.3	16.7	15.8

Source: For the years 1950-1980, Y. Aharoni, *The Israeli Economy: Dreams and Reality* (London: Routledge, 1991), for the years 1985-1995, calculated from IMF, *International Financial Statistics.*

TABLE 2. CURRENT ACCOUNT (1985-1995)
(Millions of current dollars)

	1985	1990	1995
1. Deficit in goods and services	-3,882	-5,086	-13,293
2. Unilateral transfer	4,997	5,790	7,263
- Private	757	1,820	3,380
- Public	4,240	3,970	3,883
3. Current account balance	1,115	704	-3874

Source: For the years 1985-1990, P. Rivlin, *The Israeli Economy* (Oxford: Westview Press, 1992). For the year 1995, IMF, *International Financial Statistics*.

ECONOMIC EXCHANGE UNDER ASYMMETRICAL OPTIONS: THE CHALLENGE OF PEACE WITH ISRAEL

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Introduction

While Israel experienced a major economic boom in the early 1990s, with real GDP growth topping 6% for most of the years between 1990 and 1995, the Arab economies in general experienced negative or slow growth rates. Today, the per capita GDP of Israel is over $13,619, which is larger than the combined per capita incomes of all its neighbouring Arab countries.

It is perhaps an understatement to suggest that the field between the Arabs and the Israelis is not level. This is nowhere more evident than in the economic domain. These asymmetries are also reflected in the terms and conditions of the recent political and economic agreements concluded between the Israelis and Palestinians. These agreements typically reflect the vertical organization of power and options in existence in the region and the world. It would be difficult to believe that the asymmetrical economic conditions that define current Israeli and Palestinian economic positions would not influence the outcome of any liberalization of trade and other economic exchanges between them.

This paper begins with a detailed analysis of Arab economic failures, Israeli economic success and the reasons that the two economies have such a markedly different record of economic performance. The paper then proceeds to consider "old" economic theories about the possible effects of economic exchange between poor and more advanced economies and more recent developments in economic thinking on these issues. We will also consider in the process what to expect from peace and normalization of economic relations with Israel and will end up with an Arab economic strategy to deal with the economic challenges posed by Israel.

I. THE ARAB ECONOMIC MALAISE

Collectively the Middle East and North Africa grew at less than one half of one per cent per annum between 1980 and 1990, whereas the third world grew at an average rate of 3.4% per year during the same period (see figure 1).[1]

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[1] Figures 1 through 10 were adopted from John Page, "Economic prospects and the role of regional development finance institutions," *Regional Economic Development in the Middle East: Opportunities and*

Severe and entrenched structural weaknesses in the Arab economy hamper its ability to adjust to global change, meet the challenges of "peace" and protect itself from adverse changes in the international economic environment. Over the 1970s and 1980s, Arab economic "success" masked many of these structural problems. They are now becoming more visible and will be detrimental for future economic performance.

The most fundamental problem afflicting the Arab economy is its heavy (if not exclusive) direct and/or indirect dependence on the rent from natural resources (oil) (see figure 2). This dependence has propagated an "Arab disease" along similar lines but with more profound manifestations than the "Dutch disease" that afflicted Holland in the wake of rising natural gas prices at the end of the Second World War.

The "Arab disease" manifests itself in a number of dysfunctions and types of malaise that are increasingly constraining the Arab economies' capacity to grow and prosper.

First, increased oil revenues denominated in US dollars raised the exchange values of most currencies in the region. The rapid appreciation of domestic currencies undermined the capacity of the Arabs to export manufacturing products and made them more dependent on imported food and products (see figures 5, 6 and 7).

Second, oil incomes buoyed domestic demand without raising domestic supply. The cost of production in the non-traded goods sectors rapidly increased, compromising in the process the capacity of local industry and agriculture to compete in even the domestic markets against cheaper imports. Domestic markets were flooded with cheap and large volumes of imports that ultimately compromised the balance of payments of even the richest States (see figure 6).

Third, large and massive infusions of petrodollars into the local economies engendered unsustainably high consumption patterns that were almost totally divorced from high production. The combination of high demand and low production raised domestic prices and increased the dependence on imports. Inflation redistributed incomes away from those on fixed incomes and distorted local investment. Real estate speculation absorbed the largest share of private investment (see figures 2 and 3).

Fourth, the huge rent on oil also encouraged public investment in large projects that often were unnecessary and unproductive and ultimately straddled the domestic economy with large maintenance costs that were not paid for from increased production or productivity (see figure 2).

Risk (Center for Policy Analysis on Palestine, December 1995).

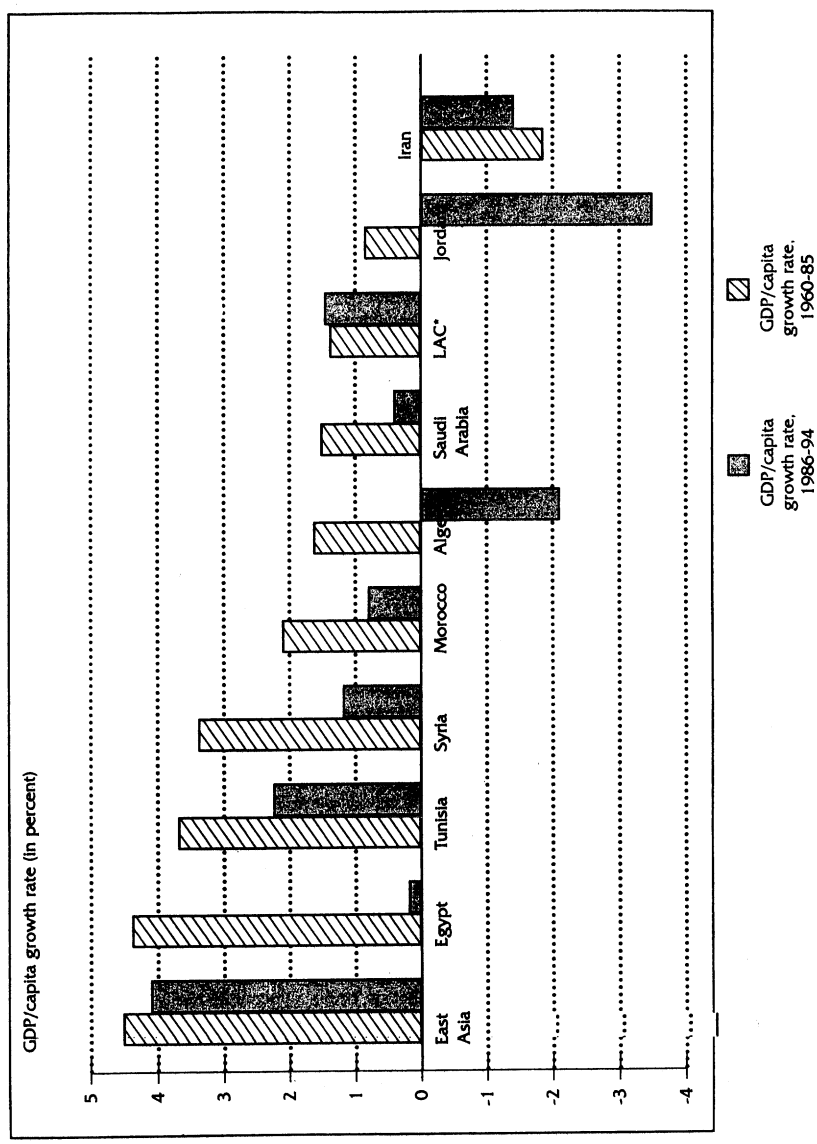
Fifth, the oil rent was skimmed initially by Governments, with two serious consequences. Government bureaucracies were bloated with overlapping rings of rent-seekers making little or no contribution to production. Perhaps more serious was the reversal of the traditional relationship between the rulers and the ruled. Oil rent secured a large and continuous source of income to the ruler. It also insulated the ruler from the ruled. Rulers do not have to depend on the ruled for their sustenance. Without taxation there is no representation. The insulation of the ruler from dependence on and accountability to the ruled weakened democratic forces and shielded Arab rulers from the strong trends towards democracy observed in other parts of the world. In fact, a perverse relationship was established between the ruled and rulers as a result of oil rents. The ruled began to depend on the rulers for their income and jobs. When the rulers spend, the domestic economies expand and prosper, and when they tighten the strings on the public purse, domestic economies suffocate and contract. There is a direct relationship between democracy and economic development: democracy mobilizes people and talents and allows for rational public spending and scrutiny. In the absence of democracy, it is not possible to instil public discipline on spending, and people become alienated from their work and from the economy.

Sixth, rent-seeking weakens the economy by divorcing income from production and productivity. It exposes the domestic economies to the broad fluctuations of the world market for oil, over which the Arabs have had little control.

While it may be convenient to argue that the Arab economic difficulties of the 1980s can be explained completely by falling oil prices, the truth lies elsewhere. The fact, however, that oil prices can affect so adversely all economic indicators of Arab performance is itself revealing. In this respect, the heavy dependence on oil rents is symptomatic of general economic failure.

Seventh, the Arab economy today remains almost as undiversified as it was in the 1970s. Oil exports are still the exclusive economic engine of the region. (Rentierism is a widespread phenomenon not restricted to the oil-rich countries.) There is now a "secondary dependence" on oil revenues throughout the region. Exports of manufactured renewable commodities and services contribute very modestly to the external sources of finance of all Arab countries (see figure 5).

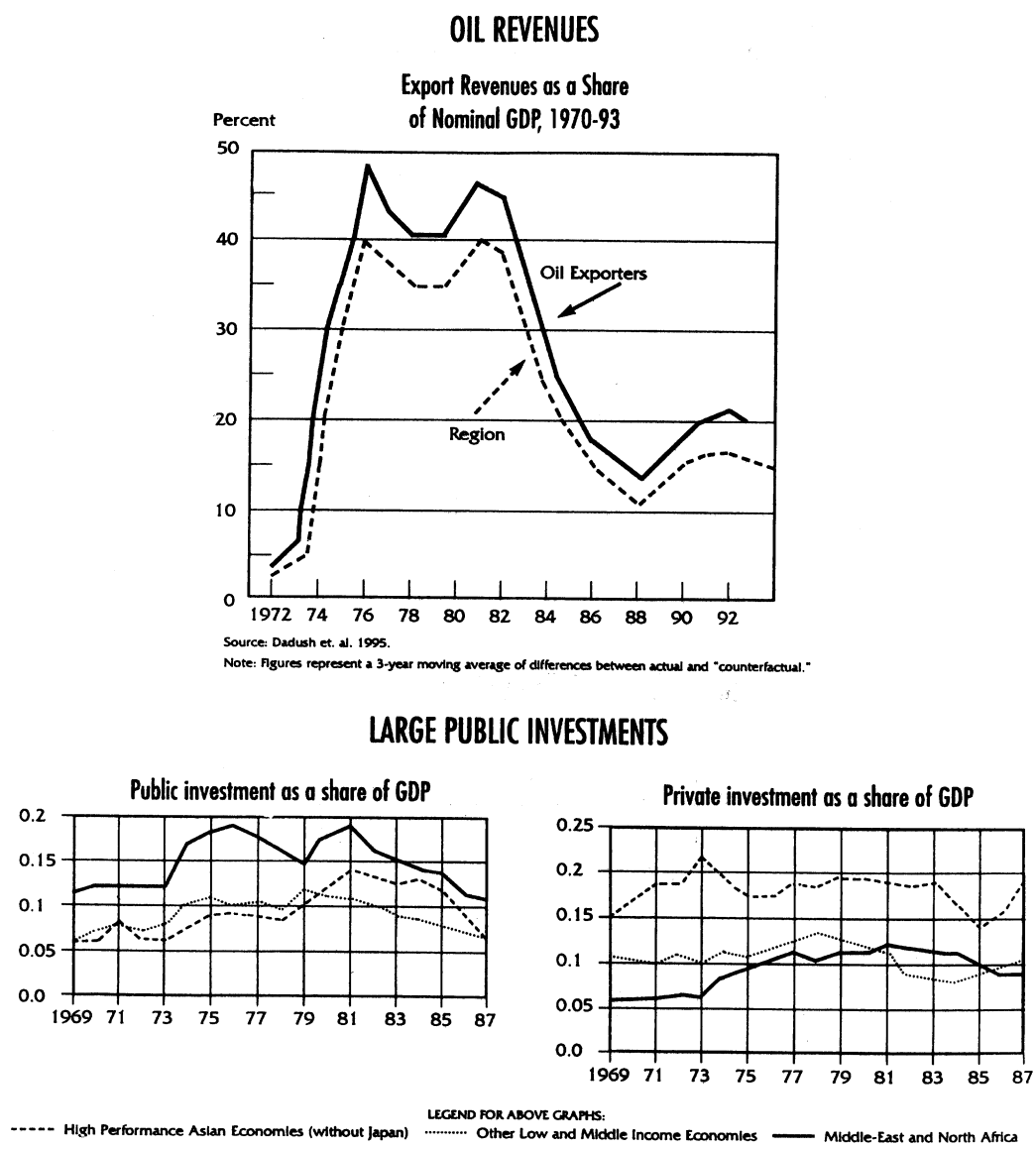
Figure 1. Comparative per capita growth, 1960-1994



Source: World Bank data; adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

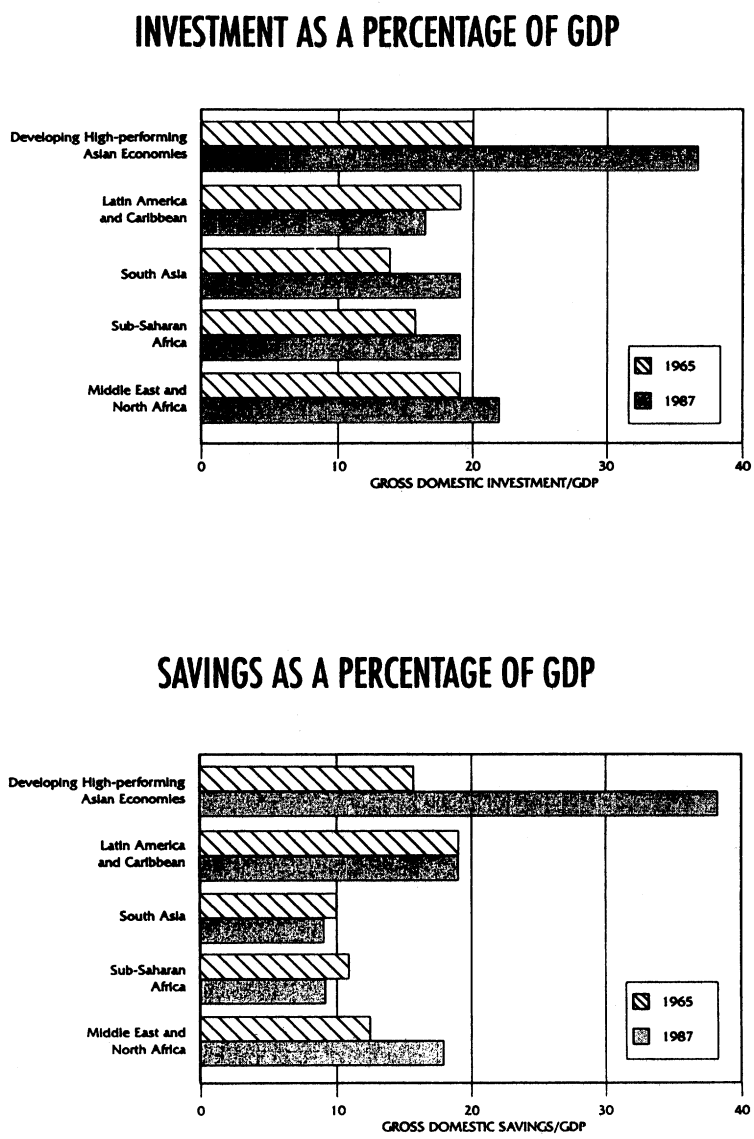
* Latin America and Caribbean.

Figure 2. Past growth catalysts



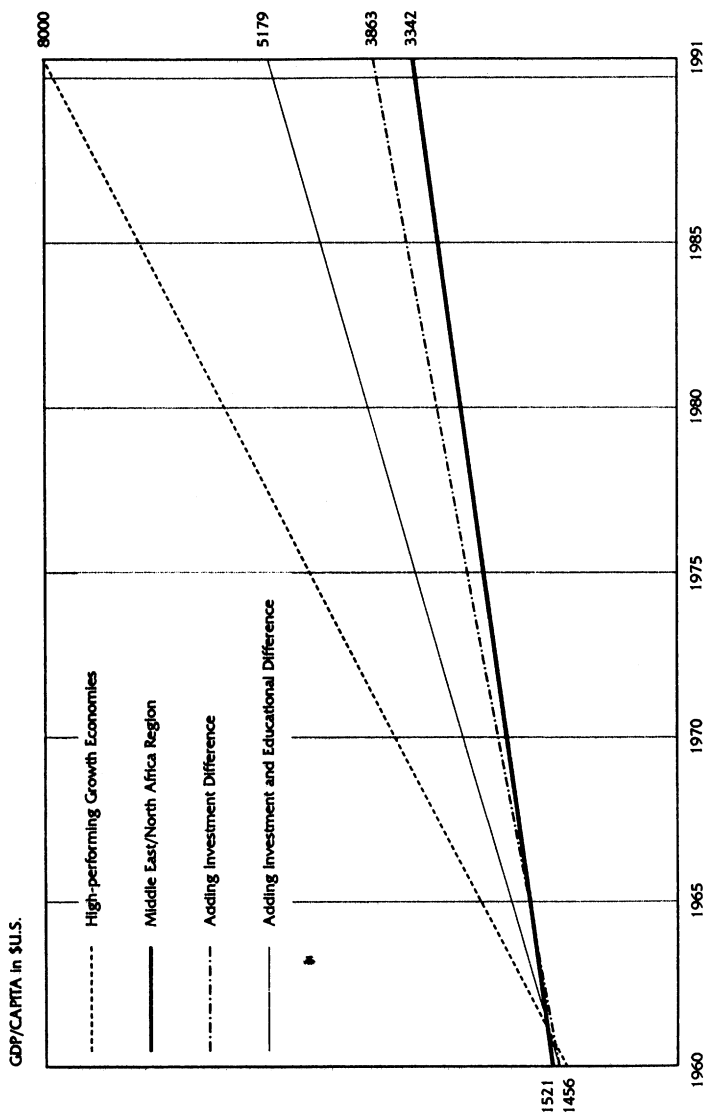
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 3. Investment and savings as a percentage of GDP



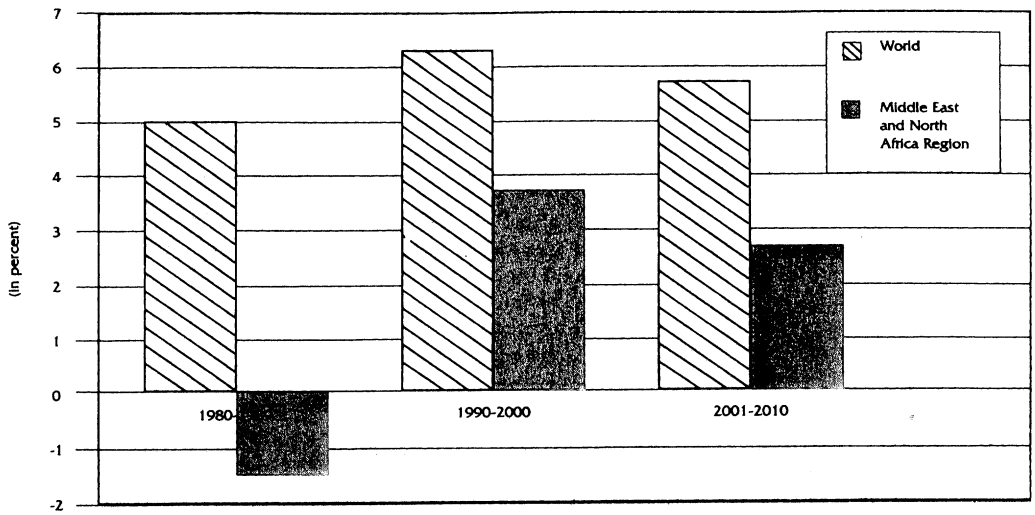
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 4. Differential in per capital income growth



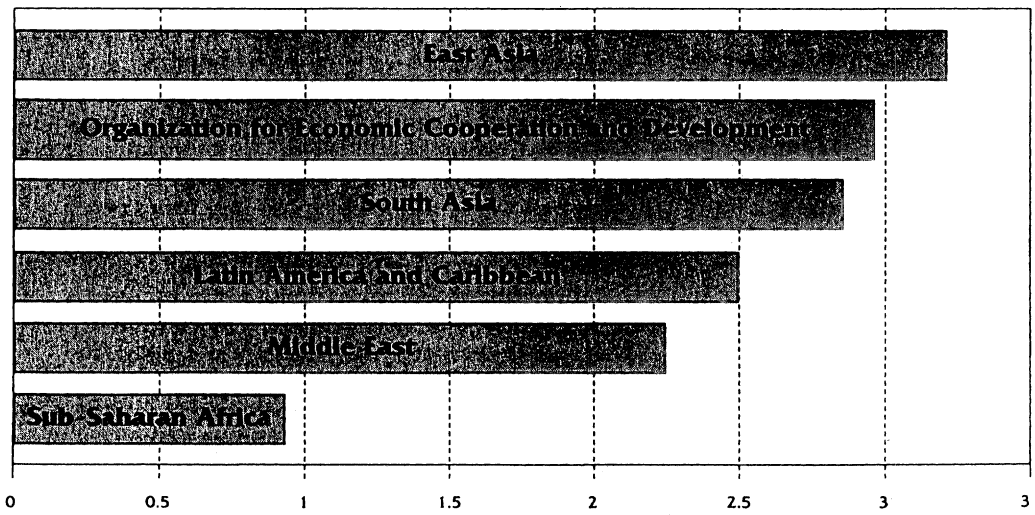
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 5. Trade growth by period



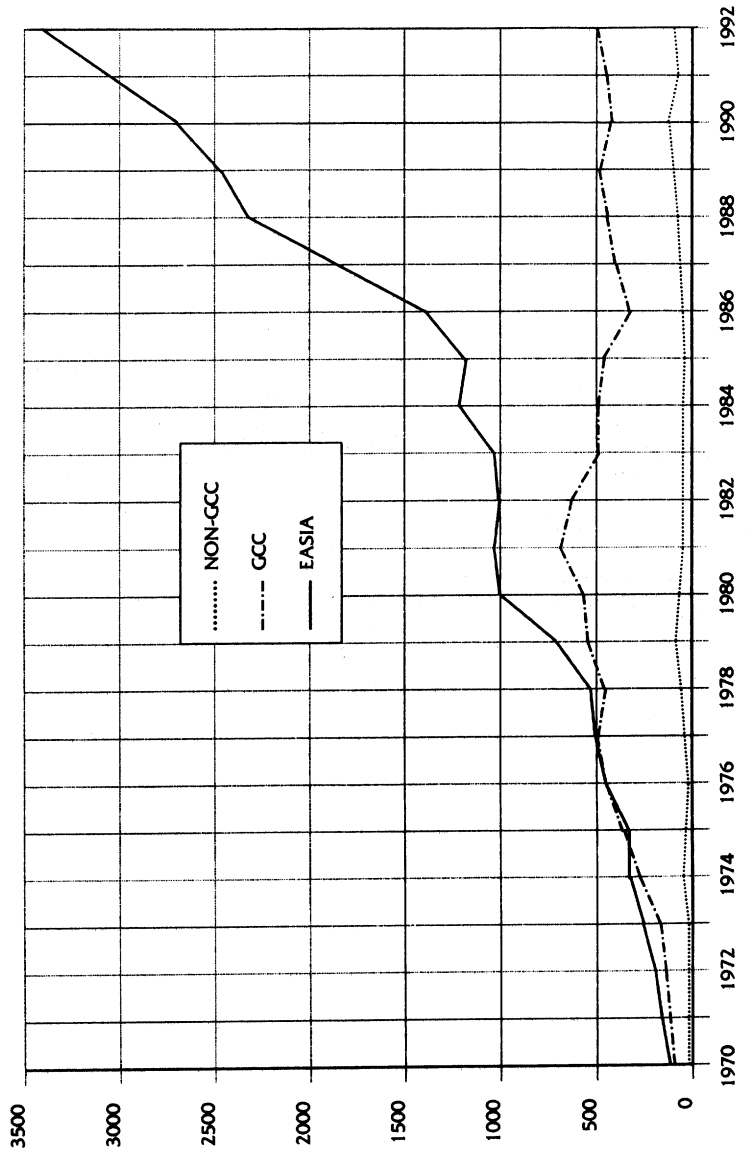
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 6. Index of prices relative to world prices



Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 7. Per capita manufacturing exports: MENA (Gulf Cooperation Council [GCC]) and non-GCC), and East Asia



Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Non-oil producing Arab countries have exported their producers to the Gulf and have enjoyed the convenience of remittances. As such, these economies have not had to bother with developing domestic exports. Manufacturing activity outside oil is limited, disarticulated, traditional, inward-looking, and technologically dependent on outside sources. Little or no technological capabilities are developed within the region. There is a strong preference for turnkey projects. Expenditures on research and development are modest if not totally inconspicuous. Regional cooperation is a political slogan without any real economic transactions: even today, exclusive of oil, Arab regional trade is only 4% of the Arab countries' total international trade; with oil it is less than 9%. Most Arab countries are linking up with non-Arab economic centres, with little or no concern for their Arab neighbours. External indebtedness is massive and is beginning to sap the energies of the region. The Arab region is still gambling on "sunset" industries and old Fordist and smokestack manufacturing activities. There is little evidence of the new economy in the industrial structures of most Arab economies. Domestic savings are inadequate; they rarely finance investment. High levels of unproductive consumption have been staunchly ingrained in the operating systems of most Arab societies. Illiteracy is still excessively high, particularly among females. Mean years of schooling have increased, but remain far below other successful developing countries. Industrial policies are either too stringent or absent entirely, and there is a tendency to adopt IMF peddled "policy fads" that are inappropriate for Arab development and Arab values.

In short, dependence on the rent from oil has reduced the Arab countries' incentives to diversify their economies, develop alternative manufacturing capacities, promote export-oriented industries, encourage domestic savings and anchor income on solid productivity. Traditional economic activities and structures have been maintained. Dependence on external sources of finance have deepened, and economic performance has slipped. Although large oil revenues brought about significant improvements in health, education and infrastructure throughout the Arab world, they diminished the incentive to capitalize on these achievements. Arab economic performance in the 1980s is symptomatic of an "Arab disease" that is more fundamentally damaging than the "Dutch disease" that afflicted Holland in the 1940s following the discovery and commercialization of natural gas. Holland had fertile land, abundant water, a highly skilled labour force and a European infrastructure and market.

The example of the Arab experience in the 1970s and 1980s is especially relevant to the Palestinian economy. While the need for external sources of finance is urgent, the Palestinians must balance this urgency for finance against a disastrous dependency on precarious international charity. They simply should not repeat the Arab experience of the 1970s and 1980s, and should try to avoid contracting this crippling Arab disease. The earlier they begin developing local and regional financing sources, the better.

Unfortunately the foreign investment that became the engine of growth in many Asian countries has not been significant in the Arab region. Foreign investors have stayed away from the Arab region, which has not been able to attract external resources and all of the complementary facilities that come with them (see figures 9 and 10). The Arab economy has thus lost a special opportunity to use its own internal resources for meaningful development

It is difficult to believe that all of the crippling factors that thwarted Arab economic development in the 1980s and early 1990s were internally generated. Indeed, the hostile foreign environment that the Arabs faced in this period is to be noted. Five Arab countries have either been torn apart by civil strife and/or by external enemies. No other region has suffered so much in such a short period of time. Strangely enough, these troubles can be attributed directly or indirectly to the rent derived from oil.

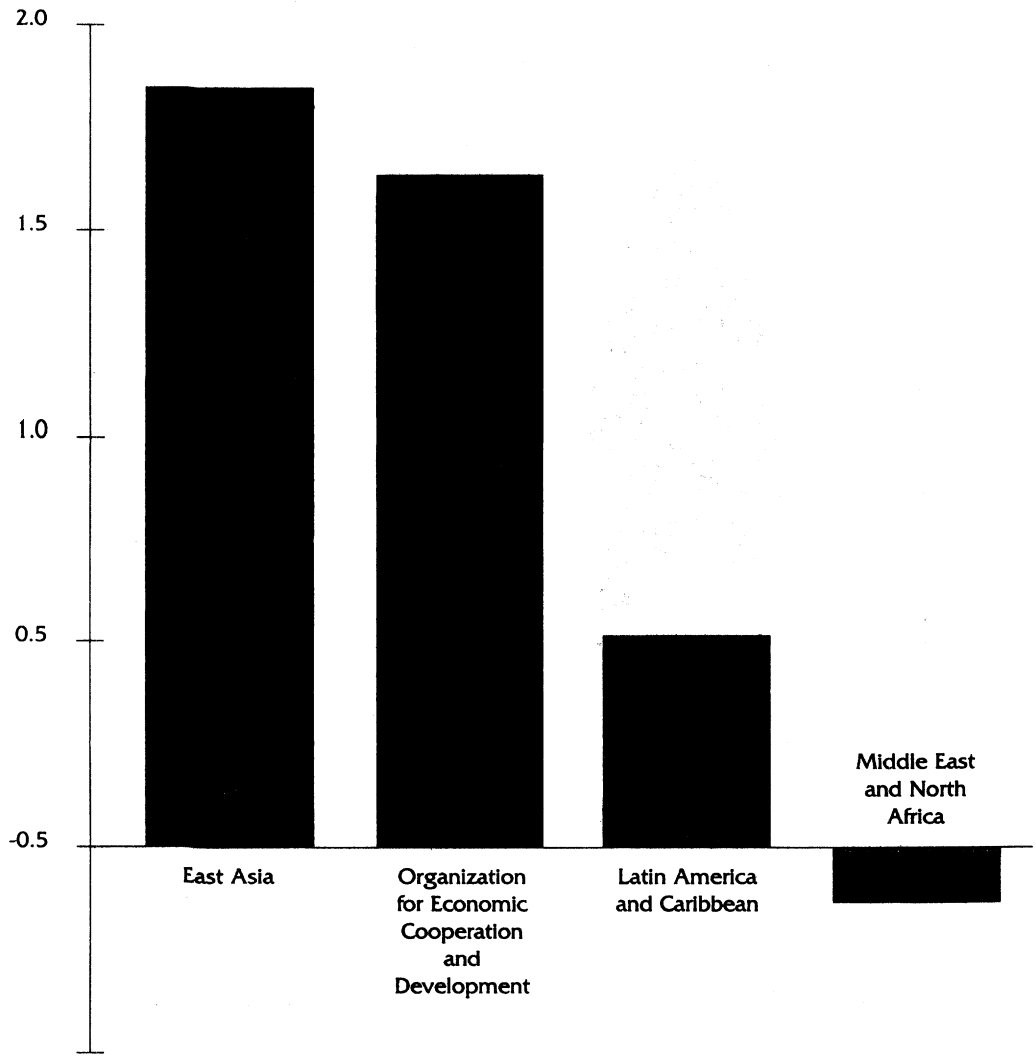
II. ISRAELI ECONOMIC SUCCESS

In contrast to the Arab economies, the Israeli economy is experiencing unprecedented rates of real growth. As is clear from figure 11, the growth rate of real GDP was almost twice as high in the 1990s as it was in the 1980s. The post-Oslo rates, in particular, are exceptionally high.

The remarkable changes in the Israeli economy pertain to a number of fundamental factors. Among the most important is gross fixed capital formation. Israel typically enjoyed a high investment-to-GDP ratio, but this rate slipped to about 16.7% in 1989. In 1991, with the promise of peace, it climbed abruptly to 24% of GDP, despite the fact that GDP was rising at very fast rates (see table 2).

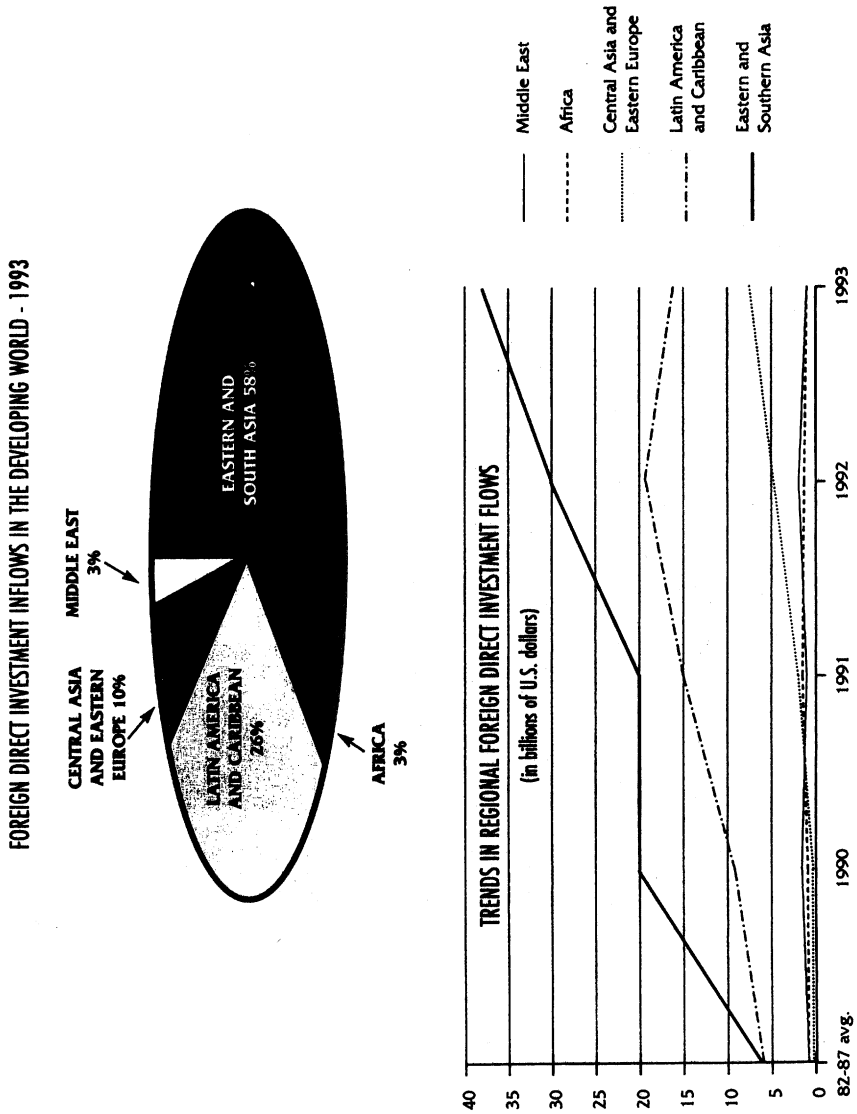
Israel's recent robust economic performance is also demonstrated by changes in the unemployment rate, inflation and the rate of export growth. As a result of Russian immigration and a worldwide economic downturn, unemployment rose to a high of 11.2% in 1992 (see table 3 and figure 13). Since then, however, unemployment has declined to 7.8%. Israel has suffered from severe inflation since its inception: double-or-triple digit inflation was typical for much of the 1970s and 1980s. Israel managed to lower inflation to about 20% in the late 1980s, but it was only in the wake of Oslo that inflation dropped below 15% (see table 4 and figure 14). Finally, Israeli exports increased at very slow rates through the late 1980s, with the volume of exports even declining between 1990 and 1991. Since the Oslo agreement, however, exports have grown rapidly: in 1994, for instance, yearly export growth exceeded 15% (see table 6 and figure 17).

Figure 8. Average total factor productivity, 1960-1990



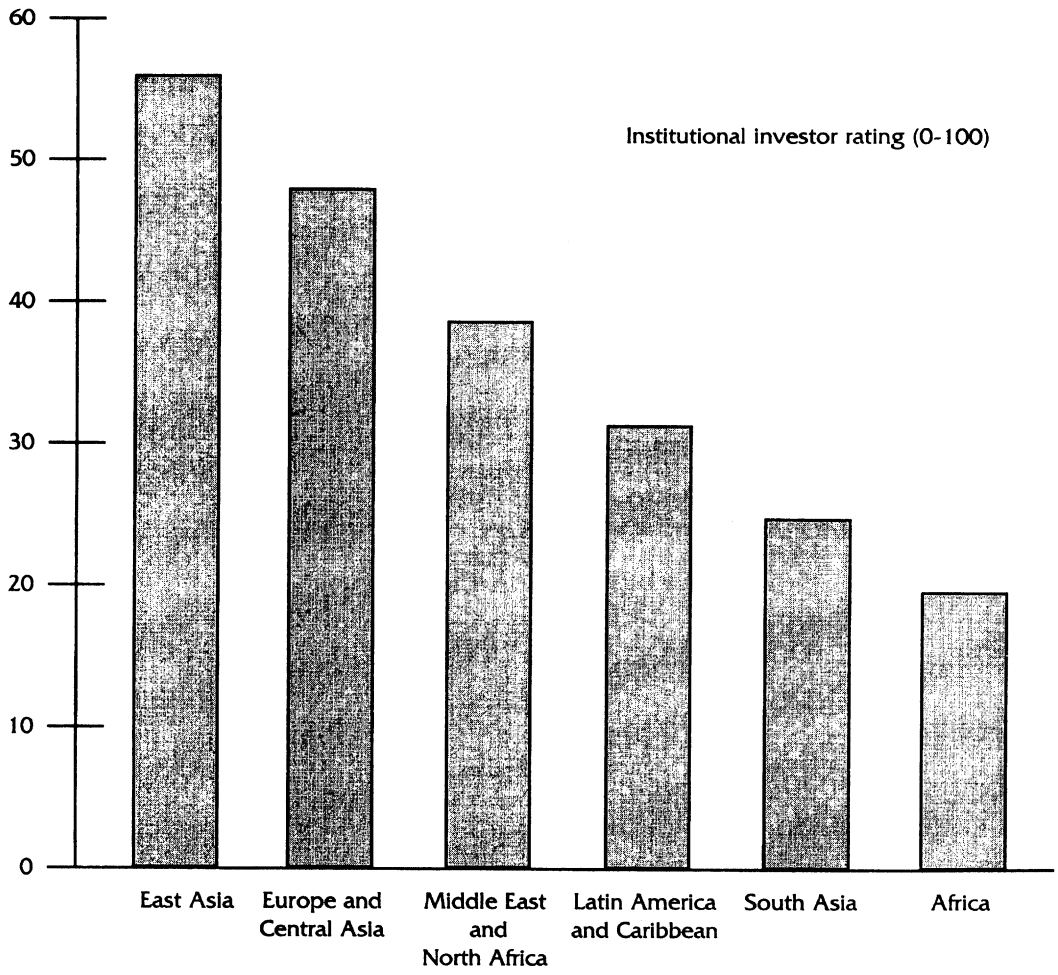
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 9. Foreign direct investment is lagging



Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 10. Investor attitude rating by region



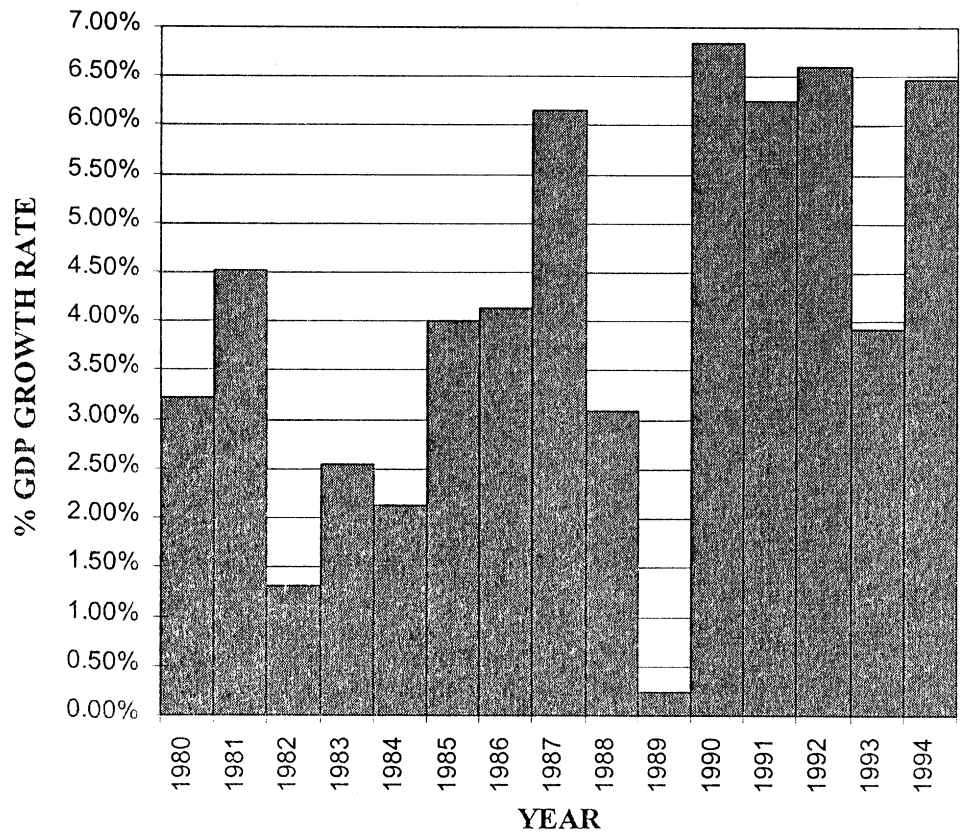
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Note: The higher the number, the higher the rating.

Perhaps the most significant development has been Israel's successful rearrangement of its production and economic structures in the 1980s. The share of agricultural exports dropped from 10.2% in 1980 to a mere 3.8% in 1990. Textiles also lost market share, falling from 8.3% of exports to 6.1% of exports between 1980 and 1990. Most striking, however, was that the share of metal manufacturing rose from 21.9% of exports in 1980 to 36.7% in 1990. This last category includes all types of heavy and sophisticated machinery and products.

Indeed, real economic factors and policies have contributed greatly to the transformation of the Israeli economy. It is inconceivable, though, that Israel could have realized all these gains in exports and overall economic growth without the promise of peace. The significant changes in most economic variables after 1991 support this contention.

Figure 11. Israeli real GDP growth, 1980-1994



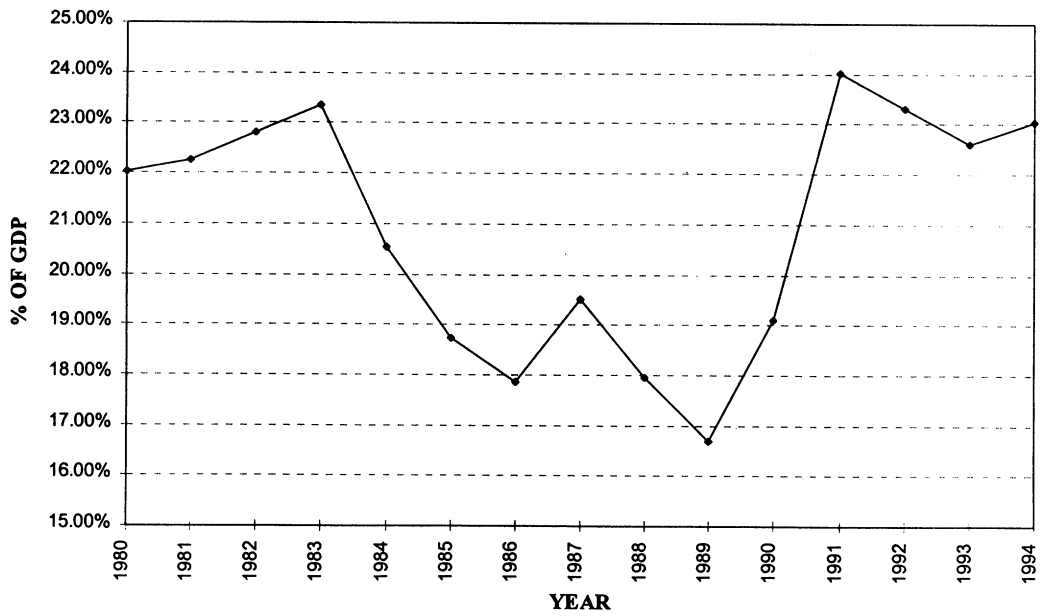
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

TABLE 1. ISRAELI GROSS DOMESTIC PRODUCT (GDP), 1980-1994

Year	GDP (millions of current new shekels)	GDP at 1990 prices (millions of new shekels)	Real GDP growth (percentage)	GDP (millions of US$)	GDP per capita (US$)
1980	111.61	74,756	3.23	21,780.93	5,613.64
1981	265.15	78,131	4.51	23,258.60	5,888.25
1982	596.31	79,154	1.31	24,539.34	6,089.17
1983	1,542.00	81,165	2.54	27,437.72	6,675.84
1984	7,636.00	82,900	2.14	26,043.66	6,260.49
1985	28,454.00	86,222	4.01	24,138.11	5,706.41
1986	44,563.00	89,789	4.14	29,952.28	6,965.65
1987	56,906.00	95,306	6.14	35,686.69	8,166.29
1988	70,225.00	98,246	3.08	43,920.82	9,892.08
1989	85,642.00	98,483	0.24	44,689.00	9,886.95
1990	105,216.00	105,216	6.84	52,185.30	11,198.56
1991	135,635.00	111,787	6.25	59,512.53	12,022.73
1992	161,279.00	119,157	6.59	65,584.56	12,809.49
1993	184,078.00	123,824	3.92	65,042.93	12,365.58
1994	221,456.00	131,833	6.47	73,546.54	13,619.73

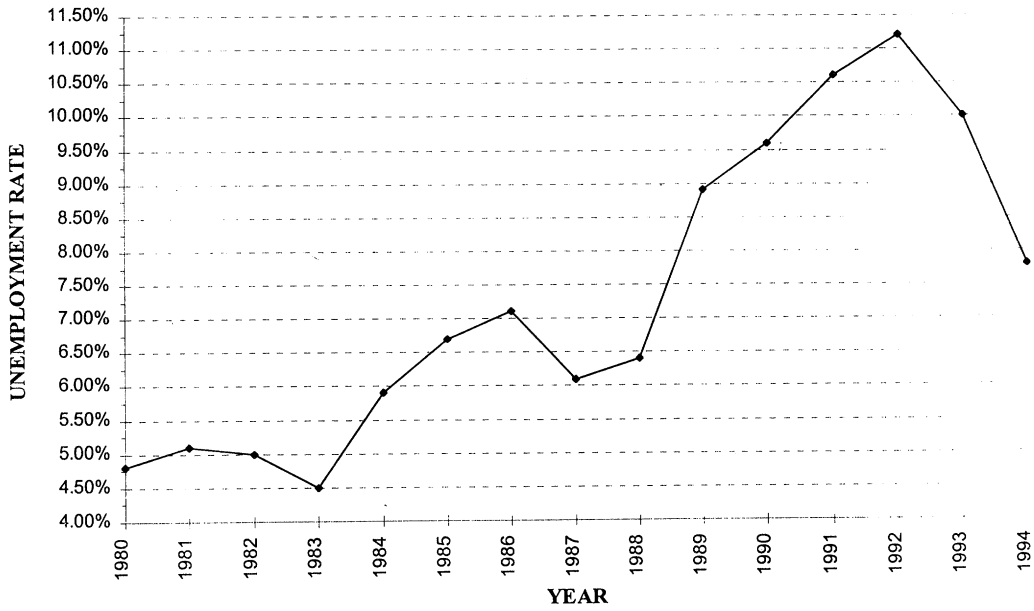
Source: International Monetary Fund, *International Financial Statistics Yearbook* (Washington: IMF, 1996), pp. 448-449.

Figure 12. Gross fixed capital formation as a percentage of GDP



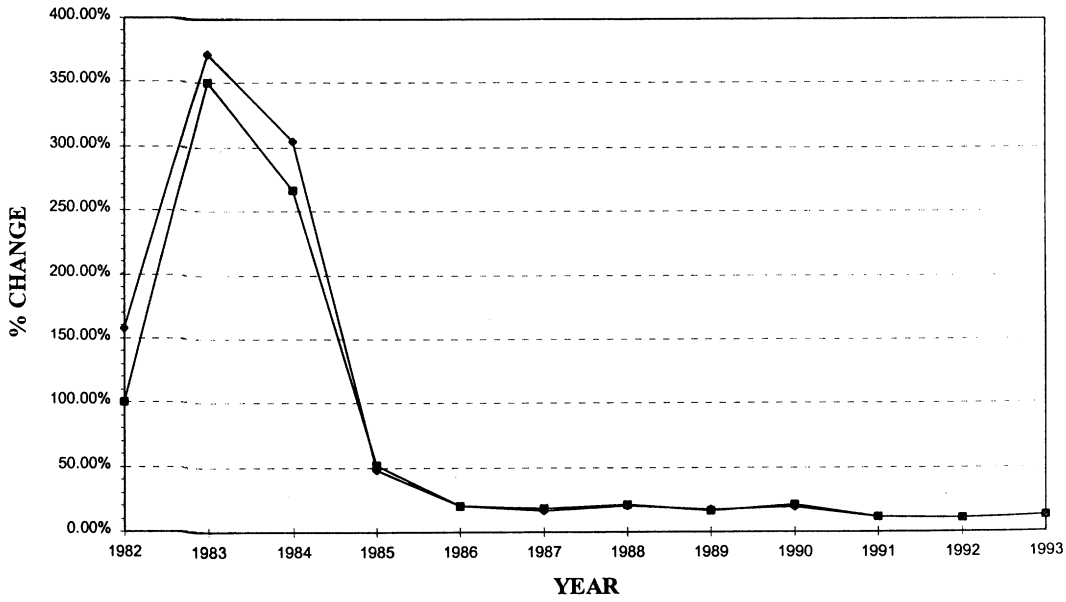
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 13. Unemployment rate, 1980-1994



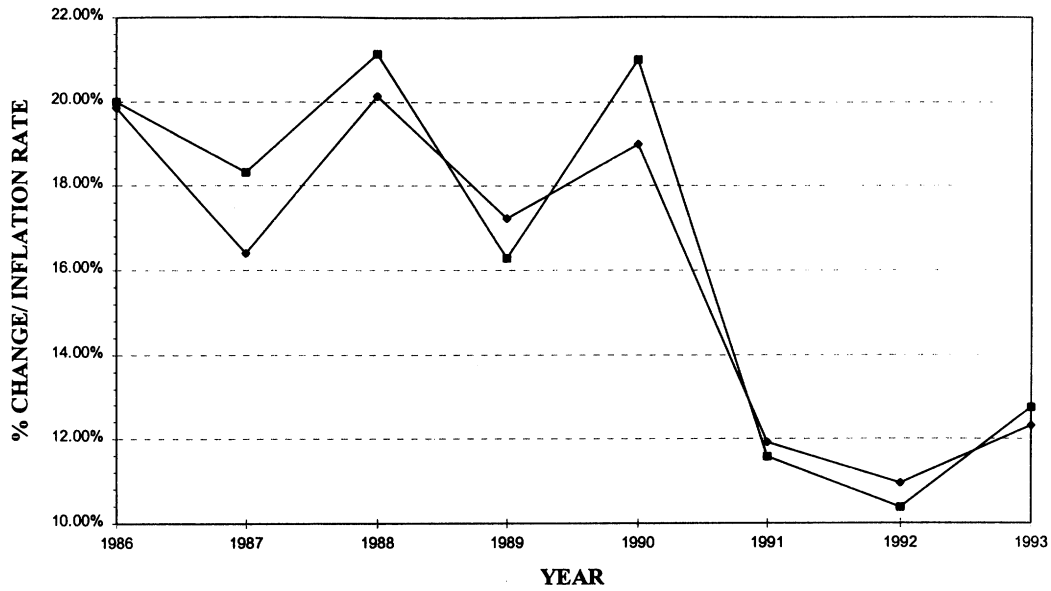
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 14. Israeli inflation rates, 1982-1993



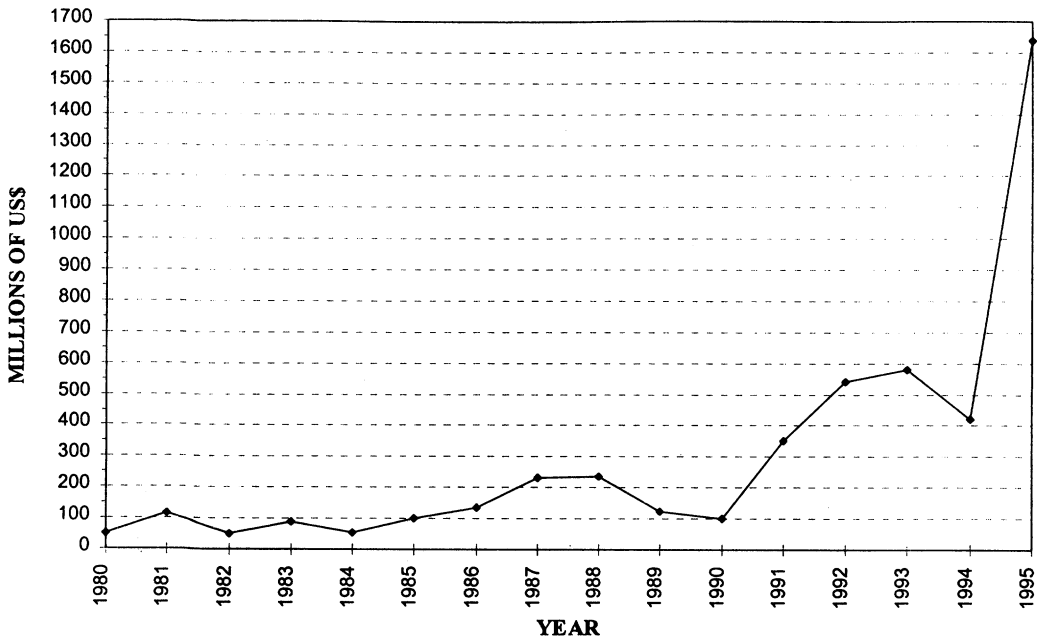
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 15. Israeli inflation rates, 1986-1993



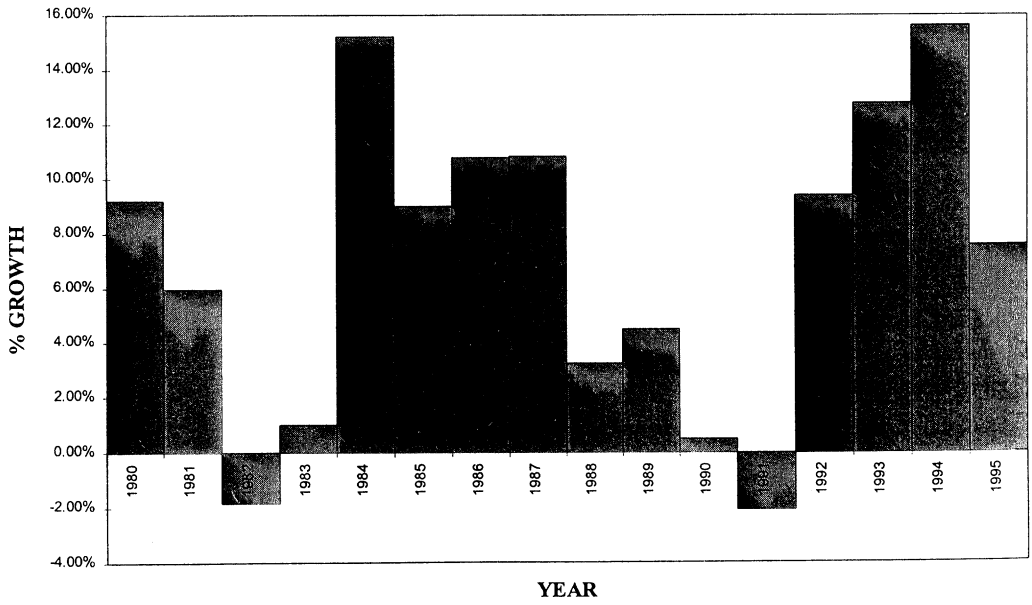
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 16. Direct investment in the economy, 1980-1994



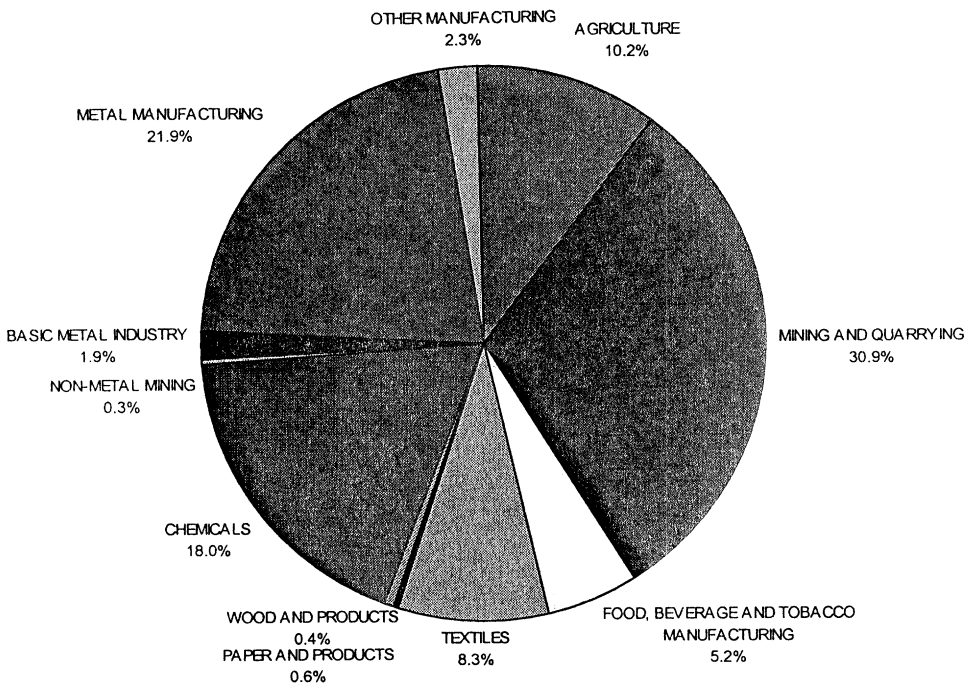
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 17. Growth in volume of exports, 1980-1995



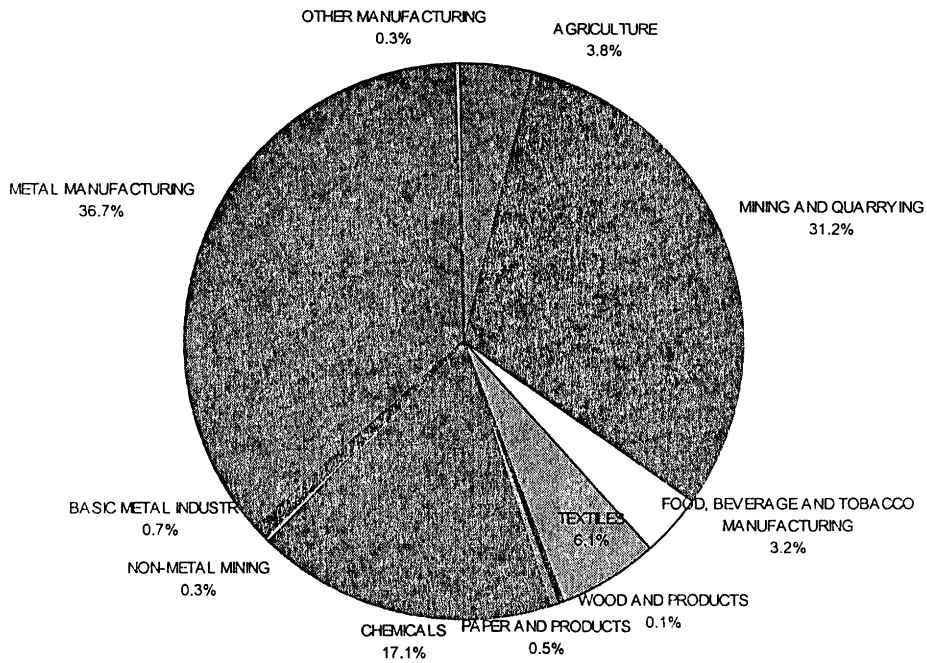
Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 18. Composition of Israeli exports, 1980



Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

Figure 19. Composition of Israeli exports, 1994



Source: Adopted from John Page, "Economic prospects and the role of regional development finance institutions", *Regional Economic Development in the Middle East: Opportunities and Risk* (The Center for Policy Analysis on Palestine, December 1995).

TABLE 2. ISRAELI GROSS FIXED CAPITAL FORMATION (GFCF), 1980-1994

Year	GFCF (millions of current new shekels)	GFCF as a percentage of GDP
1980	24.583	22.03
1981	59.002	22.25
1982	136.006	22.81
1983	360	23.35
1984	1,568	20.53
1985	5,331	18.74
1986	7,962	17.87
1987	11,105	19.51
1988	12,610	17.96
1989	14,299	16.70
1990	20,092	19.10
1991	32,575	24.02
1992	37,580	23.30
1993	41,615	22.61
1994	51,027	23.04

Source: International Monetary Fund, *International Financial Statistics* (Washington: IMF, 1996), pp. 448-449.

TABLE 3. ISRAELI UNEMPLOYMENT RATES, 1980-1994

Year	Unemployment rate (percentage)
1980	4.80
1981	5.10
1982	5.00
1983	4.50
1984	5.90
1985	6.70
1986	7.10
1987	6.10
1988	6.40
1989	8.90
1990	9.60
1991	10.60
1992	11.20
1993	10.00
1994	7.80

Source: United Nations, *Statistical Yearbook*, 41st ed., 1994.

TABLE 4. ISRAELI PRICE DEFLATORS, 1982-1994

Year	CPI (1980=100)	GDP deflator (1990=100)	Percentage change in CPI	Inflation (based on GDP deflator)
1982	0.7	1	157.14	100.00
1983	1.8	2	372.22	350.00
1984	8.5	9	304.71	266.67
1985	34.4	33	47.97	51.52
1986	50.9	50	19.84	20.00
1987	61	60	16.39	18.33
1988	71	71	20.14	21.13
1989	85.3	86	17.23	16.28
1990	100	100	19.00	21.00
1991	119	121	11.93	11.57
1992	133.2	135	10.96	10.37
1993	147.8	149	12.31	12.75
1994	166	168		

Source: United Nations, *Statistical Yearbook*, 41st ed., 1994.

TABLE 5. DIRECT INVESTMENT IN THE REAL PRIVATE ECONOMY, 1980-1995

Year	Direct investment in economy (millions of US$)
1980	51
1981	114
1982	51
1983	88
1984	53
1985	99
1986	137
1987	233
1988	235
1989	125
1990	101
1991	351
1992	539
1993	580
1994	421
1995	1637

Source: International Monetary Fund, *International Financial Statistics* (Washington: IMF, 1996), pp. 448-449..

TABLE 6. ISRAELI VOLUME OF EXPORTS, 1980-1995

Year	Volume of exports (1990=100)	Growth in volume of exports (percentage)
1980	56.9	9.21
1981	60.3	5.98
1982	59.2	-1.82
1983	59.8	1.01
1984	68.9	15.22
1985	75.1	9.00
1986	83.2	10.79
1987	92.2	10.82
1988	95.2	3.25
1989	99.5	4.52
1990	100	0.50
1991	97.9	-2.10
1992	107.1	9.40
1993	120.8	12.79
1994	139.7	15.65
1995	150.3	7.59

Source: International Monetary Fund, *International Financial Statistics* (Washington: IMF, 1996), pp. 448-449..

III. ECONOMIC THEORY AND FREE TRADE AMONG UNEQUAL PARTNERS

Economic theory suggests that in equilibrium, under specified conditions, the long-term outcome of exchange is that factor prices are equalized throughout the world: the less-skilled workers in poor countries will be paid the same wages as their counterparts in advanced countries, and the same holds true for skilled workers.

But does factor price equalization, appropriately qualified to fit an n-factor/n-good world, capture economic reality? For years, many trade theorists have rejected equal advantages from trade and factor equalization as a fair description of the world. The wide, and in some cases increasing, variation in pay levels within and among countries seemed to make it a textbook proposition of little relevance.[2] Reflecting this view, in recent debate, Bhagwati and Dehejia[3]

[2] Anne Kruegar, "Factor endowments and per capita income differences among countries", *Economic Journal*, vol. 78 (September 1968), pp. 641-657.

[3] Jagdish Bhagwati and Vivek Dehejia, "Free trade and the wages of the unskilled: is Marx striking again?"

enumerated some of the "extraordinarily demanding" assumptions needed to establish factor price equalizations and even simpler propositions about the gains of trade. These include the following:

- Identical technology and the same production functions are in existence in all countries.
- Tastes are identical.
- Sectors have similar ranking of skilled to unskilled and labour to capital intensity at all prices.
- Economies of scale are absent.
- Countries are incompletely specialized; that is, they produce the full set of traded goods.

Furthermore, Norman and Venables stress that in a Hecksher-Ohlin model where the cost of trade is negligible, goods trade does not equalize factor prices; flows of capital and labour would also be needed.[4] Hence, there are many trade theorists today who believe that trade exacerbates factor price diversions.

We begin with a model first developed by Murphy, Schleifer and Vishny that offered a formalization of the Big Push theory of Paul Rosenstein-Rodan's 1943 "Problems of industrialization of Eastern and South-Eastern Europe" that ultimately laid down the foundations of modern trade and growth theory.[5]

Let us begin with two economies–or better still, just to make a point, the same economy with two sectors and a fixed endowment of labour (L). Labour can be employed in either of the two sectors: a "traditional" sector, characterized by constant returns, or a "modern" sector, characterized by increasing returns. Labour is not paid the same wage in each sector: it is reasonable to assume that labour must be paid a premium to move from traditional to modern employment.

Let $w > 1$ be the ratio of the wage rate that must be paid in the modern sector to that in the traditional sector.

$$(1) \qquad \frac{W_m}{W_t} = w$$

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in *Trade and Wages*, ed. Bhagwati and Dehejia (Washington: American Enterprise Institute, 1994).

[4] Victor Norman and Anthony Venables, "International trade, factor mobility and trade costs", CEPR Discussion Paper 766, 1993.

[5] R. Murphy, A. Schleifer and R. Vishny, "Industrialization and the Big Push", *Journal of Politial Economy*, vol. 97 (1989), pp. 1003-1026.

The economy (economies) is assured to produce N goods, where N is a large number. Units are chosen such that labour productivity within the traditional sector is unity in all goods. In the modern sector, increasing productivity of labour in all goods–that is, decreasing costs–is assumed.

$$(2) \qquad `L_i = F_i + \alpha Q_i$$

Q_i = the production of good i in the modern sector

F_i = a fixed amount of labour needed to produce Q_i irrespective of the amount of i

It is clear that $\alpha < 1$ where α is the marginal requirement of labour.

$$(3) \qquad \frac{\partial L_i}{\partial Q_i} = \alpha$$

For simplicity, we assume that the demand for N goods is a Cobb-Douglas function and symmetric. That is, each good receives a constant expenditure share (1/N).

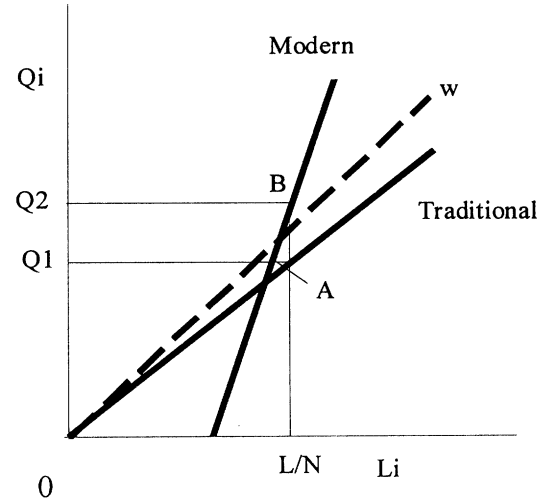
The traditional sector is populated by many producers, who are assumed to be price-takers. Perfect competition prevails in this sector, and each good will have perfectly elastic supply at the marginal cost of production of unity, given our choice of units. Alternatively, given the decreasing cost assumption in the modern sector, a single entrepreneur can produce each good.

This unconstrained monopolist in the modern sector cannot, of course, price her products above unity, because she will have to face competition from the traditional sector. The question becomes: will production take place in the modern sector or the traditional sector?

A simple diagram developed by Paul Krugman can help answer this question.[6] On the horizontal axis is the labour, L_i, used to produce good i. On the vertical axis is the sector's output Q_i. The solid lines represent the technologies of production in the two economic sectors. Constant returns in the traditional sector are represented by a 45-degree line, while the slope of the line for the modern sector has a slope of $1/\alpha$.

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[6] Paul Krugman, *Development, Geography and Economic Theory* (Cambridge, Massachusetts and London: MIT Press, 1995).



The figure above allows us to determine what each economy would produce if all labour were allocated to it. In either case, L/N workers would be employed in the production of each good. If all the goods are produced in the traditional sector, Q^1 of each good will be produced. If all the goods are produced in the modern sector, Q^2 will be produced. As is apparent from the diagram above $Q^2 > Q^1$. This will always be the case, provided:

$$(4) \qquad \frac{\frac{L}{N} - F}{\alpha} > \frac{L}{N}$$

That is, as long as the marginal cost advantage in the modern sector is sufficiently large and/or fixed costs are large. It appears that the modern sector will have a major advantage over the traditional sector, since the marginal cost advantages, with α being very small, of the modern economy are so large that it will absorb most of the labour. It is no wonder, therefore, that under Israeli occupation, Palestinian labour has migrated in large numbers to work in Israel.

But there is a catch here. Even if the economy could produce its output using modern technology, this does not mean it will. Each individual entrepreneur must find it profitable to produce, taking into account the necessity to pay a premium wage.

Suppose that only one firm starts producing with modern techniques while all other producers use traditional techniques. The firm has to charge the same price as all other producers and sell the same amount. Since there are many

goods, the income effects can be safely ignored and it can be supposed that Q^1 of each good continues to be sold. This firm will be at point A in the diagram. Is this firm profitable? It uses less labour, but must pay a premium wage. If a ray is drawn, OW in the diagram, to represent the premium wage, the firm will only be profitable if OW passes below point A. In the diagram, therefore, firm A is not profitable.

On the other hand, assume that most of the firms are producing their output using modern techniques. Then each firm will produce Q^2, leading to production and employment at point B. Here, it is profitable for each firm to continue production, as the wage premium ray passes below point B.

There are three distinct possible outcomes here. If the wage premium is low, the modern economy will prevail; if it is too high, the modern economy will falter; and if it takes on an intermediate value, the two economies will co-exist, with the modern economy specializing in manufacturing and modern products, while the traditional economy produces traditional goods.

Three major conditions are necessary for the dominance of the modern economy. First, there must be economies of scale in production in the modern sector. Second, the modern sector must be able to draw labour from the traditional sector, which pays lower wages. Essentially, Krugman argues, there must be an elastic supply of labour to the modern sector.

The interaction of the internal economies of scale with the elastic supply of labour generates the external economies in the modern sector that allow it to prosper. The modern sector's prosperity is contingent on the elastic supply from the traditional, poorer sector.

There is a third factor that Krugman does not discuss, which the author of the present paper believes is highly significant. This is the ability of the modern economy to sell its expanded output. This ability is assured by the absorption of labour away from the traditional sector, the increased income through the wage premium and any other income effects that accrue as a result of increased efficiency of the economy.

The implications of this simplistic model for the Palestinian economy under occupation and free trade are numerous and profound.

First, Israel possesses the majority of the modern sectors operating under the increasing returns to scale, characteristic of manufacturing activities.

Second, Israel has been able to offer a wage premium to Palestinian workers in the traditional sector and has assured itself an elastic supply of labour to its modern industries by releasing Israeli labour from traditional activities and substituting Palestinian labour in its place.

Third, the influx of Palestinian labour into Israel at a fraction of the Israeli labour cost has reduced the wage premium in the Israeli modern sector and made it more profitable, hence allowing Israeli industry to develop and prosper.

Fourth, the shekels earned by Palestinians in Israel are typically spent in the consumption of Israeli products. Israel has not only captured an elastic supply of labour, but also a sufficiently large effective demand for its products.

While the implications of this model are particularly applicable to Israeli/Palestinian economic relations and agreements, other Arab countries are also likely to experience some of these implications, albeit at lower cost. The magnitude of these costs are contingent on three fundamental factors:

- First, the extent to which they offer Israel preferential treatments and unimpeded access to Arab markets
- Second, their geographical proximity to Israel
- Third, the degree to which labour and other factors are mobile between the two economies.

IV. THE NEW MIDDLE EAST

Let the reader suppose he or she is in Europe in 1940 imagining the Europe of 1970, or a Japanese in 1940 imagining the Japan of 1970–"How far would you dare imagine?" asked the Association for Peace of Tel Aviv (1970). Implicitly it was asking why the people of the Middle East cannot resolve their conflicts in the same way the Europeans and the Japanese did. Why can the frontiers of the national States of the area not be open for trade and why should cooperation not replace conflict? Why should the conflicts in the Middle East today be assumed to be more important than the conflicts among Europeans a few decades ago? Peres raises the same questions.[7] Put in this framework, the Middle East conflict is reduced to a conflict over frontiers and a simple power struggle among neighbours. Israel is assumed to be as Middle Eastern as Germany is European and peace is claimed to hold promising benefits for the Palestinians in particular and for the Arabs in general.

The enormous "Arab peace dividends" are presumed to derive from an increase in external aid, from the rebuilding of indigenous institutional capacities to guide economic and reconstruction efforts, from greater and more guaranteed access to the Israeli market and possibly other Western markets with which Israel has already concluded free-trade arrangements (the United States, the EU and

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[7] S. Peres with Arye Naor, *The New Middle East* (New York: Holt, 1993).

most recently–July 1996–Canada), from an increased Palestinian command over domestic natural resources, from the expected increase in international tourism in the region, from the decrease in military spending, and from the reduction in political instability and general uncertainty that militated in the past against foreign investment in the region. The Israeli benefits are less discussed, but these, the author fears, are far more important and certain than Arab benefits. In bargaining situations such as the one considered here, relative benefits are what count. A balanced evaluation of the "dividends of peace" calls for an assessment of both sides of the ledger of peace.

The alleged Arab gains rest on some strong claims; they have to be examined and evaluated against the background and experience of the Palestinians under occupation and against traditional economic analysis of evaluating opportunity costs and alternatives. The author hastens to say that this calculus of peace is not only of interest to the Palestinians but is also the concern of all the neighbouring Arab countries, who are closely watching the events unfold. What is unfolding in the occupied territories is taken as a test case and as a precedent of what is likely to await the Arab economy at large. The more realistic, credible and visible the "benefits" of peace are, the less skeptical the neighbours will be, and vice versa.

The actual economic conditions and problems the Palestinians endured under occupation provides a background and a yardstick for judging the promises and achievements of peace and the new regional plans. A theoretical framework for the expected gains and losses was provided in the previous section. Israeli occupation of the West Bank and Gaza Strip was extremely costly for the Palestinians and the Arabs. These costs manifested themselves in the loss of control over water, in the loss of prime agricultural land, in the severance from traditional markets, in constrained and limited industrial growth, in disarticulated and precarious education, in inadequate and insufficient investment in physical infrastructure, in the loss of the indigenous public sector, which could have protected and guided the process of development, in the subjugation of the Palestinian population to the occupiers' tax and import regimes, in the transfer of the Palestinian social surplus to Israel through taxation in excess of expenditures in the territories and through skimming of the Palestinian holdings of foreign exchange, in the export of the local producers to either Israel or the Gulf, and in the destructive effects of political disruption and violence as people rebelled against the humiliating tyranny of their oppressors.

While the occupation may not be a strictly zero-sum game, Israel has derived enormous gains from it. These gains included tapping freely into Palestinian water, exploiting a captive export market, drawing on cheap labour whose income was spent primarily on Israeli products, confiscating prime agricultural land and skimming all the free rents derived from it, collecting tax revenues far in excess of the occupation and its administration costs, and

skimming the large foreign exchange flows from Palestinian remittances from the Gulf and elsewhere.

It is natural to expect that under peace most of these negative factors would be eliminated, that some positive gains would be realized and that the Palestinians would be compensated for their losses and/or suffering. Strangely, little mention of these enormous losses seem to surface when the economics of peace is discussed.[8]

Under occupation the West Bank and Gaza Strip were forced into an economic union with Israel, not much different from the vision of the New Middle East. A small, fragmented, disarticulated, poor and labour-intensive economy was confronted with a relatively rich, advanced, capital-intensive, strategic and highly centralized economy. This confrontation took place at a time when the Palestinians were denied their most vital resource (water), when access to the Israeli market was blocked and when the areas were severed from their traditional Arab markets. It is small wonder that agriculture, the mainstay of the preoccupation economy and the largest employer of people, faltered.

Displaced from agriculture with no alternative employment in industry, labour from the occupied territories moved to work in Israel generally at higher pay than in the territories but at the lowest end of the Israeli wage scale. Although Palestinian workers represented no more than 7% of total employment in Israel, they constituted the majority of workers in construction and a large share of agriculture labour. On the other hand, they represented over a third of all the employed residents of the occupied territories. Their earnings accounted for about one quarter of the GNP of the West Bank and 40% of that of the Gaza Strip. This export of labour and the associated rise in labour costs in the occupied territories destroyed the possibility of developing domestic manufacturing production. Earnings in Israeli shekels went ultimately to buy Israeli goods. Net Israeli exports to the territories were over $500 million per year before the *intifadah*.

Israeli manufacturing could have taken advantage of cheap, unemployed and uprooted labour by locating in the territories. This did not happen. Some limited subcontracting of clothing and textile sub-activities occurred, but the magnitude of such arrangements was limited and was restricted to a small subset of minor tasks generally performed by women. Some have argued that the security situation in the occupied territories and the general uncertainty about the future of the areas scared investment away.[9] The insecurity during the *intifadah*

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[8] See the detailed account of these losses in Atif Kubursi, "An economic assessment of total Palestinian losses" in *Palestinian Rights and Losses in 1948*, ed. Sami Hadawi (London: Saqi Books, 1988), pp. 115-189.

[9] Efraim Kleiman, "The Economic provisions of the agreement between Israel and the PLO", The Hebrew University of Jerusalem, Working Paper No. 300, February 1995.

and the uncertainty about the future fate of the territories may explain the lack of investment in the late 1980s, but it does not explain the lack of investment between 1967 and 1987, when the occupied territories were under the tight grip of the IDF, with no meaningful investment undertaken.

The communal pauperization of the Palestinians by denying them access to their resources (water and land) and ultimately labour cannot be dismissed as a pure accident of history or as an unintended and incidental effect of the occupation. Rather, it is part of a long-standing Israeli denial of the existence of the Palestinians as a people and a community capable of leading an independent national existence. Improvement in the economic prospects of the Palestinians, then, requires their reconstitution as an independent national community. No amount of international aid can make up for the loss of land and water. In a primarily agrarian economy, water is the most critical economic factor and upon which depends the reconstruction of the Palestinian economy, at least in the initial stages.

The financial requirements for the development and reconstruction of the Palestinian economy are finite but massive. The list of urgent needs for sewers, roads, schools, hospitals, ports, airports, etc. is long and dire. But finance without real resources will perpetuate the state of dependency of the Palestinian economy on outside help and on the Israeli economy. Any large investments made now would go through the Israeli economy and would most likely not be sustainable. The author comes to this pessimistic view from reviewing the fate of the Arab economy in the 1990s, when its rate of growth in GDP fell far below other regions, including sub-Saharan Africa.

As was mentioned above, the Palestinians must balance the urgent need for finance against a negative and disastrous dependency on precarious international charity. They must not repeat the Arab experience of the 1970s and 1980s, and should try to avoid contracting the crippling "Arab disease."

While water issues are still to be negotiated, none of the agreements concluded so far augur for a reasonable degree of Palestinian control over this vital resource. There is a great deal of discussion about "unitizing" the management of this "common" resource. Indeed, there are efficiencies in jointly managing this resource, but before any joint management procedures are put in place, it is critical that "property rights" over this resource be established. Agreement (Oslo I) after agreement (the Paris Protocol and Oslo II) still treat Palestinian water as Israeli charity to the Palestinians.[10] Israel has recently raised the share of the Palestinians by a modest amount. In doing so Israel is signalling

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[10] The protocol is formally "The Protocol on Economic Relations between Israel and the PLO as Representing the Palestinian People". It is incorporated as Annex IV in the Cairo Agreement signed on 4 May 1994.

that it alone has full power and capacity to control and manage the contested water that collects under the West Bank aquifers. Peace will be credible and visible to the extent that the Palestinians are able to reclaim their lost land and water. Even in the last, third phase of Oslo II, the Palestinians will have authority over only one third of their land and less than one fifth of their water.

Dismantling the occupation should allow the Palestinians to manage their economic affairs as they choose and to protect and guide their economy in the manner they see best serves their interests. The Paris Protocol makes sure that this shall not be the case. The Palestinian economy is put under the Israeli import and tax regimes. Israel, fearing that the Palestinian economy may be used to smuggle duty-free goods into Israel (or serve as a tax haven), moved very quickly to impose its own tariff regime (the same tariffs on all foreign goods in both the territory under the Palestinian Authority and Israel). The few exceptions are allowed as an afterthought to give some latitude for the Palestinians over goods imported from countries that do not trade with Israel. The rule is that the Palestinians must impose the same tariffs on imports as the Israelis. These tariffs have evolved to protect and promote the Israeli economy, and they are not consistent with the interests of a fledgling economy with limited productive capacity.

The Palestinians were a promise for smoother access to the Israeli market, but for now quotas are imposed on Palestinian poultry, eggs, potatoes, cucumbers, tomatoes and melons entering the Israeli market. Although in principle the quotas apply to exports from either side to the other, in practice they apply only to the Palestinians with the exception of the restrictions on melons. The price of the protocols is greater integration with the Israeli economy. What the Palestinians have worked out is a sort of mix between a "customs union" and a "common market" with the Israelis. Any such arrangement generally involves "trade creation" and "trade diversion". One wonders whether giving the Israelis full and unimpeded access to the Palestinian market is good for the Palestinians' long-term prospects in building a diversified and productive economy. For all practical purposes, this agreement perpetuates and legitimates the economic structures that emerged under occupation. Accepting the "trade diversion" implications of the agreement simply means that the Palestinian Authority has preferred to tie its economic fortune to Israel rather than to the Arabs. The author wonders whether the Palestinian negotiators concluding this agreement have thought through all of its implications; he suspects not. It does not appear to be consistent with their interests in accessing the wider and less competitive Arab markets.

Defenders of the agreement often quote the many advantages that economic theory generally predicts will follow from freer trade. The general economic belief is that smaller and poorer countries are supposed to win most from access to the market of richer partners. What is missing from this argument are many factors and conditions upon which the theory is built. Economists tend

to exaggerate the spread effects of free trade and underrepresent its "backwash effects" and adjustment costs.

Actually, bargaining theory is perhaps clearer and more realistic about the outcomes of bargaining among unequal partners. It predicts that the party with the most options is likely to dictate its terms upon the party with few or no options. It does not stretch the imagination much to suggest that all the agreements concluded so far between the Israelis and the Palestinians have been concluded between unequal partners and under duress and that little but lopsided advantages to the Israelis could have been expected from them. It is stated that the gains will come from the dynamics of foreign investment, large tourism flows and the higher productivity that springs from competing with more advanced competitors. But it is precisely in these areas that the Arabs will lose most.

There is the expectation that foreign investment will be attracted to the region and that peace will encourage a larger flow. This indeed is likely to be the case. But much, if not all, of this investment will likely go to the Israelis. Much of the foreign investment that is taking place today is of the tariff-jumping kind. The more customs unions the Israelis succeed in drawing up in the region and the more clauses they eliminate from the Arab boycott, the more foreign investment they will attract.

The Arab boycott was very costly for the Israelis. Some estimates put the cost at $40 billion over the past four decades. The author tends to believe that this cost may have been even higher, if the estimate included the amount of foreign investment that Israel could have attracted in its absence and if a real present value approach were adopted.

The Israelis have increasingly become concerned about the nature of their dependence on foreign aid from the United States. As pressures mount to balance the monumental United States federal budget, foreign aid will most likely be at the top of the chopping agenda. Israel currently claims the lion's share of this budget, and its share will sooner or later be at the chopping block. Peace will give Israel only a temporary respite: it will postpone the cutting but not the cut. Foreign investment on the order of $3 billion-$4 billion will be the only reliable alternative. Israel has not been very successful in attracting foreign investment in the past ($200 million-$300 million per year on average). However, with no Arab boycott and with the free-trade agreements Israel has concluded with the Palestinians and Jordanians that give its products unimpeded access directly into the two Arab markets and indirectly into all other Arab markets, the capacity of Israel to attract foreign direct investment would change dramatically. It is already changing, in fact. In 1996, Israel was successful in raising over $1.7 billion in foreign investment. Motorola, VolksWagen, Cable and Wireless, Intel and many other high-tech firms have plans to locate in Israel. Israel's gain here could easily be the Arab's loss.

Foreign investment in the Arab region has drastically declined from the high levels observed in the 1950s. The share of the region in total world foreign investment is now less than 3%. Access to world markets, new technology, advanced management systems and large investments are almost the exclusive preserve of multinationals. The Palestinians would be ill-advised not to take advantage of the current favourable international climate to attract and host foreign investment.

There are abundant examples, however, of multinationals that exploit the local market, wrestle substantial concessions that far outweigh their positive contributions and provide little or no transfer of technology. It is invariably the case that positive net benefits from foreign investment have been derived only by enlightened Governments that obstinately negotiated favourable terms from multinationals, including product mandates, home base operations and systematic transfer of technology. In the absence of a representative and free national government and wider Arab cooperation, the Palestinians are in a weak position to negotiate favourable terms. Besides, their chances of attracting a respectable share of foreign investment could hinge on their guaranteed access to the wider Arab market. The more the Palestinians tie their economic fortunes to the Israelis, the less likely they will be able to derive concessions from their Arab brethren in this regard.

Greece, which is an hour's flight from Palestine, attracts 12 million international tourists a year. Alternatively, Israel attracts no more than 2 million. With peace, international tourism is likely to increase rapidly. The Arab region is not well prepared for this influx. Arab tourism infrastructure is limited, and international linkages are virtually non-existent. Lebanon formerly had a competitive tourism infrastructure but this was destroyed in the country's civil strife. Today it cannot even meet the demand of returning Lebanese visitors. Egypt is the only Arab country with the capacity to benefit from the increased flow, but its share of the total is not certain.

The bottom line of tourism is length of stay. The longer tourists stay in a country, the more they spend and the larger the benefits from tourism to the host country. Under the prevailing circumstances, even under peace, without sufficient planning and preparation, the rewards of this tourism bonanza will be lost by the Arabs; even existing tourism may be lost, as Israel may succeed in diverting Arab tourists away from traditional Arab tourist centres (tourists from Gulf States may visit Israel instead of Lebanon or Egypt).

The potential rewards from increased tourism would be more certain of realization with proactive preparation and planning. A concerted Arab tourism strategy is required to mount joint marketing and advertising campaigns and to connect tourism flows. In the absence of such proactive planning and Arab coordination, the tourists will determine how long they stay, how much they spend and where they spend their tourist dollars. The Arabs will have to settle for

at most day trippers or safari-like visits where foreign tourists simply pass through Arab areas. Most tourists will come to Israel and will make occasional short forays into Arab land. The Jordanians are already experiencing some of these negative effects.

For every dollar spent on education in the Arab world, $166 is spent on defence. If peace were to be just and enduring, there could be substantial savings in wasteful military expenditures. The Middle East has the dubious distinction of having higher military expenditure shares in GDP than any other region in the world. Of the ten largest spenders on the military, seven countries are in the Middle East. Israel has already reduced its defence expenditures from 22% of GNP before the Camp David agreement to 10% currently. Israel will benefit far more than the Arabs from reallocating resources away from the military, given the high differential average productivity of the resources in the military in Israel and in the Arab world.

Israeli exports correspond very closely to Arab imports. The author's calculation of the Concordance Indices (indices of structural similarity of trade composition by commodity) shows that the degree of Israeli concordance with Iraqi, Saudi, Syrian, etc, trade is twice as large as the corresponding indices with Europe or the United States. The author's estimates suggest a doubling of Israeli exports under peace. Geographical proximity is another advantage for Israel in the region. Using the Palestinians as its marketing agents and as a doorway to Arab markets can speed and raise the potential.[11]

Israel has already gained from another trade angle brought about merely by the discussion of peace with the Palestinians. In 1995 and 1996, Israel had a booming trade surplus while Europe and the United States were faced with economic difficulties. The reason is increased trade with China, India and Japan, countries that would not have dared to do business with Israel if the new arrangements with the Palestinians were not in place.

V. CONCLUSIONS

The gist of the arguments here is that Israeli "peace dividends" are massive and real, while Palestinian and Arab gains are conditional, precarious and highly illusive. Even when these gains are positive they are pale in comparison with those derived or to be derived by the Israelis. The peace agreements concluded so far guarantee Israel the economic benefits it gained under occupation and also open new trade vistas, allow for the reduction of defence expenditures, dismantle the Arab boycott, and attract new foreign investment and new international tourism.

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[11] See Atif Kubursi, *The Economic Consequences of the Camp David Accords* (Beirut: Institute for Palestine Studies, 1980).

The playing field between the Palestinians and the Arabs on the one side and the Israelis on the other side is by no means level. The agreements reflect the vertical organization of power and options in existence. However, what is concluded under duress cannot last. The interest of peace calls for immediate and unconditional independence of the Palestinians and for a strategy of "Arab cooperation first". It is only from such a position that the Palestinians can be expected to conclude meaningful, symmetrical and lasting agreements. The Arabs who are watching both the Israelis and the Palestinians are neither encouraged nor impressed with what they see. Israel is using its superior bargaining power to wrestle enormous concessions from the Palestinians and now from the Jordanians, which is to be expected from independent and disjointed bargaining. Unfortunately, the only way to correct the situation is to start all over. This is admittedly difficult, but the Arabs must make the painful economic adjustments and true "reforms" that their dependence on oil has allowed them to postpone before they contemplate joining any regional arrangement with more advanced economies. First among the pressing needs is the formation of more meaningful regional economic groupings among the Arabs that can create true, dynamic gains in productivity and export performance. Once they succeed in restructuring and re-balancing their economies, they will be ready to join the worldwide movement towards trade and investment liberalization.

PROSPECTS FOR REGIONAL INTEGRATION BETWEEN ESCWA MEMBER COUNTRIES AND ISRAEL

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Introduction

Although regionalism has been criticized in the past as an inferior arrangement to multilateralism, it is now viewed as a solution to the major economic problems of our times.[1] Even such skeptics as Jagdish Bhagwati[2] concludes that the revival of regionalism is likely to endure. Krugman[3] goes further, arguing that it can be accepted as the best option in an age of diminishing expectations. Notwithstanding this favourable view of regionalism, views among economists vary widely concerning its beneficial effects, especially among developing countries.[4]

Whether regional agreements among developing countries will be beneficial to them or not depends, according to the integration literature, on two effects. The first effect is static and short-term in nature. It follows from trade creation, which is welfare enhancing, and trade diversion, which is welfare diminishing. The second is the potential dynamic gains which could follow from greater investment and growth. These dynamic gains have been shown to be more important in magnitude than the static gains.[5]

This paper investigates whether regional integration between the ESCWA member countries and Israel is beneficial and possible or not. Three questions in particular will be addressed: Do the ESCWA member countries and Israel enjoy favourable economic structures that could foster regional cooperation? Are the expected static gains from regional integration larger among the Arab countries or between them and Israel? And finally, are the prerequisites for taking advantage of the dynamic effects of integration

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[1] Jaime de Melo and Arvind Panagariya, "The new regionalism in trade policy", *New Dimension in Regional Integration*, ed. Jaime de Melo and Arvind Panagariya (Cambridge, Massachusetts: Cambridge University Press, 1995).

[2] Jagdish Bhagwati, "Regionalism versus multilateralism: an overview", *New Dimension in Regional Integration.*

[3] Paul Krugman, "Regionalism versus multilateralism: analytical notes", *New Dimension in Regional Integration.*

[4] Augusto de la Torra and Margaret Kelly, "Regional trade arrangements", IMF Occasional Paper No. 93 (Washington, D.C.: IMF, 1992).

[5] Robert Lawrence, "Preferential trading arrangements: the traditional and the new", *Regional Partners in Global Markets,* ed. Ahmed Galal and Bernard Hoekman (London: ECES, 1997); and John Page and John Underwood, "Growth, the Maghreb and the European Union: assessing the impact of the free trade agreements on Tunisia and Morroco", ECES Working Paper No. 7 (Cairo: 1996).

satisfied, or in other words, is the materialization of these effects likely to occur and is it feasible or not?

Given the shortcomings of most generalizations, and the difficulty of studying the prospect of trade relations between each of the ESCWA member countries individually and Israel, the paper attempts to answer the above questions by focusing only on the relationship between the Mashreq countries–defined here as Egypt, Jordan, Lebanon, the Syrian Arab Republic and the Palestinian Authority–and Israel. It is also assumed that political peace is a precondition of any form of economic integration that includes Israel. It should be noted, however, that peace on its own does not ensure economic integration or cooperation. The latter depends on the expected static and dynamic effects.

The paper is divided into four sections including the conclusion. Section I offers a brief contrast between the Mashreq economies and that of Israel, highlighting whether the countries under study have supportive conditions that would enhance regional cooperation. Section II provides a detailed analysis of the possible static effects, focusing on trade relation potentials within the Mashreq countries themselves and between these countries and Israel. The impact of regional integration on investment and growth will be tackled in section III. The main topic of this section is whether the realization of the dynamic gains is likely and feasible or not. Section IV concludes the paper.

I. THE ECONOMIES OF THE MASHREQ COUNTRIES AND ISRAEL

In an attempt to investigate whether the countries under study have favourable and supportive structures that would enhance regional cooperation, the present section attempts to highlight the aspects of complementarity and competition between the Mashreq countries and Israel. Complementarity and competition are important in exploring the static effects of regional integration. Viner[6] suggests that the more competitive (the less complementary) the economic structure of the member countries, the greater the chance is that integration will increase welfare. This proposition reflects the assumption that countries with similar production structures will tend to replace domestic goods by competing imports from partner countries following the establishment of a customs union, while differences in the production structure within the union lead to the substitution of partner country products for lower-cost products originating in non-member countries.

Three criteria will be used to identify the degree of competitiveness or complementarity between the countries under-study: the economic structure and level of development, the profile of the manufacturing sector, and the export commodity composition.

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[6] Jacob Viner, "The customs union issue" (New York: Carnegie Endowment for International Peace, 1950).

A. ECONOMIC STRUCTURE AND LEVEL OF DEVELOPMENT

Since the early 1990s, most of the Mashreq countries have embarked on comprehensive stabilization and structural reform programmes which entail a shift towards a market-based, outward-oriented economy, in which the private sector is expected to play the leading role. Notwithstanding these reforms, the Israeli economic outlook still remains different from that of most Mashreq countries, with it being more akin in its economic structure and degree of industrialization to the more advanced economies.

TABLE 1. STRUCTURE OF GDP, 1995
(Percentage)

	Agriculture	Industry	Of which manufacturing	Services
Egypt a/	15.9	27.9	18.5	56.2
Jordan a/	5.7	28.2	13.2	66.1
Lebanon a/	7.2	23.7	9.1	69.1
Syrian Arab Republic b/	30	22	7.2	48
West Bank, Gaza Strip c/	39.5	8	..	52.5
Israel d/	5	38.3	25	56.7

Note: Two dots (..) indicate that data are not separately reported.

a/ The World Bank, *World Tables*, 1995.
b/ UNDP, *Human Development Report, 1996.*
c/ Israel, Central Bureau of Statistics (1994).
d/ Israel, Ministry of Industry and Trade, "The Israeli economy at a glance", Israel data for the year 1995.

The Israeli economic structure differs considerably from that of the Mashreq countries. The share of the industrial sector (extractive and manufacturing) in GDP in Israel is 38.3%, almost double its corresponding average in the Mashreq countries (22%). For the Mashreq countries, the average share of the agriculture sector is 20% of GDP, nearly fourfold its level in Israel (5%). In addition, it is noteworthy that the share of the industrial sector in GDP in most of these countries is fairly similar.

Israel's 1994 GDP was $78 billion, roughly equal to the total GDP of $83 billion for the five Mashreq countries combined. As a result of its limited population size (5.4 million), Israel's per capita GNP ($13,920) is far ahead of any other country in the region and is nearly 10 times the average per capita GNP in the Mashreq countries, where it stands at $1,356. On the other hand, differences in per capita GNP among most of the

Mashreq countries are not highly significant. The *World Bank Development Report* for 1996 classified the Mashreq countries among the lower-middle income economies.[7]

TABLE 2. SELECTED ECONOMIC INDICATORS

	GDP at Current prices, (billion US$) 1994	Average growth rate, 1991-1994 (percentage)	Population 1994 (millions)	GNP per capita, 1993 (US$)	HDI, 1993	Per capita GDP (PPP) Rank minus HDI rank a/ 1994
Egypt	51.7	1.1	57.6	660 b/	0.611	-30
Jordan	6.1	7.4	4.3	1190	0.741	-1
Lebanon	8.5	14.4	3.9	2670	0.664	10
Syrian Arab Republic	15.2	6.8	14.2	1060	0.690	-19
West Bank, Gaza Strip	1.3	..	1.9	1200	..	..
Israel	77.8	6.2	5.4	13.920	0.908	4

Sources: ERF, *ERF Indicators, Economic Trends in the MENA Region* (Cairo, 1996); UNDP, *Human Development Report 1996.*

Note: Two dots (..) indicate that data are not available.

a/ A positive figure shows that the human development index (HDI) is better than the real GDP per capita (PPPs) rank; a negative figure indicates the opposite.

b/ According to official Egyptian figures, per capita GNP in Egypt was estimated at $1,060 in 1997.

During the period 1991-1994, the average real growth rate in the Mashreq countries was 7.4%, exceeding that of Israel (6.2%). However, the Israeli growth rate picked up to 8% in 1996. Egypt had close to 5% growth in 1996.

The technological base in most Mashreq countries is extremely weak. During the period 1986-1992, average expenditures on R&D in Egypt amounted to only 0.05% of GDP. In contrast, technological development in Israel is far ahead, with expenditures on R&D representing 3% of GDP. This ratio is even higher than that of many advanced industrialized economies.[8]

[7] According to official Egyptian figures, estimated per capita GNP was US $1,060 in 1997.

[8] Samiha Fawzy, " The Egyptian-Israeli trade relations: a future perspective", *Economic Cooperation in the Middle East: Prospects and Challenges,* ed. Hanaa Kheir-El-Din, Proceedings of conference held at the Economics Department, Faculty of Economics and Political Science, Cairo University, 4-16 May 1994.

Israel is also distinguished in terms of human development, and has the highest human development index (HDI) in the region (0.908), around 30% higher than the average HDI in the Mashreq countries (0.676). It is noteworthy that differences between Israel and the Mashreq countries are more apparent when economic indicators are used rather than the human development indicators. With respect to the Mashreq countries, the level of the HDI is very close; the differences are within a range of 1 to 1.12.

B. THE MANUFACTURING SECTOR PROFILE

The Israeli economy ranks first in the region in terms of the degree of industrialization, with the share of the manufacturing sector reaching 25% of GDP, well above the average of 12% for the Mashreq countries. Egypt, and Jordan behind it are the only countries that exhibit a relatively high level of industrialization compared with other Mashreq countries (table 3), which is expected to influence the opportunities for promoting regional trade in manufacturing goods, as will be discussed in the following section.

The Israeli manufacturing structure is also different from that of the Mashreq countries in many aspects. First, it is more diversified. Secondly, it is dominated by capital industries (36.6%) with a highly sophisticated electronics base. In contrast, the Mashreq countries' manufacturing structures are more concentrated (the Syrian Arab Republic manifests the most concentrated structure, followed by Jordan and finally Egypt) and are mostly dominated by consumer industries (food, textiles and wood), with an average share of between 32% and 54%. In addition, the manufacturing sector structure in the Mashreq countries is somewhat similar: chemicals and food rank first and second in Egypt, Jordan and the Syrian Arab Republic, while textiles ranks third in Egypt and the Syrian Arab Republic and sixth in Jordan.

C. EXPORT COMMODITY COMPOSITION

The composition of Israeli exports differs in many aspects from that of the Mashreq countries. First, it is more diversified; the index of concentration is 0.26 in Israel compared with an average of 0.36 for the Mashreq countries.[9] Secondly, per capita exports in Israel amount to $3,169, which is almost 14 times the average for the Mashreq countries ($227).[10] Thirdly, despite the similarity in the relative importance of broad export groups (agriculture, extractive and manufacturing), there are still many differences in their share and composition. For instance, while manufacturing exports rank first, their share in Israel is 66% higher than the average of 47% in the Mashreq countries. The extractive exports, which rank second, also differ in composition. In the case of the Mashreq countries, they

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[9] The concentration index discriminates more finely between countries which are relatively more concentrated in their export structure. It ranges between 0 and 1, with the latter representing the most extreme concentration. See *ERF, Economic Trends in the MENA Region* (Cairo: Economic Research Forum, 1996).

[10] Calculated from UNDP, *Human Development Report, 1996* and IMF, *Direction of Trade Statistics, 1996.*

include mainly fuel and other minerals, while for Israel they mainly consist of exports of diamonds. Agricultural exports rank third in both Israel and the Mashreq countries, albeit with a higher average share in the Mashreq countries (13%), compared with 3.7% in Israel. Fourthly, the breakdown of manufacturing exports reveals that the differences are not only confined to magnitudes, but involve the nature of the industry as well. In Israel, they are mainly high-tech and capital industries, while in the Mashreq countries they tend to be dominated by consumer industries (textiles and food) and chemicals.

TABLE 3. STRUCTURE OF THE MANUFACTURING SECTOR
(Percentage)

Industry	Syrian Arab Republic	Jordan	Egypt	Israel
Food, beverage & tobacco	28	24.6	21.2	17.5
Textiles & footwear	23.7	4.3	18.8	9.6
Wood & wood products	2.7	3.4	0.5	2.5
Paper & printing	1.1	4.7	5	6.2
Chemicals	28.9	39.8	27.3	18.3
Machinery & electronics	7.8	6.9	11.5	36.6
Others	7.8	16.3	15.7	9.3
Total	100	100	100	100

Source: Azza El-Shinnawy, "The potential for Israeli-manufactured exports to ESCWA member countries: risks and opportunities", *Selected Proceedings of the Expert Group Meeting on Industrial Strategies and Policies [and] Managerial and Entrepreneurial Skills under Conditions of Global and Regional Change*, held 20-23 November 1995 in Bahrain, and organized by ESCWA, FES and ERF (E/ESCWA/ID/1996/2).

In general, it can be said that the Egyptian, Jordanian and Syrian export structures are alike, with the share of food, textile and chemical exports together accounting for 78.5%, 62% and 92% of total manufacturing exports in Egypt, Jordan and the Syrian Arab Republic respectively. However, the share of manufacturing exports to total exports is relatively high in Egypt (64%) and in Jordan (71%), compared with (20%) in the Syrian Arab Republic, which may have important implications for future trade among these countries.

Concerning export destination, three distinct patterns can be observed. First, Israel is primarily dependent on industrialized markets, mainly the United States, the EU and Japan, a phenomenon which is well-justified in light of Israel's export composition and its trade arrangements with the EU, NAFTA and EFTA. Secondly, the EU is the top trading partner of Egypt and the Syrian Arab Republic, importing large amounts of fuel from them. Thirdly, more than 60% of Jordanian and Lebanese exports go to developing countries.

TABLE 4. EXPORT COMPOSITION 1994

Exports	Egypt	Jordan	Syrian Arab Republic	Israel	Lebanon
Total	100	100	100	100	100
Agriculture	11.3	8.9	18.1	3.7	17
Extractive	24.4	19.7	61.3	30.4	0.5
Manufacturing	64.3	71.4	20.6	65.9	35
Food	4.8	9.5	1.4	3.1	
Textiles	25.4	4.4	7.6	5.9	
Wood	0.1	0.2	0	0.1	
Paper	0.5	2	0.1	0.5	
Chemicals	20.3	30.4	10.1	16.6	
Non-metallic mineral products	1.1	3.5	0.6	0.3	0.5
Basic metals	8.7	0.6	0	0.7	
Metallic/manufacturing	3.2	19.9	0.7	35.7	
Others	0.1	0.9	0.1	3	47.5

Source: United Nations, *International Trade Statistical Yearbook*, 1996. World Bank, *Trends in Developing Economies* (Washington, D.C., 1995).

In light of the above, it is apparent that the Mashreq and Israeli economies tend to be complementary, while the Mashreq economies tend to be more competitive among themselves. This suggests that in the short term, the static welfare effects of regional integration may be more beneficial or welfare enhancing among the Mashreq countries rather than among the Mashreq countries and Israel.

The following section explores in detail the potential static welfare effects (trade creation and trade diversion effects), as well as the prospect of promoting intraregional trade. Special focus will be devoted to examining whether the static effects of regional integration are larger among the Mashreq countries, or between them and Israel.[11]

II. TRADE CREATION AND TRADE DIVERSION[12]

It should be noted at the outset that in the absence of special trade arrangements, the potential for promoting either intra-industry trade or inter-industry trade among the

[11]Because of insufficiently detailed data, the analysis will not include either Lebanon or the West Bank and Gaza Strip.

[12]The estimation of trade creation and trade diversion is carried out on a three-digit level. It can be differentiated somewhat further when a detailed distinction is drawn between subgroups.

countries of the region seems fairly limited.[13] A number of studies that forecast trade volumes and patterns in the future have shown that without such arrangements, trade between Arab countries and Israel is expected to be negligible. One of these studies estimated the Israeli export potential to Egypt, Jordan and Lebanon to be $760 million, while exports from the Arab countries were estimated to have a value of $300 million.[14]

TABLE 5. GEOGRAPHICAL DISTRIBUTION OF EXPORTS, 1994

Region	Egypt	Jordan	Syrian Arab Republic	Lebanon	Israel
Total	100	100	100	100	100
Industrial Countries	62.4	9.2	59.8	37.6	72
Of which:					
United States	11.1	1.4	1.7	4.7	30
Japan	1.6	1.2	0.2	1	7
EU	49	5.6	57	20.6	31.3
Developing Countries	35.9	73.2	36	62.4	22.3
Of which					
Middle East	10	43.2	24.6	47.9	0.2
Others	1.7	-	4.2	-	5.7

Source: IMF, *Direction of Trade Statistics Yearbook 1996.*

In the case of establishing a preferential-trade arrangement either within the Mashreq countries or between them and Israel, the expected static welfare impact could depend, according to the customs union theory, on the potential trade creation and trade diversion effects. Trade creation is welfare-enhancing, while trade diversion is welfare-diminishing. Trade creation refers to the new trade or to the larger volumes of trade (trade expansion) that can arise from substitution of trade with neighbours for goods that were previously produced domestically. It implies a shift from a high-cost member to a low-cost member. Trade diversion refers to the geographic shifting of existing trade from a low-cost non-member to a high-cost member. Obviously, the desirability of a preferential-trade arrangement would depend on which of these two effects would dominate.[15]

[13] Intra-industry trade, or two-way trade, refers to exports and imports of the same or very similar goods (goods in the same industry). Inter-industry trade refers to trade (exports and imports) of different goods (goods in different industries).

[14] Axel J. Halbach and others, "Regional economic development in the Middle East", (London: Weltforum Verlag, C/O Hurst and Co., 1995).

[15] One of the shortcomings of the trade creation and diversion effects is that they relate to the supply side of the economy, and hence ignore the demand side.

The relative size of trade-creating and trade-diverting effects depends on three key factors. First, the more competitive the production structure of the member countries, the more room there is for trade creation. Second, the higher the tariff before the formation of a preferential-trade arrangement, the more likely that trade-creating effects will dominate. Third, the lower the external tariffs after the formation of a preferential-trade arrangement the less trade diversion there is, because lower external tariffs offer less scope for the displacement of imports from countries outside the partners.[16]

Empirically, the analysis here of the expected static gains of preferential-trade arrangements supports these theoretical predictions. The study shows that trade creation gains are likely to be larger than the trade diversion effects if a preferential-trade arrangement is implemented among Mashreq countries, while the trade diverting effects seem to outweigh the trade creation gains if trade arrangements are implemented between the Mashreq countries and Israel.

In the following lines, a brief review of the present intraregional trade flows will be presented, followed by a discussion of the potential trade creation and diversion effects.

A. PRESENT REGIONAL TRADE FLOWS

The relative importance of the ESCWA region's trade in manufactured products has grown during the last two decades. Nonetheless, such products represent on average only 21% of total intraregional exports, while energy exports constituted nearly 50% in 1995.[17] This could be attributed to the importance of natural resources for most ESCWA member countries, as well as to their lack of physical and institutional infrastructure, their protective and asymmetric trade regimes, and their low degree of openness. Although this figure is not very promising, the fact that the ESCWA region absorbs less than 1% of the world's industrial exports reveals that this region tends to trade more within itself in industrial products, as revealed by the trade intensity index between the Mashreq countries and the Middle Eastern countries.[18]

Three quarters of the manufactured exports are concentrated in the following groups: chemicals (38%, in particular from Jordan), machinery and transport equipment

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[16] Viner, op. cit.

[17] Jamal, Zarrouk, "Intraregional trade in industrial products: past trends and future prospects", *Selected Proceedings of the Expert Group Meeting on Industrial Strategies and Policies [and] Managerial and Entrepreneurial Skills Under Conditions of Global and Regional Change*. Organized by ESCWA, Friedrich Ebert Foundation (FES), and the Economic Research Foundation for the Arab Countries, Iran and Turkey, held in Bahrain 20-23 November 1995 (E/ESCWA/ID/1996/2).

[18] The trade intensity index (TII) determines whether the value of trade between two parties is greater or smaller than what would be expected on the basis of their importance in world trade. Values below unity indicate that trade between two countries is lower than expected, while values above unity indicate it is relatively larger. The TII is 6 for Jordan, 5.8 for the Syrian Arab Republic, 4.1 for Egypt, and finally 0.31 for Israel. See Alexander J. Yeats, "Export prospects of Middle Eastern countries: a post-Uruguay Round analysis". World Bank, International Trade Division, 1995.

(19%, Jordan and Lebanon are the main exporters), textiles (10%, from Egypt, Lebanon and the Syrian Arab Republic) and metal manufactures (9%, Egypt and Lebanon are the main exporters).[19] Lebanon is the largest Mashreq country exporting to the region (48% of total manufacturing exports), followed by Jordan (43%), then the Syrian Arab Republic (25%), and finally Egypt (10%). Israel's regional trade is very low, with just 0.2% of its total exports going to the region, mainly Egypt (table 5). Although Israel's internal trade with the Palestine Authority is considerable (almost 85% to 90% of the latter's imports come from Israel and two thirds of their exports go to Israel), it is not reflected in the trade statistics.[20]

It is clear that domestic trade policies in both the Mashreq countries and Israel are still more inward-oriented than many other parts of the developing world, which partially explains the limited regional trade at present, and which may further discriminate against the promotion of regional trade in the future. Moreover, as a result of the product-by-product nature of the existing bilateral trade agreements, only a limited number of manufactured products are candidates for intraregional trade. These agreements are therefore unlikely to benefit the countries involved.

B. TRADE CREATION

Table 6 reveals that on average the export similarity indices among Mashreq countries (measured for both total and manufactured exports) amount to nearly 23% and 17% respectively.[21] A level higher than the corresponding average export similarity indices between Mashreq countries and Israel, which was estimated at 12% for both total and manufacturing exports. With respect to Mashreq countries, the export similarity indices (for manufacturing exports) could be ranked as follows: Egypt-Syrian Arab Republic, followed by Egypt-Jordan, and finally Jordan-Syrian Arab Republic.[22] As for Mashreq countries and Israel, the export similarity indices (for manufacturing exports) for each of the Mashreq countries and Israel indicate higher value between Jordan-Israel, followed by Egypt-Israel, and finally between Syrian Arab Republic-Israel.

In sum, one can argue that in the short run, intra-industry trade and trade creation possibilities seem to be wider within the Mashreq countries than between them and Israel. In fact, these potentials are not only justified by the similarity of economic and industrial

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[19] Zarrouk, op. cit.

[20] Halbach and others, op. cit.

[21] The export similarity index is defined as a measure of the similarity of the exports of any two countries to the world market in general or to a specific third market. Calculated at the three digit level. See David Greenaway and Chris Milner, "Trade and industrial policy in developing countries: a manual of policy analysis" (London: The Macmillan Press Limited, 1993).

[22] The high manufacturing export similarity index for the Syrian Arab Republic and Egypt is due to the high share of food, textiles and chemical exports in total manufacturing exports (78% in Egypt and 92% in the Syrian Arab Republic), while the higher total export similarity index is due to the importance of oil exports in the two countries.

structures and hence by export similarity, but also by close income levels. Closer per capita income level–as revealed in table 1–and hence the likely similarity of demand pattern between Mashreq countries, may also stimulate more intra-industry trade.[23] Furthermore, the present high pre-union tariff levels against future members suggest a broad scope for trade-creating benefits after the establishment of a preferential-trade arrangement.

TABLE 6. EXPORT SIMILARITY INDICES
(Percentage)

Countries	Similarity indices total exports	Similarity indices, Manufacturing exports
Israel-Egypt	10.85	11.00
Israel-Jordan	17.76	18.45
Israel-Syrian Arab Republic	7.33	5.99
Egypt-Jordan	11.66	14.98
Egypt-Syrian Arab Republic	44.98	23.20
Syrian Arab Republic-Jordan	12.92	12.97

Source: Calculated.

In addition, table 7 indicates that with regard to intra industry trade among Mashreq countries, there are more possible candidates between Egypt and Jordan than between Jordan and the Syrian Arab Republic, while these are relatively limited between Egypt and the Syrian Arab Republic. Differences of intra industry possibilities from the export similarity indices' results could be explained in light of two factors. On the one hand, the larger possibilities for intra industry trade between Egypt and Jordan is due to the relatively high share of the manufacturing sector in GDP (19% and 13% in Egypt and Jordan respectively, and also to the low and close export concentration index in Egypt (0.36) and in Jordan (0.33). On the other hand, the limited number of candidates for intra-industry trade between Egypt and the Syrian Arab Republic–despite their high export similarity index–could be attributed to the low share of the manufacturing sector in GDP (7%) and the relatively high export concentration index (0.59) in the Syrian Arab Republic (ERF Indicators, 1996). The obvious candidates for intra-industry trade among Mashreq countries are concentrated in the following broad product groups: textiles, clothing, leather, footwear, and travel goods; chemicals, especially fertilizer; metal and plastic products; and machinery and transport equipment.

From the preceding, it is apparent that there is great room for intra-industry trade among Mashreq countries, especially since the share of manufactured exports in total

[23] S.B. Linder, *An Essay on Trade and Transformation* (New York: Wiley, 1961).

industrial exports in the region has been increasing lately. The latter is a result of export diversification, the move towards downstream industries, and the increase in the number of manufactured products with high revealed comparative advantages. It is worth noting that Mashreq countries' products with revealed comparative advantage (RCA) have increased, albeit with different scores. Egypt has an RCA for 18 products, Jordan for 9, and the Syrian Arab Republic for 8 products. However, fostering intra-regional trade requires the fulfilment of certain prerequisites, as will be illustrated in section III.

TABLE 7. CANDIDATE INDUSTRIES FOR INTRA-INDUSTRY TRADE,* 1994

Egypt-Jordan	Egypt-Syrian Arab Republic	Jordan-Syrian Arab Republic
523	551	523
531	554	531
541	651	541
562	653	554
591	658	562
651	665	591
658	677	691
664	684	653
665	893	842
684		843
691		845
697		
812		
821		
842		
843		
845		
893		
18 industrial groups	9 industrial group	11 industrial group

Source: Calculated. See annex for definition of industrial groups.

* Industrial groups which appear simultaneously in each pair of countries' export and import lists.

In terms of trade creation among the Mashreq countries, which could take place at a more advanced stage, the RCA index can provide some rough insights about the opportunities of trade creation.[24] According to table 8, Egypt can specialize in soap and

[24]The revealed comparative advantage (RCA) index of country i for product j is measured by the item's share in the country's exports relative to its share in world trade. If the value of the RCA is less than unity, this implies that the country has a revealed comparative disadvantage. Similarly, if the index exceeds unity, the country has a revealed comparative advantage in the item. See Yeats, op. cit.

cleansing products, aluminium products, textile yarn, cotton fabrics, floor cover, essential oils, iron and steel products and aircraft. Jordan could be the main supplier of medicinal pharmaceutical products, fertilizers, inorganic chemicals, cement and building products, basic metallic household equipment, footwear, and printed material. The Syrian Arab Republic is likely to specialize in perfumery and cosmetics, woven textile clothing and accessories.

Besides intra-industry opportunities and trade creation possibilities, cooperation between Mashreq countries could also take the form of joint ventures, especially in the textiles and clothing industry, the fertilizer industry and the petroleum-based chemical and plastic industries. The fact that the latter requires sizeable capital investment could make multi-country regional investment in jointly owned plants an attractive option.

At a later stage, if Israel joins the Mashreq countries' trade arrangements, there seems to be some chance for intra-industry trade between Israel and the Mashreq countries, particularly in such areas as textiles and clothing, fertilizers, chemicals and rubber products. However, the RCAs for most of these products are higher in the Mashreq countries, which limits the possibility of the displacement of the Arab products by Israeli products. There seems to be greater room for future trade creation and hence inter-industry trade between the two parties, because of the complementarity between them. Table 9 illustrates that Israel can specialize in industrial goods with higher RCAs than those calculated for the Mashreq countries, for example: machinery, electronic products, transport equipment, telecommunications, inorganic chemicals, furniture, plastic products, and gold and silver jewelry. Israel could possibly participate in some of the suggested regional projects, particularly in such areas as clothing and textiles, chemical, and pharmaceuticals industries

C. TRADE DIVERSION[25]

With respect to trade diversion potentials, table 10 points to larger trade diverting effects in the case of any preferential-trade arrangement between the Mashreq countries and Israel, compared with the situation of any such arrangement among just the Mashreq countries. This could be attributed to the complementarity between the production and trade structures of the Mashreq countries and Israel.

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[25] Maximum trade diversion = Minimum (Nxaj, Nxbj), where: NXaj=Xaj-Maj>0 and NXbj=Xbj-Mbj<0 and NX=Net exports and (i)=Country (a) or (b) and (j)=Commodity and Xij=Exports of country (i) of commodity (j) and Mij=Imports of country (i) of commodity (j). The trade diversion index assumes that one of the two countries (a) is a net exporter, while the other country (b) is a net importer, and that trade diversion is equal to the smaller value of either net imports or net exports.

TABLE 8. TRADE CREATION: POSSIBLE PATTERN OF SPECIALIZATION FOR MASHREQ COUNTRIES, ACCORDING TO REVEALED COMPARATIVE ADVANTAGE, 1990-1992

Product Group*	Egypt	Jordan	Syrian Arab Republic	Israel
513	0.59	4.50	0.02	3.14
541	0.15	3.45	0.01	0.58
551	3.06	0.04	0.04	1.03
553	0.25	0.21	0.51	0.49
554	0.83	0.46	0.28	0.44
561	4.92	83.84	0.01	10.82
651	15.35	0.11	2.16	1.47
652	8.78	0.17	2.55	0.74
653	0.29	0.12	1.69	0.86
661	0.50	65.8	7.99	0.09
674	4.04	0.08	0.06	0.00
678	0.95	0.12	0.01	0.04
684	9.09	1.54	0.02	0.63
697	0.73	1.74	0.90	0.26
734	5.52	3.16	0.24	1.88
842	0.04	0.04	3.84	0.12
851	0.25	0.47	0.23	0.20
892	0.42	0.63	0.25	0.46

Source: Calculated from Alexander J. Yeats, "Export prospects of Middle Eastern countries: a post-Uruguay Round analysis". World Bank, International Trade Division, 1995. See annex for definition of industrial groups.

* Product groups which are produced and exported in each country, but which have different RCA levels.

Table 10 reveals that in the case of a preferential-trade arrange-ment between the Mashreq countries and Israel, trade diversion to Mashreq countries will be larger than trade diversion to Israel. Total redirection of trade from Mashreq countries to Israel is $1,203 million, while it amounts to only $587 million from Israel to the Mashreq countries. In this case, Egypt would be the Mashreq country to suffer most from trade diverting effects, followed by Jordan and finally by the Syrian Arab Republic, which is expected to suffer the least.[26] These results are in conformity with a previous study which estimated the redirection of trade from Arab States to Israel to be nearly $2,200 million, covering fertilizers, rubber goods, textiles, machine tools, inorganic chemicals, generators,

[26] The trade redirection potential from Israel to Lebanon was estimated at $130 million (mainly machinery, fruits and vegetables, and clothing).

office machinery, electronics, communications technology and medical products. Conversely, the redirection of trade from Israel to the Arab States was estimated to be $1,000 million–in petrochemicals, textiles, cotton, metals and other chemical products.[27] In an another study, the World Bank found that if a preferential-trade arrangement including Israel, Jordan and the Palestinian Authority were formed, the latter's trade with Israel would eventually decrease, while its trade with Jordan and Egypt may increase. The Palestinian Authority would be expected to divert a considerable share of its imports from Israel to these two countries.[28]

Trade diversion, in the event of the formation of a preferential-trade arrangement among Mashreq countries, is expected to be limited, amounting to only $336 million, since most Mashreq countries are already likely to be producing and importing similar goods. Jordan would be the most injured by trade diverting effects, followed by the Syrian Arab Republic. Egypt would be the country least harmed. The highly sophisticated Egyptian imports cannot be substituted by Jordanian or Syrian exports.

Consequently, it can be concluded that if a preferential-trade arrangement were established among the Mashreq countries, the trade creating effects would surpass any trade diverting effects, and that there would also be a high likelihood of intra-industry trade. Three reasons underlie this conclusion: the similarity in manufacturing structures, the similarity in export commodity composition, and close per capita income levels. On the contrary, under a preferential-trade arrangement between the Mashreq countries and Israel, trade diversion effects would be expected to outweigh any trade creation gains, owing to the complementarity between the Mashreq countries and Israel. Potential trade between the two parties could take the form of inter-industry trade.

Despite these results, there is a growing consensus that dynamic gains are more important than static gains in stimulating regional blocs and in determining the net welfare effects. The main drawback of the static approach is that it relies on the existing trade patterns as a sole indicator for predicting potential gains, and hence only focuses on the immediate, once-and-for-all effects of regional arrangements. The following section will investigate whether there is any realistic chance that the countries under study could achieve dynamic gains, especially (as mentioned before) since many economists are skeptical about the developing countries' capacity to benefit from the dynamic benefits associated with regional integration.

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[27] Halbach and others, op. cit.

[28] Nadav Halevi, "Trade prospects in the triad", Middle East Economic Strategy Groups of the US/Middle East Project, the Council of Foreign Relations, United States of America, 1996.

TABLE 9. TRADE CREATION: ISRAEL'S POSSIBLE PATTERN OF SPECIALIZATION ACCORDING TO REVEALED COMPARATIVE ADVANTAGE, 1990-1992

Product Group*	Egypt	Jordan	Syrian Arab Republic	Israel
512	0.12	0.31	0.01	2.59
514	0.13	3.65	0.20	7.53
571	0.90	0.00	0.00	3.79
581	0.08	0.12	0.06	1.59
599	0.73	0.25	0.01	1.51
621	0.10	0.06	0.01	1.52
629	0.05	0.66	0.01	1.48
695	0.14	0.07	0.12	4.90
726	0.02	0.14	0.03	4.70
821	0.41	0.13	0.16	0.64
893	0.19	0.36	0.10	1.87
894	0.02	0.09	0.04	1.87
897	0.14	2.43	0.10	9.87

Source: Calculated from Alexander J. Yeats, "Export prospects of Middle Eastern countries: a post-Uruguay Round analysis". World Bank, International Trade Division, 1995. See annex for definition of industrial groups.

* Product groups which are produced and exported in each country, but which have different RCAs.

TABLE 10. POTENTIAL OF TRADE DIVERSION, 1994
(Millions of US$)

	From			
To	Israel	Egypt	Jordan	Syrian Arab Republic
Israel	--	768	293	142
Egypt	350	--	107	74
Jordan	96	32	--	44
Syrian Arab Republic	141	16	63	--

Source: Calculated.

III. DYNAMIC GAINS

This section discusses the potential dynamic or long-term restructuring effects that could materialize if the Mashreq countries and Israel conclude a regional integration agreement.

The most important dynamic effects–as revealed by the literature–could come from investment, economies of scale, stimulation of competition, and technological and productivity improvement.[29]

Regional arrangements are likely to boost domestic and foreign private investment. This is because preferential-trade arrangements could raise the profitability of innovation and could make it easier to source different inputs and to exploit economies of scale. In addition, the binding commitments supported by increasingly harmonized policies and regulations within the region would reduce uncertainty and hence encourage more investment. Empirical evidence from integration experiences–such as the impact of NAFTA on Mexico, and of the EU on Spain and Portugal–shows that the substantial benefit of these schemes came initially from increased investments.[30]

Larger regional markets are more likely to give rise to both internal and external economies of scale. On the one hand, gains from economies of scale internal to the firm would come about through lower costs and hence increased productivity, as firms previously operating at below minimum efficiency could now expand output and move down their cost curves. In this respect, Viner pointed out that economies of scale would accentuate the trade-creating effects of any preferential-trade arrangement. For the countries under study, many industries could benefit from these internal economies. For instance, the chemicals, petrochemicals, textiles, and automobile industries all stand to gain. On the other hand, external economies of scale may also result, for example, when intermediate products that are used in the production of a certain good grow cheaper as a result of internal economies of scale in the industry producing the intermediate goods. Similarly, integration may cause producers of final goods to grow, which would positively affect the growth of the supplying industry as well. Seev Hirsch illustrated that regional trade between Mashreq countries and Israel could be promoted through trade based on input sharing, especially between Jordan and Israel and to a lesser extent between Israel, Egypt and the Syrian Arab Republic. The industries which could benefit from trade in inputs include food, textiles, clothing, construction and ceramics.[31]

A third dynamic effect frequently mentioned is that regional agreements are likely to stimulate competition. Intensified competition has a positive effect on production by

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[29] Dynamic effects also include the terms of trade effects and factor price equalization. See De La Torra and Kelly, op. cit.

[30] Page and Underwood, op. cit.

[31] Seev Hirsch, et al., "Arab-Israeli potential trade: the role of input sharing", unpublished manuscript, Tel Aviv University, 1996.

allowing efficient producers in each member country to compete directly with the most efficient producers in other member countries–and even if cartelization and other market structures prevent perfect competition, it is likely that new structural relationships would be made on the basis of the new larger market area and thus would be less inward-looking and more efficient than in the pre-union situation.

Several studies have shown that regionalism would probably improve technological acquisition and innovation.[32] This could be attributed to many forces. For example, regional arrangements entailing the harmonization of policies and regulations would increase FDI flows, and hence permit the transfer of the best practices and production techniques. The volume of exports would increase, and there would be improvement in cost discipline and innovation arising from increased competition.

However, although regional integration could have many positive dynamic effects, it is not a panacea. Economists' views vary widely about the developing countries' capabilities to realize these dynamic effects.[33] Empirical evidence suggests that certain conditions need to be present to ensure the materialization of such effects on growth. The following sections examine whether or not the countries under study enjoy the prerequisites that make dynamic gains likely and feasible.

A. ARE DYNAMIC EFFECTS LIKELY?

Recent regional experiences point out that countries can benefit from regional integration schemes if they are relatively more open and export-oriented, if the private sector plays a catalytic role in growth, and finally if countries enjoy international credibility and competitiveness.[34] In the case of both the EU and NAFTA, openness preceded regionalism, and the private sector did play an active role in their deepening. Credibility was also cited as an important stimulus for investment and competition in the two blocs.

In the case of the Mashreq countries and Israel, several new circumstances seem to suggest an increasing opportunity to benefit from these dynamic gains. The economic reform programme applied in most countries, the external binding commitments (WTO and the EU partnership agreements), and the change in the public-private partnership offer the region a unique chance to turn the potential dynamic gains into reality.

- **Openness:** Since the mid-1980s, most of the countries under study have made significant progress, albeit at different paces, towards trade liberalization. The openness package entailed initially a shift from inward-oriented development policies towards a set of outward-oriented policies including: the elimination of tariff and non-tariff barriers; the liberalization of foreign exchange controls on current account

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[32] Page and Underwood, op. cit.

[33] De Melo and Panagariya, op. cit.

[34] Lawrence, op. cit.

transactions;[35] and efforts to join multilateral and regional trade liberalization. At present, Egypt and Israel are full members of WTO, Jordan is currently in the accession process, and Lebanon and the Syrian Arab Republic are expected to follow suit. Jordan, Israel, Lebanon and the Palestinian Authority have signed partnership agreements with the EU. Egypt is close to signing, and the Syrian Arab Republic is still in the negotiation phase.

Although these efforts toward more openness are likely to help in ensuring the efficient allocation of resources, in promoting domestic competition and in stimulating rapid foreign capital inflows, the pace of trade reform remains slow. The Mashreq countries and Israel remain highly protective, both in absolute terms and relative to developing countries. This partially explains the present low level of regional trade and also may work against attempts to promote regional cooperation in the future. The average unweighted tariff levels are 24% in Mashreq countries and 10% in Israel, above the corresponding figure (7%) for East Asian economies.[36] The average tariff revenue as a share of imports, which is more indicative than the level of tariff, is nearly 16% in Mashreq countries, compared with almost 5% in East Asian economies.[37] Moreover, the average range between effective rates of protection and levels of nominal protection is still large in both Mashreq countries and Israel. Without deep and rapid trade liberalization measures, the countries in question would not be able to benefit fully from the potential dynamic gains.

- **Credibility**: The success of reform programmes has improved the countries' credit and competitive rating worldwide. According to Moody's and Standard & Poor– which are mostly concerned with a country's creditworthiness–Israel was assigned an A rating, Egypt a BBB rating, and Jordan a BB rating.[38] Moreover, the *Global Competitiveness Report*–which helps measure each country's prospects for economic growth over five to ten years—assigns the positions 24, 28, and 29 to Israel, Egypt and Jordan respectively, out of 49 countries which were covered. Considering that out of these 49 countries almost 25 are OECD economies, this is a quite good position.[39]

Increased credibility resulted from many factors, the most important of which are the financial stabilization programmes implemented (the public deficit has shrunk, inflation rates have been fairly restrained, the current account deficit has been controlled), the reduction in the debt-service burden, and the external binding commitments. A key

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[35] Egypt, Israel, Jordan and Lebanon have convertible domestic currencies at the time of the present writing.

[36] The ranking of Mashreq countries according to their unweighted tariff levels is as follows: the Syrian Arab Republic 15%, Jordan 28%, and Egypt 30%. The low level for the Syrian Arab Republic can be explained by the use of other external taxes as a substitution (unpublished UNCTAD data, 1996).

[37] Bernard Hoekman, "The World Trade Organization, the European Union, and the Arab world: trade policy priorities and pitfalls", World Bank Policy Research Working Paper, Washington D.C., 1995.

[38] An A rating indicates above-average ranking, a triple B rating indicates average ranking, and a double B rating indicates risky investment opportunities.

[39] World Economic Forum, *The Global Competitiveness Report.*

benefit of both WTO and EU partnership is their potential role as a device to ensure commitment by harmonizing the concerned countries' domestic laws and standards with international norms. Binding commitments that are supported by increasingly harmonized policies and regulations within the region will reduce uncertainty and with it the risk premiums demanded by investors. Furthermore, the Association Agreements with the EU are expected to increase the motivation for regional integration among partner countries, which would allow them to benefit from the cumulation of rules of origin and which would also help them to overcome the "hub and spoke" phenomenon.

- **Public-private partnership**: One of the most promising aspects of the economic reform programmes in Mashreq countries and Israel involves the new roles assigned to the Government and to the private sector. Under this partnership, the Government is to play the role of facilitator, and the private sector is expected to act as a catalyst for growth. This new partnership should have positive implications for the realization of potential dynamic gains, the rationale being that State dominance and inefficient public involvement in the productive activities are recognized as a main constraint to the promotion of intraregional trade.

To fulfil their new role, most Governments have become involved in public budget restructuring and in privatizing State-owned enterprises (SOEs) and some areas of infrastructure.[40] Despite these efforts, however, the size of Government during the period 1991-1995 remained considerable in the countries under study, compared with East Asian countries. On average, government expenditures as a percentage of GDP in the Mashreq countries and Israel were 30% and 27% respectively, whereas in the rapidly growing economies it ranged between 16% and 22%.[41]

The changing public-private partnership will probably have many positive implications. Governments will be relieved of carrying out productive activities, freeing up their human and capital resources to concentrate greater on the fundamentals: better design of macroeconomic policies; greater protection of property rights; better enforcement of contracts, along with ensuring that effective mechanisms for dispute settlement are in place; and more efficient execution of their social tasks. Moreover, they will be better able to provide the necessary hard and soft infrastructure that was highlighted in many studies as a precondition for successful regional integration.[42]

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[40] Important examples of privatization of utilities are found in Egypt (power), Jordan (telecommunications), Lebanon (telecommunications and power), and the West Bank and Gaza Strip (water); ERF, *ERF Indicators, Economic Trends in the MENA Region* (1996); UNDP, *Human Development Report 1996.*

[41] Jeffrey Sachs, "Achieving rapid growth: the road ahead for Egypt", ECES Distinguished Lectures Series, Cairo, 1996.

[42] Hard infrastructure includes transportation and communication networks, ports, power generation and water management facilities, and soft infrastructure involves greater investment in human resources (education and training), in deepening the technological base, in information dissemination, and in harmonization of standards and specifications. See Heba Handoussa, " A new manufacturing strategy for Arab countries: competing in the global market", *Selected Proceedings of the Expert Group Meeting on*

In addition, greater openness and credibility will most likely increase the region's attractiveness to both the domestic and foreign private sector. Increasing the participation of the latter could widen the spectrum of regional cooperation. It is expected that greater involvement of the private sector would improve productivity, increase non-traditional exports and attract complementary foreign direct investment. The prospects for further expansion in non-traditional exports in the region are very promising. These include food processing, fertilizers, cosmetics, plastic, rubber and various types of capital goods and durable consumer goods. In addition, a larger regional market would further enable the private sector to enter into new industrial downstream niches, such as special metals, micro-electronics and software. Moreover many industries–for example petrochemicals, fertilizers, textiles and clothing, metal products (aluminium) and consumer durable goods– could enjoy a higher degree of capacity utilization or could take advantage of economies of scale. Finally, the possibility of private involvement in regional infrastructure projects would serve as a motivation to establish regional arrangements (since the present lack of infrastructure is considered one of the most critical impediments to regional cooperation).

In the light of all the above, it is evident that while the economic reforms undertaken in the Mashreq countries and Israel increase the possibility that dynamic gains attributed to regional integration could materialize, they are not enough. These countries must concentrate on speeding up the pace of reform (especially the trade liberalization process), eliminating the existing infrastructure obstacles, and coordinating their macroeconomic policies. Furthermore, economic reforms are not in themselves sufficient to ensure the materialization of the desired long-term effects. Other conditions must be fulfilled as well; these will be further elaborated hereunder.

B. ARE DYNAMIC GAINS FEASIBLE?

Assuming that domestic reform efforts are speeded up in a way which makes dynamic gains likely, does this ensure the feasibility of these gains? The answer is: not necessarily. Two additional conditions are indispensable to render regional integration feasible: a fair distribution of the gains among the parties, and favourable behaviour of the key agents or relevant groups with regard to regional integration.

Distribution of the gains: The absence of an efficient mechanism for distributing the gains from regional integration would erode the feasibility of such integration to the extent that one party or another believes that the gains will accrue only to the other party or parties. This is truly a concern, since there are two contradictory views on the matter. One view holds that regional integration between countries at different levels of development may reflect a hegemonic power relationship. Mahmoud Abdel-Fadil holds that integration between Arab countries and Israel would probably lead to the restructuring

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Industrial Strategies and Policies [and] Managerial and Entrepreneurial Skills Under Conditions of Global and Regional Change. Organized by ESCWA, Friedrich Ebert Foundation (FES), and the Economic Research Foundation for the Arab Countries, Iran and Turkey, held in Bahrain 20-23 November 1995 (E/ESCWA/ID/1996/2).

of the division of labour within the region for the benefit of Israel.[43] Another view is that regional integration would favour Arab countries at the expense of Israel, given that less developed countries are likely to benefit more from regional integration. In this regard, Sachs contends that poorer countries, if they pursue the right reform programmes, would have the chance to converge with the more developed members in per capita income levels.[44] However, both views are extreme and may not be valid. On the one hand, the fear of Israel's technological dominance may no longer be tenable, especially since most Mashreq countries have or are in the process of concluding free-trade agreements with countries that are more advanced than Israel. Moreover, most of them are in the process of opening their markets multilaterally. On the other hand, the fact that the Arab countries may enjoy greater gains than Israel does, does not necessarily mean that these gains will be at the expense of Israel. In other words, regional integration could create a positive-sum game in which all actors gain, including Israel. Moreover, in some cases it may be possible to devise compensation mechanisms so that the winner (at the level of a country, sector or even firm) could compensate the loser to the benefit of all.[45]

Behaviour of relevant groups: Feasibility also depends on the behaviour of three key relevant players or agents.[46] The first group of players are the *Governments of member countries.* In particular, it has been argued elsewhere that politicians will only support reform, including efforts to integrate, if the benefits of such schemes to them and their supporters outweigh the costs, and if they are able to secure the approval of the public.[47] In the case of the Mashreq countries and Israel, three forces may persuade Governments to move toward regional integration. First, the (it is hoped) successful resolution of the Arab-Israeli conflict will reduce domestic opposition to regional integration. Second, as peace is reached, Governments are likely to rely more on the economic benefits from integration to boost growth and job creation as a basis for their legitimacy, or in other words to secure the support of the citizens. Third, the increasing role of the private sector in these countries is also likely to increase citizens' incentives to pressure their Governments to move toward more integration. The second group of players are the *interest groups in member countries.* It may be expected that those who benefit

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[43] Mahmoud Abdel-Fadil, "Issues of economic integration and industrial development in the ESCWA region following the peace settlement", *Selected Proceeding of the Expert Group Meeting on Industrial Strategies and Policies [and] Managerial and Entrepreneurial Skills Under Conditions of Global and Regional Change.* Organized by ESCWA, Friedrich Ebert Foundation (FES), and the Economic Research Foundation for the Arab Countries, Iran and Turkey, held in Bahrain 20-23 November 1995 (E/ESCWA/ID/1996/2).

[44] Sachs, op. cit.

[45] For example, the common agricultural policy (CAP) to compensate farmers and the Structural Funds to compensate whole countries or regions in the EU. See Nemat Shafik, "Learning from doers: lessons on regional integration for the Middle East", *Economic Cooperation in the Middle East: Prospects and Challenges*, ed. Hanaa Kheir-El-Din, Proceedings of the Conference held at the Economics Department, Faculty of Economics and Political Science, Cairo University, 4-16 May 1994.

[46] Bhagwati, op. cit.

[47] Ahmed Galal, "Incentives for economic integration in the Middle East: an Egyptian perspective", ECES Working Paper Series, No. 5, Cairo, 1996.

from protectionism (bureaucrats, small entrepreneurs and inefficient producers) may act against integration efforts, while those who are likely to gain and profit from the economies of scale and export opportunities offered by a larger regional market would be in favour of regionalism. The feasibility of integration depends on the relative power of the winners and losers, and the capability of the Government to provide the losers with fair compensation. The third group of players are the *Governments and interest groups of outside countries*. This group is likely to oppose regional integration among Israel and the Arab countries to the extent that it deprives their firms of equal access to these markets. However, this opposition may not hold for two reasons. First, countries such as the United States may benefit from a stable and prosperous region, as this ensures the continued flow of oil to them. Second, the creation of a large market may mean better investment opportunities for their multinational firms. As a result, they may seek to join the emerging bloc and may also support regional integration by providing compensation to the losers (whether countries, sectors or groups) or by offering technical assistance and supplying the necessary infrastructure jointly with the member countries. An example of the price such countries are willing to pay for stability in the region is the establishment of the Middle East Bank.

To sum up, the analysis suggests that the dynamic gains from regional integration between the Mashreq countries and Israel are likely and could be feasible. However one critical issue which deserves further study is whether it is more beneficial, in terms of regional potential welfare effects, for the Mashreq countries in particular and for the Arab countries in general to direct their regional integration efforts toward Israel or toward the EU or some other potential regional partners, or whether they should direct their efforts to all.

IV. CONCLUSION

This paper attempted to determine whether the Mashreq countries and Israel have economic structures that could foster regional cooperation, whether the static effects from regional integration are positive and significant, and whether these countries could in fact achieve the potential dynamic gains from integration. Three main conclusions can be drawn from the above analysis.

First, the Mashreq and the Israeli economies tend to be complementary, while the Mashreq economies tend to be more competitive among themselves.

Second, if static gains are the sole criterion for judging the benefit of regional integration between the Mashreq countries and Israel, the analysis concludes that in the event of preferential-trade arrangement being established among the Mashreq countries, the trade-creating effects would surpass any trade diverting effects, and there would likewise be a high possibility for intra-industry trade. Three reasons underlie this conclusion: the similarity in manufacturing structures, the similarity in export commodity composition, and close per capita income levels. On the contrary, in the case of a preferential-trade arrangement between the Mashreq countries and Israel, trade diversion effects are expected to surpass any trade creation gains, due to the complementarity

between the Mashreq countries and Israel. In this case, trade between the two parties may tend to take the form of inter-industry trade. According to this static approach, Arab cooperation is a necessity, as a first step toward wider regional arrangements. Such cooperation would help them benefit from the existing opportunities for promoting regional trade in manufactured goods; would enlarge their capability to reap dynamic gains, which would eventually narrow the development gaps among them as well as between them and Israel or any other regional partners; and finally would increase their bargaining power. It is preferable that the Arab countries, in particular the Mashreq countries, pursue their regional efforts with other partners as a group rather than on a bilateral basis. Maximizing these benefits requires deepening their economic relations, and harmonizing their macro-economic policies.

Third, owing to the limited insights of the static analysis (as it only focuses on the regional integration's impact on trade, while the dynamic analysis is more perceptive since it is concerned with the impact of regionalism on investment and growth), the above conclusion has to be qualified to take into account the potential dynamic gains. In this regard, the paper concludes that recent domestic economic reforms, coupled with the available external bindings, offer the Mashreq countries and Israel a relatively higher, although still not sufficient, chance compared with the past to benefit from the potential dynamic effects. Three conditions are necessary for the countries under study to increase the likelihood of favourable regional integration. First, it is necessary to speed up the pace of economic reform in most countries, in particular with regard to trade liberalization. Second, effort should be made to ensure a fair distribution of the potential gains from integration. Third, an attempt should be made to ensure that the relevant groups or players have sufficient incentives to operate regionally.

In short, there is a possibility for economic gains from regional integration between the Mashreq countries and Israel, especially when the dynamic economic gains are taken into account. However, this possibility of economic gains will remain just that, a possibility, until a peace settlement is reached. However, one critical issue which deserves further study is whether it is more beneficial, in terms of regional potential welfare effects, for the Mashreq countries in particular and for the Arab countries in general to direct their regional integration efforts toward Israel or toward the EU or some other potential regional partners, or whether they should direct their efforts to all.

Annex

INDUSTRIAL GROUPS ACCORDING TO SITC CLASSIFICATION

SITC code	Commodity group	SITC code	Commodity group
511	Hydrocarbons	661	Lime, cement, building products
512	Alcohols, phenols	665	Glassware
513	Carboxylic acids	667	Pearl, precious, semi-precious stones
514	Nitrogen compounds	671	Pig iron, etc.
515	Orgno-inorganic compounds	672	Iron, steel primary forms
516	Other organic chemicals	673	Iron, steel shapes, etc.
522	Inorganic elements, oxides	674	Iron, steel sheets
523	Metallic salts of inorganic acids	677	Rails and railway track construction material
533	Pigments, paints, etc.	678	Wire of iron, steel
541	Medical, pharmaceutical products	684	Aluminium
551	Essential oils, perfume	691	Structures and parts of iron, steel
553	Perfumery, cosmetics	736	Metal working, machine tools
554	Soap, cleansing and polishing preparation	741	Heating, cooling equipment
562	Fertilizers	743	Pumps, centrifuges
582	Plates, sheets, foils and strips of plastics	745	Non-electrical machinery, tools
583	Polymerization Products	749	Non-electrical parts and accessories of machinery
591	Pesticides, disinfectants	821	Furniture and parts thereof
592	Starch, insulin, gluten	842	Men's outerwear not knitted
598	Miscellaneous chemical products	843	Women's outerwear not knitted
625	Rubber tyres, tubes	844	Underwear garments not knitted
641	Paper and paper board	845	Articles of apparel of textile fabrics
642	Paper, etc., precut	846	Underwear knitted
651	Textile yarn	847	Textile clothing
652	Cotton fabrics, woven	851	Footwear
653	Woven or man-made textile materials	872	Medical instruments
655	Knitted, etc., fabrics	874	Measuring, control instruments
657	Yarns and special textile fabric products	892	Printed matter
658	Made-up articles, wholly or chiefly of textile materials	893	Articles of plastic
		897	Gold silverware, jewelry
659	Floor coverings, etc.	899	Other manufactured goods

Part III

THE STATUS OF THE INDUSTRIAL SECTOR IN THE PALESTINE AUTHORITY AREAS

PALESTINIAN INDUSTRIAL DEVELOPMENT AND THE PEACE PROCESS

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Introduction

Recent data published by the Palestinian Central Bureau of Statistics (PCBS) raises doubts about many stylized "facts" about the size and role of the Palestinian industrial sector. These stylized facts have largely been based on analysis of the data compiled and published by the Central Bureau of Statistics (CBS) of Israel. Three broad differences in the importance of the industrial sector in economic activity emerge. First, the PCBS data suggest a larger industrial sector, placing the contribution of the Palestinian industrial sector at 13.3% of GDP in 1994, while CBS data place this contribution at a much lower figure of 8.3% in 1993. Secondly, PCBS data suggest that the West Bank is slightly more industrialized than the Gaza Strip, with GDP shares of 14% and 12% respectively. The Israeli data suggest the reverse, with the Gaza Strip's industrial sector share of GDP standing at 12.1%, against 7.0% for the West Bank.[1] Thirdly, the fraction of employment in the industrial sector is much larger according to the PCBS data (20% in the West Bank and 15.3% in the Gaza Strip) in comparison with CBS data (16.9% in the West Bank and 13.3% in the Gaza Strip).[2] The difference boils down to the estimation of the relative size of industry (and more importantly agriculture) in the West Bank. The PCBS data seem more internally consistent; but data for an additional two years will be required before the differences between the two data sources, as well as the broad characteristics of the Palestinian industrial sector, can be clearly understood.

Whichever characterization of the size of the industrial sector is closer to the truth, the Palestinian industrial sector is substantially below its potential, when compared with the available human resource endowment and when compared with countries at similar levels of development. The educational levels of the Palestinians are among the highest in the region, comparable to those of the advanced middle-income countries[3]. Moreover, the average share of industry in GDP in 1994 stood at 21% for the low-income

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[1] GDP shares are taken from the home page (http:/www.pcbs.org) of the PCBS, while the CBS data are computed from data in CBS, *Statistical Abstract of Israel 1995*, No. 46 (1995), p. 764. Both data points refer to the Gaza Strip and the "remaining West Bank", which excludes the annexed Arab East Jerusalem.

[2] CBS data are for 1993 and were taken from CBS, *Statistical Abstract of Israel 1995*, No. 46 (1995), p. 779. The PCBS data refer to September/October 1995 and are computed from tables 9 and 11 in PCBS, *Labour Force Survey: Main Findings* (September/October 1995), Labour Force Survey Report No. 1 (April) and No. 2 (August), Ramallah, 1996, in order to obtain comparable figures for employment distribution within the Palestinian areas. One difference between the two data sources is that the definition of the West Bank in the PCBS data includes East Jerusalem while the CBS excludes East Jerusalem from their definition of the West Bank.

[3] The average years of schooling for the adult population (15+ years) in the West Bank and Gaza Strip was 8.1 years in 1995.

economies (excluding China and India) and 36% for middle- and upper-income economies.[4]

The policies implemented by Israel since its occupation of the West Bank and Gaza Strip in 1967 are largely responsible for the low overall performance of the Palestinian industrial sector.[5] According to 1991 Sadan Report on economic conditions in the Gaza Strip, "...only rarely did [Israeli] policy opt for the development of infrastructure and encourage the creation of factories and employment within the [Gaza Strip] itself (e.g., the creation of the Erez industrial zone). No priority was given to the advancement of local entrepreneurship and the business sector in the Gaza Strip. Moreover, the authorities frustrate initiatives whenever they threatened to compete in the Israeli market with existing Israeli firms."[6] More specifically, the policies described below have been responsible for keeping the industrial sector below its potential.

- Licensing impediments and regulatory restrictions have been extensively used to prevent the establishment of new firms or products that may potentially compete with Israeli firms.

- The trade regime imposed on the West Bank and Gaza Strip has been the highly protectionist Israeli regime that is driven by the interests of Israeli–and not Palestinian–industry.

- The financial sector has been repressed by the closing down of all Arab banks, preventing any potential financial intermediation to develop the industrial sector. This has resulted in a preponderance of small-scale firms that cannot capture the economies of scale or scope and in projects that are mostly self-financed.

- Underinvestment in public infrastructure has been a major impediment to industrial development. Infrastructure (roads, telecommunications, trade infrastructure, power) was not well maintained, and no major investment in

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[4] World Bank, *World Development Report 1996* (Oxford University Press, 1996). For a good overview of the characteristics and potential of the Palestinian industrial sector, see Mohammed Mahmoud Nasr, "Opportunities and potential of industrialization in Palestine," draft of a document prepared for the Palestine Economic Policy Research Institute (MAS), November 1996. In addition, some recent work on the role of subcontracting in the Palestinian industrial sector has been done by Antoine Mansour and Blandine Destremau. See their "Palestine and Israel: subcontracting relations in the garment industry" (Palestine Economic Policy Research Institute [MAS]: Jerusalem and Ramallah, December 1997).

[5] The World Bank presents a good analysis of how the occupation policies have led to the underdevelopment of the Palestinian industrial sector. See World Bank, "Developing the occupied territories, an investment in peace", vol. 2, *The Economy* (Washington, D.C.: World Bank, 1993).

[6] This quote from the Sadan Report appears in Arie Arnon and others, *The Palestinian Economy from Imposed Integration to Voluntary Separation*, draft of book manuscript, 1997, ch. 4, p. 5. The report was written by a committee headed by the Israeli economist Ezra Sadan and included General Danny Rothschild, the coordinator of the Israeli army in the West Bank and Gaza Strip, and the economic advisor to the Israeli Prime Minister at the time the report was written.

infrastructure took place to serve the Israeli settlements in the West Bank and Gaza Strip.

- The funds generated by heavy taxation by the Israeli army and which accrued to the Israeli treasury were not spent on public services in the West Bank and Gaza Strip. This resulted in substantial fiscal leakage and was a heavy drain on the Palestinian economy. The leakage has several sources: indirect VAT taxes, import taxes, insurance fees on Palestinian workers in Israel, and seigniorage or inflation tax from using the Israeli currency as legal tender. While some forms of the leakage continue to drain the Palestinian economy, most of the leakage has been corrected by the 1994 Palestinian-Israeli economic protocol; the revenue clearance according to procedures established by the economic protocol amounted to 15% of Palestinian GDP in 1996!

This is a good indicator of the level of taxation during the occupation period, the majority of which was not circulated back into public services in the West Bank and Gaza Strip.[7]

Against this background of an underdeveloped industrial sector, a new vision of economic and industrial development emerged at the time of the signing of the Declaration of Principles in September 1993. This vision is elaborated in the following section. Section II identifies the heightened political uncertainty attendant on the Palestinian-Israeli peace process as a key detriment to investment. More specifically, the Israeli policy of closing the borders between the West Bank and Gaza Strip on the one hand and Israel on the other hand has been the driving force in the recent economic development and is briefly discussed in section III. The short-term impact of the border closure policy on the performance of the industrial sector is analysed in section IV, while section V addresses the long-term impact of border closure on the level and efficiency of industrial investment. The last section concludes.

I. PEACE AND THE VISION OF INDUSTRIAL DEVELOPMENT

The vision of Palestinian economic development that emerged at the time of the signing of the Declaration of Principles in September 1993 is related to moving the Palestinian economy toward its full potential and embarking on a path of sustainable growth and development. This would be facilitated by: (a) removing the regulatory constraints, with the withdrawal and redeployment of the Israeli army, (b) creation of a suitable legal and regulatory environment by the Palestinian Authority, (c) substantial

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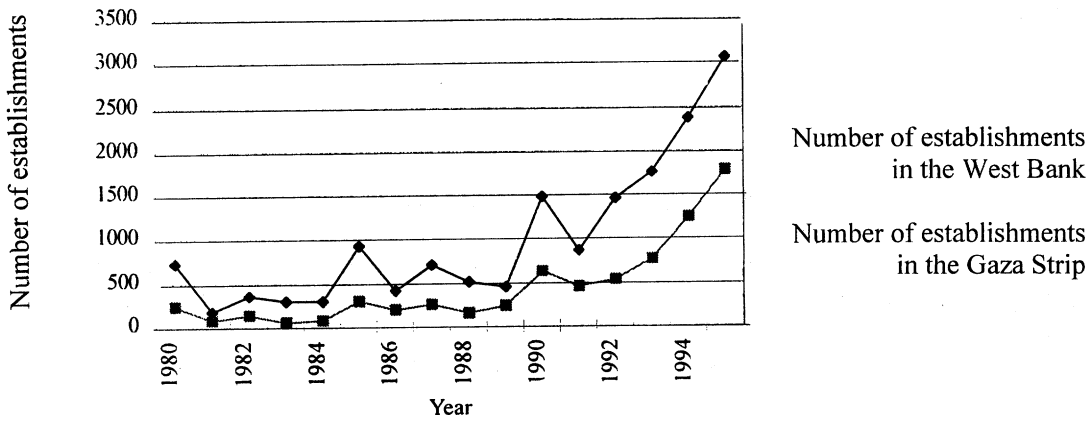
[7] Hamed and Shaban provided estimates of the leakage in import and seigniorage taxes, while Jawhary provided up-to-date estimate of the leakage on indirect imports through Israeli traders. See Osama Hamed and Radwan Shaban, "One-sided customs and monetary union: the case of the West Bank and Gaza Strip under Israeli occupation," in Stanley Fischer, Dani Rodrik, and Elias Tuma, eds., *The Economics of Middle East Peace* (Cambridge: M.I.T. Press, 1993). See also Muna Jawhary, *The Palestinian-Israeli Trade Arrangements: Searching for Fair Revenue-Sharing*. Supervised by Radwan A. Shaban (Jerusalem: Palestine Economic Policy Research Institute [MAS], 1995).

investment in public infrastructure financed by around $3 billion of pledged donor aid, and (d) energizing the private sector to grow along an export-oriented path that would replace the substantial export of labour[8] with the export of goods and services.

Indeed, both domestic and expatriate Palestinian entrepreneurs have demonstrated substantial capacity and interest in investing in the West Bank and Gaza Strip. More companies were registered in 1994 and the first half of 1995 than during the entire decade of the 1980s (see figure 1). Some large shareholding companies have been formed by groups of expatriate and local Palestinian entrepreneurs. The financial sector boomed over a very short time period, with total deposits reaching 60% of GDP by the end of 1996. The availability of capital is mirrored by the availability of a relatively skilled labour force, with little upward pressure on wages given the high rate of unemployment.

However, the actual rate of private investment, in particular in the industrial sector, has been very low since 1993. While the economic fundamentals seem appropriate for a strong increase in private activity in the industrial sector, the new environment created by the peace process has actually been detrimental to private investment, growth opportunities and industrial development. Strategic and short-term uncertainty have been heightened. The tradable sector has been severely affected by the frequency and extent of border closures.

Figure 1. Number of newly registered establishments in the West Bank and Gaza Strip (1980-1995)



Source: Radwan A. Shaban, *Toward a Vision of Palestinian Economic Development* (Jerusalem: Palestine Economic Policy Research Institute [MAS], 1996).

[8] Radwan A. Shaban, "Palestinian labour mobility", *International Labour Review*, 1993, vol. 143, Nos. 5-6, pp. 655-672.

II. HEIGHTENED POLITICAL UNCERTAINTY

The nature of the Palestinian-Israeli peace process involves increased strategic uncertainty that would deter investment activity. The interim arrangement established the Palestinian Authority in May 1994, and provided for a five-year transitional period beginning from that time, during which the final status of the West Bank and Gaza Strip would be negotiated. While the political difficulties may have required that the conflict be resolved in stages, the lack of agreement with regard to the outline of the permanent solution inherently subjects investors to undue future risk, reducing investment levels. An entrepreneur who starts a new project in the West Bank or the Gaza Strip is highly uncertain about the type and kind of authority (Israeli, Palestinian or shared/confused) that he will be subjected to five years later. The Palestinian legal and regulatory environment is also shaped by these uncertainties, as well as by the inherent uncertainty arising from the formative stage of Palestinian economic policy-making

The nature and implementation of the interim agreement subjects the private sector to additional uncertainty and risk, over and above the inherent strategic uncertainty:

(a) The operation of the Gaza port and airport and the corridor between the West Bank and Gaza Strip, which are essential for Palestinian access to the outside world, have been held back by the Palestinian-Israeli negotiations over the details of control over these facilities. For example, the Gaza airport has been constructed and is ready for flights, yet its operation has been hostage to the negotiation over how it will be operated.

(b) Border industrial estates have been proposed as a magical way of sidestepping the problem of access and the difficulties of border closure. Again, however, the construction and operation of these border estates have been long delayed, pending negotiation over control and sovereignty over these areas.

(c) The West Bank has been divided into a patchwork of jurisdictional areas, with the Palestinian Authority exercising control over non-contiguous areas. Thus, an investor moving goods and workers within the West Bank will be crossing several jurisdictional areas over a short distance. For example, a road connecting two urban areas or population settlements is sure to pass through areas of Palestinian, Israeli and shared control. The largest component of political uncertainty that has adversely affected economic activity has been the Israeli policy of border closure on the West Bank and Gaza Strip.

III. GENERAL AND TOTAL BORDER CLOSURE

Of all its policies, Israel's policy of border closure since 1993 has been the most damaging to the Palestinian economy in general and to industrial development in particular. The period after the 1967 occupation was characterized by relatively free movement of people between the West Bank and Gaza Strip on the one hand and Israel on the other hand. As of March 1993, however, all West Bank and Gaza Strip Palestinians

were required to have a permit to enter Israel or to annexed East Jerusalem. While Palestinian workers in Israel had been required to have work permits prior to that date, this did not prevent many Palestinians without a permit from obtaining jobs in Israel. However, the border controls have increasingly strengthened since March 1993, with fixed and mobile border checkpoints becoming very active and with increasingly heavy penalties for violators of Israeli restrictions.

This policy of "general border closure" has been continuously and permanently in force since March 1993; no Palestinian is allowed into Israel or East Jerusalem without an Israeli-issued permit to enter. Given the non-contiguity of the West Bank and Gaza Strip, this policy has effectively broken the Palestinian economy into separate markets, with high costs of moving goods and people from one market through Israel to the other market. Arab East Jerusalem, which is the cultural, political and economic centre of the West Bank, has been isolated and separated from the rest of the Palestinian areas. Moreover, given that all reasonable roads between the northern and southern parts of the West Bank pass through Jerusalem, this general and permanent border closure has divided the West Bank into two regions, with a very high cost of moving people and goods between them.

In addition to the policy of general border closure, which is applied continuously, the Israeli Government has been applying a policy of total border closure after or in anticipation of violent events. During a period of total border closure, even permit-holding Palestinians are prevented from entering or passing through Israel. Given the nature of violent events, total border closure has been applied randomly and for uncertain durations (see figure 2). However, one trend is clear: over time, total border closure has been applied frequently and for longer time periods. The proportion of days in a given year that West Bank residents were subjected to total border closure was 4.7% in 1993, 15.9% in 1994, 23.0% in 1995 and 36.2% in 1996. Gaza Strip residents have been subjected to total border closure more frequently than the West Bank, with the percentage of total closure days amounting to 7.1% in 1993, 20.8% in 1994, 27.9% in 1995 and 37.8% in 1996.[9]

IV. THE SHORT-TERM IMPACT OF BORDER CLOSURE ON INDUSTRIAL ACTIVITY

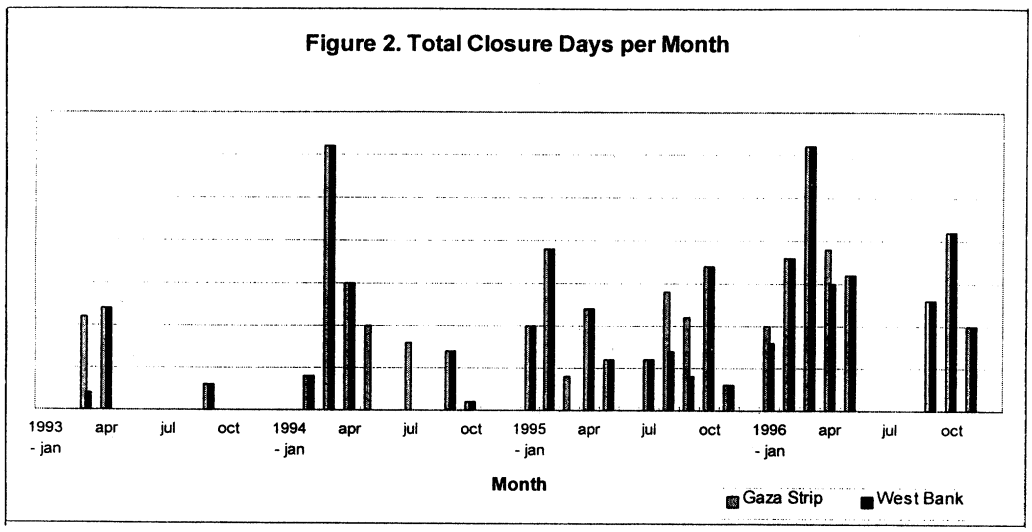
While the Palestinian economy as a whole has suffered from the border closures, the industrial sector seems to be especially vulnerable given the heavy reliance of this sector on tradable inputs and outputs. Table 1 provides a sectoral breakdown of employment from two labour force surveys. The April/May 1996 survey was conducted

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[9] An extreme form of 'internal border closure" has been imposed twice on the West Bank. In this type of closure, Palestinians cannot go from one West Bank city to another or move between a city and its neighbouring villages. This policy became possible only after the Palestinian Authority assumed authority over the West Bank towns in the fall of 1995, while Israel maintained its control over the major part of the West Bank, including areas connecting the urban centres. Internal closure was applied following the wave of suicide bombs in February/March 1996 and in the wake of riots following the Israeli opening of a tunnel under the old city of Jerusalem.

during conditions of more stringent and lengthier application of total border closure than the September/October 1995 survey. While the agricultural sector acts as a shock absorber during closure periods, by increasing its share of employment, the share of employment in the industrial sector consistently declines with harsher application of the border closure.[10]

Figure 2. Total closure days per month



[10] While the construction sector seems to suffer from harsher application of closure, a comparison of April/May 1996 with September/October 1995 shows that this is not always the case. For brief closure periods, it is likely that some substitution takes place, with construction workers who are prevented from working in Israel increasing their employment in the West Bank and Gaza Strip. The longer and harsher the border closure is, the more likely it is that the construction sector will suffer, as critical imported inputs (cement, steel, etc.) become scarce.

TABLE 1. SECTORAL DISTRIBUTION OF DOMESTIC EMPLOYMENT IN THE WEST BANK AND GAZA STRIP (EXCLUDING EMPLOYMENT IN ISRAEL AND SETTLEMENTS)

	September/October 1995			April/May 1996		
Sector	West Bank	Gaza Strip	Total	West Bank	Gaza Strip	Total
Agriculture	14.7	10.7	13.6	19.8	10.2	17.3
Industry	19.9	15.4	18.6	17.8	15.8	17.2
Construction	12.8	14.0	13.1	9.7	7.4	9.1
Services	52.6	59.9	54.7	52.7	66.7	56.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Palestinian Central Bureau of Statistics, Labour Force Sample Surveys of September/October 1995 and April/May 1996.

Note: The type of closure imposed in April/May 1996 was more severe than that of September/October 1995.

The impact of closure on industrial firms is strongly negative. The integration of the Palestine economy with the Israeli economy since the 1967 occupation resulted in the establishment of strong links between Palestinian and Israeli firms, whether in procuring inputs or marketing output. The short-run impact of closures on industrial firms involves interruptions in the production process, delays in the procurement of raw materials and intermediate inputs, interruptions in the movement of workers and personnel, and increases in the cost of delivering goods and services to customers. Such closures make it very difficult to market output and to assure customers of reliability in delivery, which means that a market share is lost. Likewise, the financial cost of doing business increases since it becomes difficult to send company personnel to collect receivables and bad debts; at the same time, the threat of closure induces Israeli suppliers of inputs to demand advance payment for firms' purchases. The net result of these effects is that sales decline, inventories build up, and operating costs skyrocket.

Table 2 details the decline in sales for selected firms representing various industrial activities following the spring 1996 closure, which followed a series of suicide bombings in February and March. The decline in sales is quite steep, ranging from 9% to 90%, and averaging 57% for these firms. Part of the decline in sales in the West Bank and Gaza Strip is a reflection of the reduction in aggregate demand that follows a closure. Although there may be effective demand for products, some firms suffer from a reduction in sales because of their inability to deliver the goods to the customers, the result of difficulties in transporting the manufactured goods to the customer or of difficulties in concluding sales because of obstacles in the movement of personnel and customers across borders with Israel. The above-mentioned factors are usually associated with excess inventories that are held by a given establishment. This would be the case with such industrial activities as food processing, leather and textiles. However, some firms are also likely to suffer a substantial reduction in production and sales if there is an interruption in the delivery of key inputs which are imported either from Israel or through Israel. This would apply to chemicals, pharmaceuticals, metals and construction industries, for example. Clearly, establishments in these industries can build up their inventories of inputs or outputs (at a substantial cost, however) to reduce the impact of closure, although this would be a fruitful course of action only if the demand for these industries is local and such demand is relatively immune to closure conditions.

Difficulties in marketing Palestinian goods in Israel ultimately lead to a reduction in the Israeli market share held by Palestinian firms. The cost of moving goods across borders increases, and the uncertainty surrounding the timing and feasibility of deliveries adds to the cost of trade with Palestinian firms. For example, 50% of the output of the Reem Sport Shoes company was once sold in the Israeli market, but owing to the implementation of closure policies in 1993, this figure declined to 10% in 1996.

Border closures are applied asymmetrically: Palestinian goods are largely prevented from entering Israel or going through Israel, while Israeli goods continue to flow into Palestinian areas, in particular the West Bank. Although it is possible for some Palestinian firms to marginally increase their market share at the expense of Israeli firms,

the overwhelming scope of the asymmetry in border closure has resulted in the decline of the market share and size of Palestinian firms. This has weakened Palestinian firms and made them less competitive.

In addition to the reduction in sales, the major impact of the closure involves a substantial increase in the firm's costs of production and operation. The costs associated with inventories increase, whether as a result of the undesired accumulation of inventories of inputs or outputs or as a result of deliberately higher levels of inventories to allow the firm to cope with the closure. Financing costs increase, as it becomes difficult to move personnel across borders (say from the West Bank to Israel or to Gaza) to collect payment and bad debts. Moreover, it is reported that many Israeli suppliers demand advance payment during closures instead of payment upon receipt to protect themselves from collection difficulties. The liquidity problems that arise from increased financing difficulties are known to banks, which tighten their credit line or become unwilling to extend additional credit in the face of such difficulties. In principle, the increased inefficiency in the payment system that arises from closure is certain to reduce profitability and the size of production. In addition, this risky environment is well-known to commercial banks, which become even more conservative in extending credit to private businesses and which reduce the maturity of any credit, thus raising the cost of credit to firms.

The transportation cost of moving goods across borders increases substantially as a result of border closures. For example, the transportation cost of a truckload of goods between the West Bank and Gaza Strip was around NIS 500 in 1993, prior to the implementation of general border closure policies, but it had risen to NIS 1,500 by 1996. The substantial increase in transportation costs is the outcome of new rules that require goods to be unloaded at the border from one truck to another. The back-to-back system of shipping goods may require goods that are moved between the West Bank and Gaza Strip to be loaded onto three separate trucks, for a journey that is usually less than 100 miles. There have been numerous instances of spoilage of perishable goods (food, chocolate) in the transportation process. To the extent that some inputs are imported and some of the output is exported, the closure increases the cost of clearance, storage and shipping. Firms have increasingly begun to rely on Israeli agents for shipping and clearance, at higher costs. During periods of closure, delayed delivery of goods is certain to increase the storage cost at Israeli ports.

Some firms react to reduction in sales by reducing their employment, whether by laying off workers, reducing the number of shifts of operation or reducing the duration of the operational schedule. Firms are less likely to lay off workers that have job-specific skills; instead, they continue paying such workers' wages in order to save the cost of training new workers when sales begin increasing again.

TABLE 2. IMPACT OF SPRING 1996 CLOSURE ON SALES BY SELECTED FIRMS

Firm	Normal sale	During closure	Percentage decline
Reem Sports Shoes (NIS/month)	180,000	40,000	78
Al-Shorouq Carton Industry Co. (NIS/month)	150,000	73,000 in March '96	51
		136,000 in April '96	9
Aweida Food Products (NIS/month)	500,000	140,000	72
Palestinian Tractor Co. (NIS/month)	850,000	200,000	76
National Palace Hotel Restaurant ($/month)	27,000	13,200	51
Riziq Textile Co. (NIS/month)	225,000	157,000	30
Nasser Oriental Trading & Manufacturing Co. (NIS/month)	1,000,000	100,000	90
Silvana Co. (NIS/day)	65,000	20,000	69
Jordan Chemical Lab (NIS/month)	500,000	300,000	40

Source: Derived from case-studies on the impact of closures on firms assembled by Mateen Co.

Note: Figures in the column headed "During closure" refer to March and April 1996.

V. THE LONG-TERM IMPACT OF THE CLOSURE ON INDUSTRIAL ACTIVITY

The border closure policy has a detrimental impact on long-run economic development in general, and industrial development in particular, through (a) lower levels of investment and (b) reduced efficiency of investment.[11] Although these are related, they are two separate effects of the border closure policy. Both lower levels of investment and the wrong type of investment imply lower rates of economic growth in the West Bank and Gaza Strip.

The border closure policy can largely explain the difference between the substantial interest of the local and diaspora Palestinians in investing in the economy (see figure 1) and the low levels of investment that have materialized so far. First, the strong interest is based on a rosy scenario of long-term economic development, but the demand for investment has been reduced by the closure policy, owing to an overall reduction in aggregate demand. Secondly, the closure policy generally interrupts sales and increases operating costs, thus reducing overall profitability and reducing the incentive for new investment in this environment. Thirdly, investment is deterred by the increased risk arising from the uncertainty in the timing, duration and extent of border closure, an uncertainty which is over and above the strategic uncertainty that results from the interim status of the political situation and the unclear permanent status of the West Bank and Gaza Strip in the meantime. Fourthly, border closure has reduced public investment by diverting donor funds allocated for such purposes to projects that are largely aimed at income-maintenance and budgetary support in order to cushion the impact of border closures. To the extent that investment in private investment is complementary to public infrastructure, lower levels of private investment will also result from inability to upgrade infrastructure.

In addition to the above-mentioned factors that curtail the demand for investment, the closure policy reduces the supply of funds available for investment and increases the cost of such funds. In an environment of border closures, commercial banks become much more conservative in their lending practices than they may otherwise be. The cost of lending increases, given that commercial banks have to keep a higher ratio of liquid assets in order to be able to meet contingent demand on deposits.

In addition to the problem of low levels of investment, the wrong investment decisions are likely to be made in the context of border closures. Instead of developing into an export-oriented economy, the Palestinian economy, on the basis of signals sent by the closure policy, is driven into local autarky, with production aimed at the local market. This arises from the differential impact of border closure on firms depending on the relative importance of tradables in their inputs and output.

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[11] This ideas was first articulated by Chris Pissarides, "Unnecessary labour adjustment: the West Bank and Gaza under border closure", mimeo, 1996.

Table 3 illustrates that the firms that are least affected by border closure are those that utilize local material and sell their product in the local market. Indeed, to the extent that these firms face some external competition, they may even benefit if external competitors are unable to deliver goods to the local Palestinian market. Firms that usually sell their products in markets across borders suffer reduction in sales and market share, while firms that need imported inputs suffer higher inventory costs or interruptions to the production process. The more open to external trade the firm is, the more costly the closure policy is. This is an ironic outcome, given that the economic vision accompanying the peace process and donor aid revolves around the transition of the Palestinian economy from exporting labour to exporting goods and services that utilize the services of Palestinian labour. Investment decisions based on this vision have been heavily penalized by the implementation of the closure policy.

In the face of the new realities created by closure, firms may decide to attempt to mitigate the impact of the closure by locating the production process in the same location as that of inputs and product market. In this case, new investment would be in activities that produce goods for the domestic Palestinian market or in services that can be consumed in the region, such as tourism. Industries that produce export goods would attract very little investment; the Palestinian economy would be moving toward autarky, with limited trade with the outside world. Indeed, the non-contiguity of the West Bank and Gaza Strip generates additional peculiarities. In cases where each of the West Bank and Gaza Strip is an important market for a firm's product, then the firm may have to invest in two separate plants that would cater to the West Bank and the Gaza Strip markets separately. The thrust of these adjustments would be a move towards a closed economy that trades little with the outside world, and where there is little trade between the West Bank and Gaza Strip themselves. This closed-economy outcome would prevent the Palestinian economy from reaping the substantial benefits to be gained from the international division of labour that accompanies global trade.

However, a permanent resolution of the political process may come about in such a manner that encourages and protects free trade between the West Bank and Gaza Strip, and between these areas and Israel and the outside world. This would clearly provide a bright framework for the very long-term prospects of the Palestinian economy. However, closure would have done its harm by then, in having brought about inefficient and inappropriate investment in the Palestinian economy, which would be ill-suited to compete and to engage in free trade. For example, a firm that had established two plants to serve the geographically separate markets of the West Bank and the Gaza Strip may find it more efficient to bring both lines of production under one roof. Likewise, a firm that may have invested to meet domestic Palestinian demand may find itself unable to compete with lower-priced and superior-quality Israeli or foreign products, and the firm that had decided to give up on the Israeli or world market because of transportation difficulties may have lost out.

TABLE 3. DIFFICULTIES ENCOUNTERED BY FIRMS DURING CLOSURE, BY LOCATION OF INPUTS AND MARKETS

	MARKET			
Inputs	West Bank	Gaza	Israel	Abroad
For a firm located in the West Bank				
West Bank	Minimal	Delivery	Delivery	Delivery
Gaza	Access	Access+delivery	Access+delivery	Access+delivery
Israel	Access	Access+delivery	Access+delivery	Access+delivery
Abroad	Clearance+access	Clearance+access+delivery	Clearance+access+delivery	Clearance+access+delivery+clearance
For a firm located in the Gaza Strip				
West Bank	Access+delivery	Access	Access+delivery	Access+delivery
Gaza	Delivery	Minimal	Delivery	Delivery
Israel	Access+delivery	Access	Access+delivery	Access+delivery+clearance
Abroad	Clearance+access+delivery	Clearance+access	Clearance+access+delivery	Clearance+access+delivery+clearance

Notes: Access–delivery of inputs to firms is interrupted or becomes very costly. Delivery–delivery of output to customers is interrupted or becomes extremely expensive. Clearance–difficulties are encountered in customs clearance either for imports or exports.

VI. CONCLUSION

Industrial development in the West Bank and Gaza Strip has been closely linked to the political process. This process has been largely responsible for the limited improvements in this sector. First, the strategic uncertainty concerning the future and nature of political authority over the West Bank and Gaza Strip has been heightened, given the unresolved and unclear status of a permanent agreement. Secondly, the overlap in jurisdiction over the West Bank and Gaza Strip during the interim period has created new uncertainties over licensing, the mobility of goods and factors of production, and access to the outside world. More critically, the introduction of a permanent border closure on all residents of the West Bank and Gaza Strip, except for permit-holders, and the random but increasingly frequent policy of total border closure, applied even to permit-holders, has increased uncertainties, reduced sales and increased the cost of production. At the time of this writing, the border closure policy was the greatest deterrent to investment in the industrial sector.

However, the basic elements needed for impressive development in the industrial sector are all present: an educated labour force, available capital, abundance of local and expatriate entrepreneurial skills, and strong interest by their private sector in leading the path of industrial development. A favourable resolution of the Palestinian-Israeli peace process in a manner that would reduce uncertainties and create a favourable political environment would most likely be accompanied by rapid industrial development. In the meanwhile, the critical factor that constrains the industrial sector is the absence of assured mobility of goods and factors of production within the Palestinian economy and to and from the outside world. Thus, creating a trade infrastructure assuring free and uninterrupted access to various parts of the Palestinian economy and to the outside world (West Bank–Gaza Strip corridor, Gaza port, airports, bridges) would substantially improve the business environment and improve the chances for healthier industrial development.

Additional reading

Shaban, Radwan A. "Living standards in the West Bank and Gaza Strip during the transition". MAS Discussion Paper. Jerusalem: Palestine Economic Policy Research Institute (MAS), 1997.

Shaban, Radwan A. *Toward a Vision of Palestinian Economic Development*. Jerusalem: Palestine Economic Policy Research Institute (MAS), 1996.

INVESTMENT BY THE PALESTINIAN DIASPORA IN THE MANUFACTURING SECTORS OF THE WEST BANK AND GAZA STRIP

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I. OVERVIEW

The human resources and economic potential of the Palestinians in the diaspora are issues that have remained secondary to the political agenda, which has always assumed the leading role in the Palestinian question. In fact, these human and economic resources have never even been calculated properly, mainly owing to the difficulty in collecting the required data from such a widely scattered group. However, once the peace process got under way, the importance of these potentialities in the exiled economy of the Palestinian territories became apparent, as did the importance of ensuring a foundation for the political framework created by the Oslo accords.

The Centre d'études et de documentation économique, juridique et sociale (CEDEJ) in Cairo became interested in examining the economy of the Palestinian diaspora and its role in the process of building a Palestinian entity. In this context–and with the desire to keep theoretical analysis to a minimum–the present paper utilizes the results of field research that studied capabilities and trends of investment by Palestinian business people living in a number of countries of the Palestinian diaspora (the United States, Canada, Egypt, the Syrian Arab Republic, Jordan, the United Arab Emirates, Lebanon and the United Kingdom, as well as Israel). Indicators about the size and type of the industrial investments that are already operational, that are in the process of being implemented, or that are under study will be presented. Although preliminary results indicate that such investment is weak, nevertheless sizeable financial resources and valuable technical know-how have been gained in the host countries of the Palestinian diaspora, in particular in the industrial countries, and these would augur a promising future, if the peace process could be accelerated.

Before this issue is examined, however, a brief summary will be provided of the reasons that industrial activities tend to be neglected in the Palestinian territories.

Participation in industrial activity among Palestinian business people in the diaspora is marginal in comparison with their participation in other sectors. It ranges from a low in North America (with only 11% of Palestinian business people engaged in the industrial sector), as the immigrant and his family are almost completely cut off from this field, with regard to the required capital, know-how and professional background, to 14% in the United Arab Emirates and up to 28% in Egypt.[1] Many of those resident in these latter two countries

[1] All percentages mentioned here are derived from samples of Palestinian business people interviewed for the present study and are not necessarily representative of all the business people in a particular country.

mentioned that the geographical proximity to Palestine of the country in which they were residing, as well as the official relations formed between Palestine and the country to which they had immigrated, were the reason that they were able to engage in industrial activity. Commerce was the common denominator among Palestinian business people in the diaspora, with about half of them active in this sector: 52% of those living in Canada and the United States, 48% of those in the United Arab Emirates and 41% of those in Egypt were involved in commerce. The dominance of trading can perhaps be explained by the fact that this field does not require high levels of start-up capital nor does it require being established in one particular geographical locality, as is the case for industrial investment (and this latter returns a profit only after a relatively long period of time). Likewise, transnational networks of Palestinian business people are already in place and can be tapped into with relative ease. In addition, high concentrations of Palestinians in particular cities in the United States and Canada have encouraged the creation of services targeted to the Palestinian community that could be considered "ethnic business". The participation rates for this kind of business are 26% in the United States and 21% in Canada. In Egypt, on the other hand, such businesses account for only a small portion of the Palestinian business people in the country (12%). In the United Arab Emirates, it is smaller still, only 2%.

With regard to the construction sector, Palestinian business people in the United Arab Emirates are an exceptional case: 36% of economically active Palestinians there are involved in this sector. In the United States, only 5% are in construction, and in Egypt, the figure is 7%. These proportions probably reflect the prominence of the building and construction sector in the Gulf States, a situation which has encouraged many Palestinian engineers to locate there (28% of the sample drawn by the survey in the United Arab Emirates, of which two thirds are engineers).

From the foregoing, it can be said that the Palestinian experience in the area of industry is limited; this will be reflected, as will be seen below, on the size and type of industrial investment made in the Palestinian territories. On several fronts, industrial investment in the Palestinian territories faces obstacles:

1. Industry requires high levels of capital and carries a high degree of risk. The current political situation and the premiership of Benyamin Netanyahu mean that political stability in the region is a distant dream. The opinions expressed by the Palestinian business people interviewed for the present study indicated pessimism regarding the future of the political process; most of them were suspending the implementation of any projects under study until the subject of the Palestinian Authority's sovereignty over land is clarified.

2. Industry requires the presence of various types of developed industrial workshops and facilities that could respond quickly to the needs of industrial concerns, including supplying them with spare parts (it should be kept in mind here that the share of industry in

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The statistics used here are therefore only indicators of the relative weight of one group in comparison with that of other groups.

GDP when Yasser Arafat came to power in 1992 was no more than 7.5% in the West Bank and 11% in the Gaza Strip, an average of 8%).[2]

This point was brought up by some of the industrialists interviewed. For example, Ghassan Arnaky, the owner of a spring factory in Los Angeles, carried out a study on the feasibility of opening up a branch factory in the West Bank. However, he found that there would have been many problems arising from the industrial climate there. His factory would have needed to deal with established turning workshops, and he at first thought that this need could be supplied by the shops in Israel. However, the border closures, which hinder the movement of Palestinians, were serious obstacles, and he decided against making this investment.

3. Industry requires outlet markets for its production. However, in the case of the Palestinian territories, markets are a subject that has to do with borders, which in turn depend not only on the progress being made in the peace process but also on improving the political relations among the Arab countries.

II. THE SITUATION OF INVESTMENT IN THE PALESTINIAN TERRITORIES: "WAIT AND SEE"

Since the implementation of the Oslo accords, most of the Palestinian business people who had taken Canadian or American nationality have traveled to the Palestinian territories on business or to see family, or simply out of nostalgia for their homeland; for them, their acquired nationality facilitated their entry into the Palestinian territories. The same is not the case for Palestinian business people living in Egypt or the United Arab Emirates, as many of these are refugees; only 50% and 45% respectively have returned for a visit. Many of those visiting the Palestinian territories have made it a point to study the markets there and the legal issues relevant to setting up a business, as well as the subject of labour. Some business people opened up branches of their companies to monitor the situation and to be in place to take advantage of whatever situations might arise (the purchase of strategically located land, the issuing of new legislation).

In addition to the small individual sums of financial help sent from the diaspora that enable the families of expatriates to subsist in the Palestinian territories, there are also large-scale investment projects which involve larger amounts of financial inflows. It is difficult, however, to assess the volume of Palestinian diaspora investment using the findings of the surveys conducted for the present survey. The validity of the statistics coming from inside of Palestine is questionable.[3] Moreover, it is hard to distinguish between local and foreign

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[2] World Bank, *Developing the Palestinian Territories: an Investment in Peace*, vol. 2 (Washington, D.C.: World Bank, 1993), pp. 149-151.

[3] Such data are not appropriate for the type of analysis being applied here, owing to the following:

- The data concern only companies that apply for tax holidays in accordance with the Investment Law.
- The data define a local investor as any Palestinian who holds a Palestinian/Israeli identity card, even if this person resides abroad.

investment. An economic model has been developed to assess the contribution of the diaspora, but it provides only an estimate.[4]

A. LARGE INVESTMENTS

According to the Ministry of Economy and Trade, the total investments coming from local or foreign nationals amounted to $120.7 million in 1996 and $81.7 million in 1997, which account for only a small proportion of GDP, 3.1% and 2% respectively, while in most Arab countries, this ratio is not less than 15%.[5] However, according to Jamil Harara, the General Director of the High Committee of Investment, in Gaza, more than 90% of the investment comes from the diaspora. It is reasonable to assume that 70% of all investments come from foreign nationals. The contribution of the diaspora to investments in large projects is calculated at $116.8 million for 1996 and $154.9 million for 1997.

These figures need to be modified, however, by taking into account what was omitted by the statistics. For example, the investments of the three biggest companies coming from the diaspora–Palestine Development and Investment Company (PADICO), the Arab Palestinian Investment Company (APIC), and Salaam International Holding Company–need to be added in. These companies did not apply for an exemption of taxes in accordance with the Investment Law although the Palestine Telecommunications Co. (PALTEL), a subsidiary of PADICO, did. The investments of these companies amounted to $49.8 million in 1996 and $56.8 million in 1997. Adding these figures to the official data yields an investment of $134.3 million for 1996 and $114 million for 1997.

B. SMALL INVESTMENTS, ESPECIALLY IN THE RESIDENTIAL SECTOR

To gain a foothold in Palestine, some of the Palestinians residing abroad buy or build an apartment or house to be used for vacationing. Others build residences for the family remaining in Palestine.[6] The Palestinian Central Bureau of Statistics estimated

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- According to the international standards currently in force, any subsidiary of a foreign company in Palestine is considered a domestic company.
- According to surveys conducted by the author, the declared capital of some companies is less than actual capital and sometimes it stems from non-declared transfers from abroad.
- There is no distinction between a foreigner and foreigner national. However, it is probable that an overwhelming majority, if not all, the investment come from people of Palestinian origin.

For all of these considerations, such data are not completely reliable.

4 For more detail on this economic model, see Sari Hanafi, in "Seminar Reports" at *www.passia.org.*

5 Various reports issued by the Palestinian Ministry of Economy and Trade and by the High Committee of Investment in Gaza.

6 The Palestinian Central Bureau of Statistics (PCBS) carried out the *Existing Building Survey* and the *Expenditure and Consumption Survey,* which allowed it to assess the small-size investments in the private residential sector. It should be noted that the figures generated by these surveys do not include the commercial construction projects mentioned above in the section *Large Investments.*

individual transfers from the diaspora in private construction in Palestine at approximately $169.5 million in 1996 and $197.1 million in 1997.

C. TOTAL INVESTMENTS

The total contribution of the Palestinian diaspora to investment amounted to $303.8 million in 1996 and $311.1 million in 1997.

The interviews conducted for the present study made it clear that most Palestinian business people, regardless of their personal views about the peace process, make their investment decisions on the basis of economic, not political, factors. However, these investors are not purely *Homo œcunomicus*, who seeks to maximize profit by enlarging his market toward his homeland, but a "human actor" (in the words of Israel Kirzner),[7] who tries to satisfy his needs by playing a role as a member of an ethnic network.

What are the investments being made by individuals? The following observations were made on the basis of interviews with Palestinian business people; the *Middle East Economic Digest* was also a source of information with regard to investment by the Palestinians of the diaspora.

1. The general trend is not to invest individually. Among the sample of Palestinian business people residing in Canada, there was not a single instance recorded of an investment project being carried out in the Palestinian territories. There were only five projects being funded by Palestinians living in the United States (see annex 1). However, the shorter the distance between the Palestinian territories and the country of residence of the Palestinian business people, the greater the likelihood of investment. There were 21 business firms funded by 9 business people with residence in Egypt, out of the 57 individuals in the relevant sub-sample. This higher rate of investing in the Palestinian territories–or at least of exporting their products to Gaza–may be attributed to the fact that this group knows the area well and has family there. The geographical proximity of the Gaza Strip also encourages these business people to open branches of their companies in Gaza, a promising indicator with regard to Palestinian-Egyptian economic relations. With regard to Palestinians resident in the United Arab Emirates, which is more distant than Egypt, the rate of investment is lower (7 businesses funded by 6 business people, out of 57 respondents in the relevant sub-sample).

It should be noted that geographical proximity is not limited to the idea of shared borders, but has to do with human and material interaction and exchange as well. Therefore, although the Syrian Arab Republic is close in terms of physical location, it is nevertheless isolated, owing to the political positions taken by the Syrian Government and also because the Palestinians there are refugees of 1948, which means that for the most part they have no family to return to (in contrast to the Palestinians originally from the West Bank and Gaza Strip). These factors limit the possibilities of investment for them. In addition, virtually all

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[7] Israel M. Kirzner, *Discovery, Capitalism, and Distributive Justice* (Oxford: Basil Blackwell, 1989).

of the Palestinian bourgeoisie in the Syrian Arab Republic operates at a local level and does not have the capital that would be required to invest at a regional level.

2. The reason that many of the business people who responded to the survey do not invest in the Palestinian territories is that they have adopted a "wait and see" attitude pending the establishment of the relevant bureaucratic channels; they are also waiting for some type of political stability to take hold. Nine per cent of those in the United States fit into this category, whereas the figure is 35% for those residing in Canada. This divergence can be explained mainly by the differences in the geographic origin of the concerned business people. In Canada, 86% of those in the sample had previously been refugees in Arab countries–as opposed to 20% of the American sample–and had left Palestine as children, with their families. They had nothing at all to go back to in the Palestinian territories, and their acquaintance with their homeland was limited. However, this did not stop some of those surveyed from thinking of conducting–or actually carrying out–studies on the feasibility of setting up a business in the Arab country to which they had first migrated, such as Lebanon or Jordan. Among respondents residing in Egypt or the United Arab Emirates, one quarter had adopted a "wait and see" attitude.

3. On many occasions, Chairman Yasser Arafat has wondered out loud who the Palestinian Rothschild will be. The Palestinian Authority has an idea that Palestinian investors are tycoons who are coming to put their extensive assets and resources at the disposal of the Palestinian economy. However, the research failed to turn up any evidence of a link between the extent of an individual's assets and liquidity and his likelihood of investing in the Palestinian territories. In fact, the majority of the Palestinian investors from the diaspora are medium and small investors rather than prominent business people. This explains the success of holding companies such as PADICO, APIC and Salaam International Holding Co., in gathering their capital by mobilizing small shareholders. In the founding meeting establishing the Palestine Islamic Bank in Abu Dhabi, those present tended to be pre-retirement age employees and managers who had saved up over the course of their careers, as opposed to prominent business people. Moreover, some of the economic niches around the world occupied by the Palestinian diaspora, especially in commerce and construction, cannot provide the right kind of support to the Palestinian economy. Those who have science and technology or industrial know-how–which the economy does need–do not necessarily have the capital sufficient for investing outside of their country of residence. What Palestine needs for its economy, then, is to mobilize different categories of people.

4. The businesses in the Palestinian territories cover all economic fields: industry, trade, construction, finance, services and tourism. For all their variety, however, few of them are involved in production. On the other hand, there are many enterprises engaging in the construction of housing and hotels and resorts.[8] This is not to say that business people

[8] According to Mohammad Zuhdi al-Nashashibi, Palestinian Minister of Finance, 200 inquiries concerning investment had been directed to the concerned authority since its establishment; he said that most of these had been approved, although implementation would be in several phases. National investment would

are seeking out projects with short-term profits: rather, the conditions for establishing other businesses such as industrial companies are complicated and are prey to unpredictable factors. Even now, the licensing of such enterprises is subject to the Israeli authorities, who in most cases base their decision to grant or withhold approval on political reasons having to do with the status of their relations at the moment with the Palestinian Authority; economic factors are secondary.

In general, the conditions and stipulations pertaining to industrial companies are complicated. For example, the Israeli authorities refuse to license any industrial project that uses a great deal of water. A number of those interviewed also complained of the lack of the infrastructure that would be needed by any industrial concern, such as roads, energy and water networks. These obstacles are not being mentioned here as a justification for the slow pace at which business people in the Palestinian diaspora are investing in the Palestinian territories, but rather to preclude any overly hasty analysis on the part of researchers who would make a value judgement about what they might consider a shortcoming or lack of patriotism among the economic élite of the diaspora.

There have been individual efforts by Palestinian business people in the diaspora to invest in the Palestinian territories, with some of them involved in collective mobilization for this purpose. Some companies have been formed, with APIC, the Palestine Investment Bank, the Palestine Islamic Bank and Salaam International Holding Co. being the most important.

However, the role of these companies is limited[9] in comparison with the Palestine Development and Investment Company (PADICO) $350 million and which was established immediately following the Oslo accords. It is considered the most active of the investment companies in the Palestinian territories and does not make any distinction between the Palestinians in the Palestinian territories and the Palestinians abroad. PADICO decided to establish public shareholding companies in Palestine, with PADICO retaining 49% of the shares and with the remaining 51% open to subscription by individuals and Palestinian companies. The shareholders elect the boards of directors of these companies; PADICO names its representative only. The companies thus established include the following: the Jerusalem Tourism Investment Company, the Palestine Real Estate Investment Company (Aqaria), Palestine Industrial Investment Company (PIIC), Palestine Securities Exchange Company (PSEC), the Palestine Tourism Investment Co., Palestine Industrial Estates Development and Management Co., Palestine Information Technology Company (PITC) and Palestine Electricity Company (PEC).

It can be said that PADICO has taken the initiative in implementing a great number of projects, in spite of the many obstacles that characterize the situation in the Palestinian territories.

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concentrate on the Gaza Strip, in the housing sector. He estimated that the value of projects implemented in the first eight months of 1995 was about $400 million (*Al-Hayaat* magazine, 3 September 1995).

[9] Salaam International, with declared capital of $250 million, is under establishment.

To end the discussion on individual and group Palestinian investments in the Palestinian territories, it can be said that such investment is modest in comparison to the size of Palestinian assets abroad but that it is significant in comparison with the amount of international aid that has been pledged to the Palestinian Authority. The contribution of the diaspora, according to the above-mentioned economic model, constituted 74% of total foreign aid ($549.4 million) in 1996 and 95% of total foreign aid in 1997 ($432.3 million).[10]

III. ACTUAL AND PROPOSED INDUSTRIAL INVESTMENT IN THE PALESTINIAN TERRITORIES

A. A GENERAL VIEW OF INDUSTRIAL INVESTMENTS

An inspection of annex I, which deals with industrial investments in the Palestinian territories, shows that very few investment projects are being carried out by business people in the Palestinian diaspora. There are even fewer investors than there are projects, meaning, of course, that some investors have more than one project.

In this study, construction projects have been considered to fall under the category of industry, although these will be kept separate from productive industries, since the former are analysed in a different way than the latter. What is being considered the construction industry here are contracting companies. Hotels *per se* are not construction projects either, although the actual constructing of the hotel is. Likewise, communications projects, such as the Palestine Telecommunications Company (PALTEL) and industrial cities are considered to be industrial projects, although this point is open to debate.

In the total sample of 405 business people, there were 26 industrial projects implemented or under implementation and another 15 construction projects. There were 15 industrial projects under study but not implemented and 5 construction projects under study.

It can be generally noted that geographical proximity plays an important role in encouraging these investments, with the level of investment in the Palestinian territories increasing, the closer the Palestinian business people are located to the Palestinian territories (4 industrial enterprises owned by Palestinians in Egypt were recorded, 5 by Palestinians in Jordan and 4 by Palestinians in the United Arab Emirates, and with Palestinians in Egypt, in Jordan and in the United Arab Emirates owning 5, zero and 5 construction firms respectively). This is because of the ease of movement and the close ties to family in the West Bank in the case of Jordan and in Gaza in the case of Egypt.[11] In the case of Canada,

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[10] Ministry of Planning and International Cooperation (MOPIC), Aid Coordination Department, *Fourth Quarterly Monitoring Report of Donor Assistance, 1997*, Web Site *www.pna.net*, Ramallah, 1998.

[11] For more detail about the socio-spatial analysis of business people in the Palestinian diaspora, see Sari Hanafi, *Bayn Alimayn: Rijal al-a'maal al-Filistiniyeen fil-shataat wa binaa' al-kayaan al-Filistini* (Between two worlds: business people in the Palestinian diaspora and the building of the Palestinian entity) (Cairo: Dar al-Mustaqbal al-Arabi, 1996) (Ramallah: Markaz Muwaatin, 1997); or Sari Hanafi, *Entre deux mondes.*

the United States, Australia and the United Kingdom, there are very few such relations (see annex II).

B. FORMS OF INDUSTRIAL INVESTMENT

To better address the nature of such enterprises and the way they interact with the Palestinian private sector, it is useful to focus on the following six forms of industrial investment:

(a) *Setting up a factory, with or without the participation of local industrialists, using the expertise and financial capabilities of Palestinians abroad*

There are a number of examples of this: a project to develop a shoe factory in Gaza (Yousef al-Shanti); the Palestinian Flour Mill Co., with capital of $14 million in Gaza (Mahmoud al-Fara); a flour mill in Gaza with a capacity of 250 tons daily, projected cost of $5 million; the establishment of a plant for desalination and for bottling desalinated well or sea water, at a cost of $5 million (Ali al-Safadi); concrete ready mixer (Subhi Qadeeh); development of the Toukan Group industries in Nablus (Farouk Toukan); manufacturing solar pumps (Qasem Natsheh); a factory for bottling natural gas (Mohammed Qasas); a furniture factory in Hebron (Radi al-Natsheh); National Aluminum Profile Co. (NAPCO) PLC in Nablus; Siniora Meat Factories; Al Haya Food Industries (WLL); and UNIPAL, a cigarette and food company (Omar al-Aqaad and Arab Palestinian Investment Holding Co.) (see annex I).

With regard to shareholding companies, the Palestine Industrial Investment Company (PIIC), a PADICO company, may be mentioned. Incorporated in January 1995 with a capital of $22 million, PIIC aims to strengthen the Palestinian economy by investing in new light, medium and heavy industries and by bolstering and expanding qualified existing industries. Examples include: the Tannery Project (expected to cost around $10 million), Home Appliances Project (expected to cost around $3 million), the Thermal Pipe Project (expected to cost around $1.3 million), the Poultry Project (expected to cost around $9 million), the Carpet Project (expected to cost around $5 million), the Polyethylene Teraphthalte (PET) Project (expected to cost around $4.5 million), and the Steel Pipe Project (expected to cost around $6 million).

It is to be expected that many other such enterprises exist that involve partnership between local Palestinians and those of the diaspora, who in most cases are relatives of the local partners. However, for reasons mentioned above, this situation is difficult to monitor. In order for this type of partnership to work, business people must be able to cross the borders easily, which is a prerequisite for the functioning of transnational economic networks. Moreover, a performance-based and less bureaucratic Palestinian institutional framework is also necessary.

Les hommes d'affaires palestiniens de la diaspora et la construction de l'entité palestinienne (Cairo, CEDEJ, 1997).

(b) *Transferring the production line of a factory in a country of the diaspora to the Palestinian territories*

Examples of this arrangement include the following: the establishment of two factories for cosmetics and shampoo in Bethlehem under licence from the American company Dina, which is owned by Hassan al-Khatib; and a production line, under study in Gaza, of Murtaja Food Company of Egypt, to make ghee, cooking oil and confectioneries (cookies and ice cream), owned by Sami Murtaja.

In addition, in Gaza, Ali al-Jamaali opened a production line of his Cairo factory for the design and assembly of cotton items, in particular T-shirts; the production line was opened to take advantage of the so-called arrangement between the Palestinian Authority and the United States Government to allow certain Palestinian goods to enter the United States without customs duties.[12]

(c) *Complete transfer of a factory in a country of the diaspora to the Palestinian territories*

This form of investment would require a high degree of political stability in the Palestinian territories, if they were to be preferred over their neighbouring countries as the site of such investment.

As was mentioned above, one advantage distinguishes the Palestinian territories, this being the transitional commercial agreement with the United States. One businessman who declined to be named was about to transfer a ready-made garment factory to Bethlehem to take advantage of this arrangement.

(d) *Joint ventures between Palestinians and technologically advanced countries, which involves transferring the technological expertise of the diaspora Palestinians acquired from their host countries*

Enterprises in this category of investment are eligible for guarantees and assistance made available by donor countries.

There are a number of examples: an American-Palestinian company with guarantees and loans from the Overseas Private Investment Corporation (OPIC), to build a 295-room hotel called GRDG, in Gaza. The company that will design it is Fairfax Engineering Design Co., which is managed by Palestinian-American Ziyad Karam, in cooperation with Marriott International Corp. OPIC announced that it would lend $36.5 million for the project. The total cost of this project is projected at $54 million. It has been announced that this project will employ 750 people during construction. The hotel itself will employ 300, and 1,700

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[12] This is only an arrangement, and not an agreement, because the United States Government can cancel it at any time, without referring to the second party.

indirect jobs will be created in various sectors. March 1996 was set as the deadline for finishing the work.

It should be noted that OPIC exhibits a strong anti-Arab bias and hesitates a great deal on the subject of guarantees for the investments by Palestinians. This perhaps helps explain why American-Palestinians have chosen to approach Arab, especially Egyptian, parties to obtain the expertise and financial support they need to set up business. Four Egyptian-Palestinian companies have been set up as follows: a construction company, in partnership with al-Naser/Hassan Allaam Co. of Egypt (Khaleel Saraaf); a construction company in partnership with Egyptian engineer Kamal al-Zuhairi (in addition to a Swedish company, which was included in order to benefit from the Swedish Government financing available to such projects) (Salah al-Reis); a contract signed in April 1995 to build a children's hospital, at an estimated cost of $2 million, in Gaza (also Salah al-Reis); Arab Consulting Engineers/Muharram and Bakhoum (partnership between Fahmi Farouq al-Husseini and the Egyptian firm Muharram and Bakhoum); and Arab Contractors of Palestine (Othman Ahmad Othman and Al-Fara brothers) with capital of $2 million, and which constructed Gaza airport and public works amounting to $60 million in addition to building three branches of the Egyptian Real Estate Bank; Sabour/Fara Co., Palestine, an engineering consulting firm (in partnership with an Egyptian public sector company Mohammad Hassan Sabour (the last two companies belong to brothers Mahmoud and Sabri al-Farra).

Regarding the companies under study, two Canadian-Palestinian companies can be mentioned, one which manufactures aluminium profiles (Samih Hassan), and another that manufactures pre-fab houses (Mohammad al-Fahoum).

(e) *Subcontracting production to the Palestinian territories by firms in neighbouring countries*

The data collected in the survey that was conducted for the present study revealed that some Palestinians in Israel carry out subcontracting work in the West Bank, in particular in the Tulkarm area, because of its proximity to the Green Line, which separates Israel from the West Bank. For instance, there is Ibrahim Aref Ready-made Garment Factory in Umm al-Fahm (Israel), which employs 50 workers in sewing shops in the West Bank. Mention may also be made of the Islamic Butchery in Nazareth, which recently opened a modern slaughterhouse and meat-processing plant.

Based on the experience of the past, only a few of those doing subcontracting work would ever develop to the point where they would be producers themselves. The World Bank seems to have a clear preference for this form of dividing labour between Palestinians and Israelis, as seen in its annual report for 1994.

(f) *Projects for building industrial infrastructure*

The following examples may be cited: the industrial city in Jenin on a 600-dunum piece of land, for the first stage (Tawfiq al-Fakhouri, director of the Bank of Jordan and president of the board of directors of the industrial city); the industrial city in Gaza, with

total investment of $25 million (PADICO); and Palestine Telecommunications Co. (PALTEL).

IV. EGYPT AND JORDAN AS CENTRES OF GRAVITY FOR RECEIVING PALESTINIAN INVESTMENT

Egypt and Jordan have been attracting Palestinian capital for a long time. In the case of Jordan, the first Gulf crisis, which arose from the Iran-Iraq war, made many business people, contractors and senior-level employees in the Gulf consider relocating to another country, but one where they could live as citizens and not as foreigners. Some of these invested in the various sectors of Jordan's economy, among them industry. The country continued to pull in investments after the second Gulf crisis, and a large number of Palestinians from every class and segment of society who had been living in the Gulf made their way to Jordan.

Egypt had been attracting Palestinian investment even before it instated its open-door policy; however, most of this investment was in the field of trade. Large numbers of Gaza natives fled to Egypt even before the occupation of the Gaza Strip, among them Tahseen and Mohammed al-Hilu, as well as Mohammed al-Turk. Such people were able to benefit from Egypt's large market for their products or for the goods that they imported via small boats from Lebanon and the Syrian Arab Republic.[13]

The open-door policy instituted by Egypt in the mid-1970s spurred some Palestinians to leave Gaza and to open factories in Egypt, as was the case with Walid and Jamaal al-Shawa, who own United Plastics Company for Modern Irrigation, and also with Yousef al-Shanti, the owner of the Shanti Group for Plastics and Irrigation Equipment Industries.

Unlike Jordan, Egypt benefited only in rare cases from Palestinian investors who sought a location remote from the Gulf, after the first and second Gulf wars. To a certain degree, the welcome mat was out to residents of Gaza who held Egyptian papers and who wanted to stay in Egypt after they left the Gulf because of the outbreak of the first Gulf war (since it was not possible for them to go back to Gaza). The door was completely closed, however, after the second Gulf war; many Palestinians therefore took their investments to Canada and the United States, basically as a means of acquiring nationality that would allow them to come to the Middle East as "Canadians" or "Americans".

In spite of these measures, however, Egypt remained a centre of gravity for investment in the Arab world, owing to its cheap labour, its large market and its good infrastructure, in addition to its relative political stability and what this implied in terms of a fixed legal framework for the country's open-door policy.

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[13] The Gaza Strip was formerly governed by special military laws in its capacity as a confrontation city with Israel. However, this unusual state of affairs worked in its favour, because the socialist laws of nationalization implemented by Egypt were not applied to Palestinian-owned businesses, and Gaza remained an outlet for the importation (and smuggling) of luxury goods.

Therefore, some Palestinians, in particular American-Palestinians, who were able to enter easily, invested in the country. For example, the Fara family in Egypt is prominent in the manufacture of carpets (Mecca Co.) and engineer Khaleel Saraaf in the area of contracting and importing sanitation materials (bathroom fixtures). After the second Gulf war, brothers Farouq and Mahmoud Abu Ghazaleh established an agro-medical company specialized in importing biological products used in agriculture. They also established the Arab Group for Investment and Development, a biotechnology concern.

Since the peace process got under way, two additional factors besides those mentioned above have made Jordan and Egypt more important centres for investment. The first factor relates to the desire of many Palestinians who spent their whole life in the diaspora, whether in the United States or the Gulf, to invest in their Palestinian homeland. However, investing there may be impracticable because of the difficulty of entering the Palestinian territories or because of the Palestinians' loss of sovereignty over the land or finally because of the poor performance of the Palestinian Authority. Sometimes, therefore, to approach their homeland as close as they possibly could, investors turn to Jordan or Egypt.

The second factor, which is perhaps less important than the first, involves the recognition on the part of Palestinian business people of the economic competitiveness and friendly atmosphere of these two countries after the convening of international conferences held in each (the Amman Economic Summit for the Middle East and North Africa, held in Amman in October 1995, and the Cairo Summit, held in October 1996).

It would be possible to list a number of examples of this. In Egypt, for instance, Mohammad al-Farra set up Simco of Egypt for medical products at the end of 1992 (this firm produces syringes and contact lenses and the various solutions used with such lenses, as well as orthopaedic equipment).

In Amman, Mohammad Abu Ghazaleh invested in a poultry farm that is considered to be the most up-to-date of such facilities in the Middle East with regard to size and type. He also has a partnership with Munir Masoud, the owner of the Egypt Café Company, which produces instant coffee, to open a production line in Jordan. Many other examples could be cited as well.

In contrast, one Palestinian businessman from Nablus (who did not want to be identified by name) transferred his assets out of the Palestinian territories and over to Jordan after the peace process began, to go into business with his relatives in the food industry. This raises an interesting question: Could the peace process in fact drive investment out of the Palestinian territories instead of attracting it? The conclusion of this paper will try to answer this question.

V. CONCLUSION: INDUSTRIAL INVESTMENT BETWEEN A HIGHLY POLITICIZED ECONOMY AND THE PERSONALITY OF BUSINESS PEOPLE

The industrial enterprises mentioned in the present paper are enterprises that were established in the few years following the signing of the Oslo accords, businesses set up in the shadow of peace, but not necessarily the result of peace. In addition, since the time of the Iran-Iraq war and the onset of the economic crisis that has continued to plague the Gulf countries, some Palestinians that were still permitted to return to the West Bank did so and set up businesses there. According to the High Committee of Investment, in Gaza, 49 businesses that were funded from outside the Gaza Strip between October 1991 and October 1993, with a value of $60 million, employed some 800 people. The peace process was therefore not the only factor governing developments in the region. If the Oslo accords defined a crucial moment, the coming of the Netanyahu and the Israeli right to power also defined a crucial moment, and one that has had a tremendous impact on investment.

Israeli policy during 1996 ruined the investment climate in Palestine, and the disinclination on the part of Arab and foreign investors to invest in the Palestinian territories was marked in spite of all the new legal facilities provided by the Palestinian Authority. Jamil Harara, general director of the High Committee of Investment, considered 1996 a year of strangulation and embargo for the Palestinian economy, in particular with regard to investments, which were 60% below the levels recorded in the preceding years.

He also said that investments in the private sector had declined to around $430 million dollars in 1996, against $750 million in 1993. He noted in this regard the delay by the Israelis in accepting applications from those who wanted to be reunited with their families in the Palestinian territories and in accepting applications for ID cards by more than 190 investors in the Gaza Strip; this delay had a material impact on the size of new investment during 1996.

With regard to the present study, this rupture was evident in the suspension of many projects after the carrying out of a feasibility study or after purchasing the land on which to set up the proposed enterprise. This was the case, for instance, in the touristic and residential district planned for Jericho by Palestinian businessman and Nazareth resident Mohammed Abdel Qader.

It can be said that the Palestinian economy in the Palestinian territories and the participation of the diaspora in this economy are hostage to political developments and to the degree of progress being made in the peace process. Political stability is one of the factors that determine whether a given project is economically reasonable or not, of course. However, is it only this factor to which Palestinian industrial investments are subject? Or are there additional factors that must be taken into account, such as the cost of labour, access to markets for the produced goods, infrastructure, and perhaps other things as well? Could it be that the personality of the concerned businessman has a role to play also?

Joseph Schumpeter concentrated in his research on the entrepreneur on the propensity of this latter to seek to modernize and innovate. This innovation destabilizes–and even throws into turmoil–the economic status quo. The motivation for such innovation, however, is not simply hedonistic ends on the part of the entrepreneur, such as profit or material gain. Schumpeter believed that the entrepreneur took a calculated risk and did not unnecessarily expose himself to risk; Schumpeter's entrepreneur was neither a conjecturer nor a speculator.[14] Israel Kirzner, in his theory of human action, considered risk one of the factors on which commerce and industry were based, in a world full of upheaval and where the economic climate was characterized by change. In his theory, the entrepreneur tries to investigate the future rather than submit to the present realities.[15]

The role of social action also has implications for the economic activity of the entrepreneur.[16] That is, social action arises on the one hand from the subjective meaning that the entrepreneur gives to his activities and on the other hand to the feeling of belonging to society that affects his economic behaviour. Max Weber believed that a person's social relations are not simply the sum of his affiliations with various associations or unions, but also in the fact that this same person lives in a world governed by feelings and traditions.[17]

This theoretical framework can be employed in thinking about the entrepreneur of the Palestinian diaspora, whose behaviour is subject to a set of considerations that are far too complex to be captured by simplistic mathematical calculations that purport to predict rational economic behaviour. The relevant considerations involve the entrepreneur's personality and his ties to a world of complex social relationships, as well as his view of his role in society. Besides this, there are the entrepreneur's feelings and attitudes towards the network of social and economic relations of which he is a part and towards his country long suffering from occupation. "Patriotism" amounts to more than simply personal feelings directing a person in an absolute fashion; it is linked as well to a person's relations with his family, his home village and his tribe. The entrepreneur investing in the Palestinian territories should not be considered merely a merchant plying his trade with his customers; rather, he is a member of a social network, which itself has a role to play in maintaining economic activity.

As was mentioned above, the research here did not turn up a direct relationship between a person who invests in the Palestinian territories and his position with regard to the peace process. Those who oppose the peace agreements look at their investments as a purely

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[14] Joseph Schumpeter *The Economics and Sociology of Capitalism*, ed. Richard Swedberg (Princeton University Press, 1991), p. 411.

[15] Israel Kirzner, "Uncertainty, discovery and human action: a study of the entrepreneurial profile in the Misesian system", in Israel Kirzner, ed., *Method, Process, and Austrian Economics: Essays in Honor of Ludwig Von Mises* (Lexington, Mass.: Lexington Books, 1982), pp. 139-159.

[16] Jean Pierre Cassarino, "Les entrepreneurs privés tunisiens et leur expérience migratoire passée en Europe: la formation de réseaux", *Correspondance*, No. 44 (February 1997).

[17] Max Weber, *Sociological Writings*, ed. Wolf Heydebrand (New York: Continuum, 1994).

economic activity (and in this case tend to pursue projects that are more lucrative) or as an economic-humanitarian enterprise that creates job opportunities for those who are remaining steadfastly in the homeland (and this the investor sees as a higher good than simply sending money to family and relatives). Said one entrepreneur in Egypt, "Even if the PLO uses for its own interests our enthusiasm to make a contribution to building up the land of Palestine, I still want to invest, just to keep people from starving. It's the least that those of us abroad who have money can do." In contrast, investors who support the peace process think along political or politico-economic lines; they are aware of the importance of economics in bolstering the peace process although they are proceeding cautiously. Another businessman said, "Economics is the only solution to violence . . . yet setting up a business in the Palestinian territories under the current local conditions is riskier than in any other Arab country. We should be prepared to make some sacrifices, of course, but this doesn't mean that I am going to risk all my capital in this region. I still have to safeguard the base of strength here in the United States."

This brings us to another point: If economics is hostage to the political process, then is it not correct to say that economics is a remedy for every malady, including political maladies?

This last quote above expresses not simply the view of an individual, but represents a paradigm among American and Arab politicians, and Palestinian and Israeli politicians, too, for that matter, and the media. This paradigm says that the investments–especially the industrial investments–that are pumped into the Palestinian territories would solve the unemployment problem, which in turn would go a long way towards solving the political problem between the Israelis and the Palestinians. As one Arab leader said in a speech he made at the end of 1995, "Palestinians are throwing stones and blowing themselves up in suicide missions because they are jobless."

There is a long-term economic timeframe involved here (in the sense that the results of economic activity are not apparent in the short run), and the macro- and micro-level economic projects that have been approved by donor countries or the enterprises that Palestinian business people have promised to establish cannot quickly resolve the despair and unemployment that are the outcome of the temporarily drifting peace process. Some politicians take a purely economic viewpoint in their attempt to understand the dynamics of the violence that has resulted from the Arab-Israeli struggle, and end up designing regional economic projects without any reference to the micro level. They also imagine that the political problems have already been solved and that the time has come to integrate the Middle East into the global economy. However, globalization means more than simply the existence of huge transcontinental corporations; it also involves networks of small and medium-size companies. These last-mentioned are risk-averse and operate according to a logic of profit, in a short-term timeframe. This orientation ill suits the political logic for resolving the struggle, and besides this, these small and medium-size companies, which are so vital to the country's economic well-being, languish in a setting of social instability. The low level of investment made in the Palestinian territories by the diaspora Palestinians clearly shows that those active at the micro-economic level must have a certain minimum level of political stability if they are to invest.

Annex I

INDUSTRIAL INVESTMENTS IN THE PALESTINIAN TERRITORIES BY PALESTINIAN BUSINESS PEOPLE

TABLE 1. INDUSTRIAL INVESTMENTS IN THE PALESTINIAN TERRITORIES BY PALESTINIAN BUSINESS PEOPLE RESIDENT IN EGYPT

Name	Investments in operation	Number of businesses	Investment projects under study
Salem Abu Jabara			Manufacturing automotive spare parts and ready-made clothing
Mahmoud al-Farra and Sabri al-Farra	1. Contracting and trading company, Palestine. 2. Arab Contractors of Palestine–Othman Ahmad Othman and al-Farra brothers, with capital of $2 million (building Gaza airport, in addition to constructing three branches of the Egyptian Real Estate Bank in Gaza). 3. Sabour/Farra Company, Palestine, an engineering consulting company (in partnership with an Egyptian public sector company called Mohammad Hasan Sabour Company*. 4. Palestinian Company for Development, which began constructing a military housing complex in Amr (near Gaza City) in which apartments will be purchased through instalments. 5. Palestinian Flour Mill Company in Gaza.	5	Factory to manufacture oxygen welding rods, Gaza
Fahmi Farouq al-Husseini	Arab Consulting Engineers/Muharram and Bakhoum (in cooperation with the Egyptian firm Muharram and Bakhoum)	1	

Name	Investments in operation	Number of businesses	Investment projects under study
Jalil Mahna			Constructing 20 dunums of residential housing, under an agreement with the Palestinian Authority
Salah al-Reis	Gaza: construction company in partnership with Egyptian engineer Kamaal Zuhairi and a Swedish company. A contract was signed to build a children's hospital.	1	Building a 5-star hotel in Gaza
Sami Murtaja	Murtaja Real Estate: building a 4-star hotel in Gaza and constructing housing	1	Production line in Gaza of Murtaja Food Company of Egypt to make ghee, cooking oil and confectioneries
Khaleel Saraaf	Palestine-Egypt company for engineering construction, in partnership with the Egyptian Al-Naser Hassan Allaam Co.	1	
Yousef al-Shanti	Project to develop a shoe factory in Gaza	1	Factory to assemble coolers, stoves and automatic washing machines
Maher al-Sharfa			Industrial projects in Gaza
Ali al-Safadi	1. Participation in a flour mill with a capacity of 250 tons daily, in Gaza, at a cost of $5 million. 2. Participation in establishing a plant for desalination and for bottling desalinated well or sea water, at a cost of $5 million.	2	
Ali al-Jamaali	Opening a production line in Gaza of his Cairo factory to design and sew cotton items, in particular T-shirts.	1	

*When privately owned companies were nationalized during the time of Nasser, the company would continue to be called by the name of the previous owner.

TABLE 2. INDUSTRIAL INVESTMENTS IN THE PALESTINIAN TERRITORIES BY PALESTINIAN BUSINESS PEOPLE RESIDENT IN THE UNITED ARAB EMIRATES

Name	Investments under implementation
Abdu Salaam Husni al-Amir	Constructing a semi-charitable hospital, at an estimated cost of $2 million
Hussein Abu Aida	Opening Muayyid Company for Commerce and Construction, Gaza
Zuheir al-Alami	President of the board of directors of the engineering firm of Khatib and Alami, which studies and supervises the projects of the Arab Hotel Co. Shareholder in PADICO and in the Palestine Telecommunications Co. (PALTEL)
Naim Jadallah	Stocking factory in Tulkarm (one third family-owned)
Kamaal al-Ghufri	Islamic Architecture Co., for consultancy, in Gaza. Study and construction of an 18-storey tower costing $6 million, under construction. Samir Hotel, at a cost of $4 million, Construction of al-Wihda building, at a cost of $2 million, Naim al-Ghufri Building, $650,000; large hotel, with chalets, on 15 dunums of land.
Mohammad Abdel Aziz al-Baydi	Opening a branch of Gaza Contracting Co.
Subhi Qadeeh	Concrete ready mixer
Farouq Khaleel Touqan	Development of the industries of the Toukan Group in Nablus.
Jamaal Abu Issi	President of the board of directors of Salaam International. Gaza Business Centre: total investment of $65 million, with Salaam International owning $30 million of this.

TABLE 3. INDUSTRIAL INVESTMENTS IN THE PALESTINIAN TERRITORIES BY PALESTINIAN BUSINESS PEOPLE RESIDENT IN THE UNITED STATES

Name	Project under implementation	Project under study
Hassan al-Khatib	Setting up two factories for cosmetics and shampoo in Bethlehem	
Deen Dubaah		Shareholding company for constructing a residential town, $50 million
Jamaal Abu Hamaada		Palestine Fund Society, for manufacturing construction materials, $20 million
Amir Darweesh		Residential housing project
Qasem Natsheh	Manufacturing solar pumps	
Radi al-Ghanaam		Carpet-making enterprise
Awni Abu Hadabeh		Residential district
Walid Siyaam		Establishing an olive press to serve the local village community
Abu Sameer al-Noubani		Olive press
Ziyaad Karam	Construction of a $54 million hotel in Gaza	
Ghassan Barakat	Construction of a residential area	
Mohammed Qasas	Factory for bottling natural gas	

TABLE 4. INDUSTRIAL INVESTMENTS IN THE PALESTINIAN TERRITORIES BY PALESTINIAN BUSINESS PEOPLE RESIDENT IN JORDAN

Name	Project under implementation	Investment ventures under study
Habib al-Qadi	Confectionery factory	
Golden Mills (public shareholding company)	Flour mill in Nablus	
PADICO	Industrial city in Gaza, total investment of $25 million	
Tawfiq al-Fakhouri		President of the board of directors and principal shareholder of the industrial city in Jenin
Nidal Sukhtian	President of the board of directors of the Palestine Industrial Investment Co.; Palestine Poultry Co., with total investment of $25 million; other projects	

TABLE 5. INDUSTRIAL INVESTMENTS IN THE PALESTINIAN TERRITORIES BY PALESTINIAN BUSINESS PEOPLE RESIDENT IN OTHER COUNTRIES

Name	Place of residence	Investments under implementation	Industrial ventures under study
Nabil al-Shawa	London	Electricity generation station	
Milaad Shoufani	Canada		Modern factory for producing furniture
Mohammad al-Fahoum	Canada		Palestinian-Canadian partnership to manufacture pre-fab houses
Samih Hassan	Canada		Palestinian-Canadian company to manufacture aluminium profiles
Hasan al-Shawa	Canada	Modern flour mill	
Omar al-Aqaad (APIC)	Saudi Arabia	National Aluminum Profile Co. (NAPCO) PLC in Nablus; Siniora Meat Factories, Al Haya Food Industries (WLL) ; UNIPAL, a cigarette and food company. Shareholder in PALTEL	
Omar al-Dajani	Tunisia	Ready-made garment factory in the West Bank	
Radi al-Natsheh	Qatar	Furniture factory, Hebron	Factory to manufacture office chairs, Hebron

TABLE 6. INDUSTRIAL INVESTMENTS IN THE PALESTINIAN TERRITORIES BY PALESTINIAN BUSINESS PEOPLE RESIDENT IN ISRAEL

Name	Investment under implementation	Investment projects under study
Mohammed Abdel Qader		Project to construct a touristic and residential area in Jericho
Ibrahim Aref	Sewing workshops in the West Bank	
Mohammed Hassan	Islamic Butchery, Tulkarm	

Annex II

NUMBER OF PROJECTS IMPLEMENTED, BEING IMPLEMENTED OR UNDER STUDY

Country	Number of respondents answering the questionnaire	Projects already operational or under implementation		Projects under study	
		Productive industries	Construction industries	Productive industries	Construction industries
Egypt	52	4	8	4	2
United Arab Emirates	68	4	5	0	0
United States	49	4	2	3	2
Canada	45	1	0	2	0
Jordan	110	5	0	1	0
Lebanon	15	0	0	0	0
Syrian Arab Republic	21	0	0	0	0
Australia	7	0	0	0	0
United Kingdom	20	1	0	0	0
Israel	15	24	0	1	1
Other	3	5	0	1	0
Total	405	26	15	11	5

Part IV

INDUSTRY RELATIONS IN TEXTILES AND GARMENTS

THE IMPACT OF THE PEACE PROCESS ON LABOUR-INTENSIVE INDUSTRIES: AN ANALYTICAL VIEW OF THE TEXTILES AND GARMENT SECTOR

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Abundant literature on the implications of the peace process with regard to the economies of the region and with regard to the potential for Arab-Israeli cooperation was published in the 1990s. Several international and regional conferences and seminars were held on the subject, concentrating on the identification of joint projects as well as on scenarios for the future. One thesis that has been continuously discussed in the literature and in various forums is that a new division of labour may be expected in the region, whereby Israel will specialize in high-technology products, while Arab countries concentrate more on labour-intensive industries. However, little in-depth research has been carried out on the impact of the peace process on the industrial sector of ESCWA member countries, in order to assess properly the emerging industrial cross-border relations.

This paper is concerned with the impact of the peace process on the labour-intensive textiles and garment industry. The emphasis placed on textiles and garments stems from the fact that this branch is well-established and contributes significantly to total manufacturing output, value added, exports and employment in Egypt, Jordan and the West Bank and Gaza Strip, all of which are being greatly affected by the peace process. In addition, the textiles and garment branch of industry is one of the major contributors to total exports in Israel. Furthermore, textiles and garments have been selected in view of the fact that they are expected to be the most affected, positively or negatively, by the new patterns of economic relations in the region, as well as by international trade agreements and emerging economic blocs around the world. The impact that the new economic relations will have on this branch will depend, to a large extent, on the productivity of this branch and each country's comparative advantage and competitiveness in the export market.

It is important to explore whether a trend towards a new division of labour is currently developing or may be developed in the future and/or whether the current Israeli transfer of production of textiles and garments to neighbouring countries is a response to the profound crisis being faced by Israeli firms, a response that would allow them to continue to benefit from their accumulated competitive advantage gained earlier. This paper will focus on Israeli production strategy with regard to the sector, the factors that influence the siting of Israeli production, and the main forms of industry relations that are developing between Israel and its neighbours, including direct investment, subcontracting, joint ventures, and transfer of technology and know-how, as well as other industrial links. The paper will conclude with a possible scenario for the future.

The findings of this paper are based on a large body of literature and documentation, as well as on extensive interviews carried out with managers of textiles and garment companies in Egypt, Jordan and the area under the Palestinian Authority. Discussions were

held with representatives of around 50 companies that are involved in some way with Israeli textiles and garment firms, whether through subcontracting, joint ventures or other forms of industry relations.

A. THE ISSUE IN PERSPECTIVE

1. *The Israeli industry: an overview*

(a) *Structure of the industry*

The textiles and garment industry in Israel is a major industrial sector, accounting in 1995 for around 9% of total industrial output, 16% of total industrial employment and around 9% of total industrial exports (excluding exports of diamonds). The industry, which employs about 50,000 workers, consists of the following three main sectors:

Textile fibres, spinning of yarn, weaving and knitting of fabric
Dyeing, printing and other textile-finishing operations
Production of garments and finished goods such as household textiles

In 1995 the entire industry generated around $3.4 billion in sales revenues, with textiles and apparel accounting for 41% and 59% respectively of the total turnover. In terms of employment, the garment sector, which is more labour-intensive than the textiles sector, accounted for around 60% of total employment. Around one third of the production is exported. With a value of around $1 billion in 1995, it consists mainly of apparel products (more than 68% of total exports of the industry). The production of the textiles sector (fibres, yarn and fabrics) is geared to satisfying the needs of local garment companies, as exports of textiles account for only 24.5% of the total sales of this sector.

The industry is highly concentrated in terms of size, output and exports. Among the 446 companies that manufacture textiles, only 5 have more than 300 employees, and 29 have between 100 and 299 employees. In the manufacture of apparel, there are 2,368 companies that employ more than 5 workers; more than 95% of these companies employ between 5 and 50 people. Only 9 companies have more than 300 employees, and 53 have between 100 and 299 employees. The largest companies are vertically integrated, meaning that they are involved in all operations: spinning, weaving, dyeing, printing and garment manufacture.

The concentration of exports is reflected in the fact that only nine companies together account for more than 51% of all exports, and three for around one third of all exports, while a single company (Delta Galil) alone accounts for approximately 20% of all exports. Around 200 enterprises focus exclusively on exports, whereas all other companies (more than 2,000) concentrate their activities on the local market (the Israeli and Palestinian markets) or operate as subcontractors for the large enterprises.[1]

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[1] Israel Export Institute, *Israel's Textiles and Apparel Industry*, Israel Export Briefing (Tel Aviv: Israel Export Institute, June 1996).

(b) *Composition of exports of the garment sector*

Until 1992, before the application of import liberalization measures, Israel produced almost all its needs for apparel products. The main items exported by the sector comprise the following:

Knitted wear: knitted cotton shirts and underwear
Fashion wear: knitted young fashion and sportswear products
Men's suits, jeans and trousers
Swimwear
Infants' and children's wear, socks and pantyhose
Home textiles: towels and bed linen

With the exception of fashion wear, the products are generally produced on a large scale by the large export companies, which possess a relatively high degree of mechanization. Their production also involves a high degree of standardization, with little change in patterns or styles. This is in contrast to fashion-wear products, which are highly sensitive to fashion changes, meaning that they require frequent changes in styles (and have a low degree of standardization).[2]

Since the Israeli companies target the medium- to high-quality segments of the market (in Europe and North America), they need to compete in quality and price. Skilled labour is needed for mass production, but this labour can be trained relatively quickly. Fashion wear, on the other hand, is a more labour-intensive industry. Production generally involves small-sized workshops manufacturing a limited series of products for niche markets and requires highly qualified personnel with a great deal of experience.

2. *The problems encountered by Israel*

Since the early 1990s, the textiles and garment industry in Israel has faced a profound crisis, in view of the fast-changing international environment brought about by the global liberalization of trade and the related agreements of the World Trade Organization (WTO), the Euro-Mediterranean initiative, the liberalization of the global economy and the free rein given to market forces. Global events have had an impact at the country level, reflected in changes introduced by the Israeli Government in its economic and trade policies. The Government is also adopting other policies and measures that are making it more difficult for the textiles and garment sector to grow.

Under these conditions, the Israeli textiles and garment industry is facing increased competition in the export as well as in the local markets in view of the following:

(a) The high cost of labour in Israel. Israeli law requires that manufacturers pay a minimum wage of $695 per month (with taxes, this amounts to $900 for the employer). In

[2] See Gordon Hanson, "Incomplete contracts, risk, and ownership", *International Economic Review*, vol. 36, No. 2 (May 1995).

Jordan and other countries (particularly South-East Asian countries), the monthly salary may range from $50 to $150[3] and in the West Bank and Gaza Strip between $200 and $250;

(b) The implementation of the Uruguay Round agreements, which means greater international competition in the export market. The markets of Europe and North America, in which Israeli products enjoy free trade, will become more accessible to other countries, such as those from East Asia and Eastern Europe. By implementing these agreements, Israel will also suffer from increased competition in its local market, since the country is committed to reducing gradually the customs duties on imported garments, from 72% in 1995 to 12% in the year 2000;

(c) The new environmental regulations in Israel, which impose restrictions on the dyeing and printing of fabrics. These regulations require Israeli firms to introduce anti-pollution measures, thus increasing the cost of production and limiting the growth of this branch;

(d) A significant reduction of subcontracting arrangements with Palestinian firms. During the Israeli occupation of the West Bank and Gaza Strip, Israeli firms were able to take advantage of the lower labour costs in the occupied territories to subcontract part of their production to Palestinian sewing factories. Subcontracting arrangements developed rapidly and expanded tremendously during occupation; in the last two years, however, such arrangements have faced serious problems, related mainly to political instability and the frequent closure of the occupied territories. These problems have emerged at a time when Israeli companies urgently need to lower production costs in order to deal with the changes arising from regional and global events. Israeli firms therefore need to seek out cheap labour in other countries;

(e) The difficulties faced by the Israeli textiles and garment companies in obtaining loans from banks, as these latter consider the sector to be saturated, risky and of low profitability. High interest rates coupled with the relative stability of the Israeli new shekel (NIS) in recent years have increased the cost of financing; the foreign exchange rate has favoured imports over exports;

(f) The policy of the Textiles Administration at the Israeli Ministry of Industry and Trade, which focuses its support on new or expanding enterprises planning to invest in modern equipment and to introduce sophisticated manufacturing methods and conduct aggressive marketing strategies.[4] Small companies with somewhat outdated equipment that are not economically efficient are therefore hurt by the recent policy of the Ministry;

(g) The reduction of subsidies and incentives to industrial enterprises, and increased liberalization of the Israeli market. However, companies that operate in overseas markets are offered incentives by the Law for the Encouragement of Capital Investments, and

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[3] Assaf Nadiv, "Israel textiles in crisis: No alternative for Arab women", *Challenge*, No. 40 (November-December 1996) (translated from the Hebrew by *Challenge*).

[4] Israel Export Institute, *Israel's Textiles and Apparel Industry*.

a special fund helps companies operating in the local market to become more efficient and equip themselves with modern machinery.

The industry's state of crisis[5] is reflected in the following:

(a) Several factories in Israel have closed. A total of 59 small sewing factories closed in 1996, and 2,000 workers were laid off. Moreover, a total of 31 textile factories shut down entirely and 8 more cut their workforce in half during the period 1994-1996;[6]

(b) Investment in the sector has declined significantly since 1993. In terms of current prices, investment dropped by around 30%, from NIS 273 million in 1993 to NIS 200 million in 1995;[7]

(c) There has been continuous growth in imports since the early 1990s, in view of the gradual reduction in customs duties on imports of American and European textiles and garments, as stipulated in the relevant free-trade agreements. Imports grew faster than exports: for example, imports grew by 18% in 1995 compared with 8% for exports. The imports of apparel products grew more rapidly than the imports of raw materials and semi-finished goods: 21%, compared with 11%. The expansion of imports has adversely affected the companies producing for the local market, in particular the small enterprises.

The crisis of the Israeli textiles and garment industry will have implications for neighbouring countries, in the form of the development of new industrial links between Israeli and Arab firms. The textiles and garment sector in both Egypt and Jordan could take advantage of the crisis that is facing the Israeli sector by developing direct links with foreign firms through subcontracting or joint ventures and by benefiting from Israeli networks with foreign markets, as well as from Israeli technology and know-how.

B. ISRAELI PRODUCTION STRATEGY WITHIN THE PEACE PROCESS

In order to face the above-mentioned challenges, compete in the local and international market, and even survive, Israeli textiles and garment companies need to look for countries that can provide cheap labour to the sector. The developments that have taken place as the peace process unfolded have provided Israeli firms with opportunities to seek subcontracting or joint venture arrangements with Egyptian and Jordanian companies. The low labour costs in Egypt and Jordan and their geographical proximity to Israel are important factors in the development of industry relations.

However, labour costs cannot be considered the sole determinant in the location of Israeli production of textiles and garments; other important factors should be taken into consideration as well. Therefore, delocalization of Israeli production to lower-wage locations

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[5] For further details, see Blandine Destremau, "The restructuring of the Israeli garment industry", in these proceedings.

[6] Nadiv, op. cit.

[7] Israel Export Institute, *Israel's Textiles and Apparel Industry*.

needs to be considered with reference to the new international division of labour and to other factors that are shaping industry relations at the global level.

1. *The new international division of labour*

The activities of the Israeli companies in Egypt and Jordan, which began in 1995 as the peace process gathered momentum, cannot be dissociated from the global trends in the division of labour between industrialized and developing countries. In the old international division of labour, the role of developing countries was to supply cheap raw materials (for example, cotton) to the developed countries; this role has changed today to that of supplying cheap labour. This "new international division of labour" (NIDL) is characterized by the transfer of production, or part of it, from developed to developing countries, with the aim of taking advantage of the lower labour costs of the latter. The NIDL applies in particular to the labour-intensive garment industry, where labour accounts for around 60% of production costs.[8] The advantages to be gained by this transfer of production are thus important.

Delocalization of textiles and apparel production is neither new nor specific to Israeli firms. Industrialized countries, in particular European countries and the United States, began in the 1970s to delocalize garment production to low-wage areas in developing countries. Delocalization generally occurs either as a defensive measure that enables firms to retain their market share and survive fierce competition or as a measure to increase profits. The current trend observed in the transfer of Israeli garment production to neighbouring countries can be considered more as a survival and defensive measure, in view of the serious problems faced by Israeli firms (mentioned above) and the need to restructure the industry in the context of increased competition in the world market.

A major weakness of the NIDL concept is that it explains the specialization of each country in a certain type of production according to labour costs only. However, there are a number of other factors that also influence the location of production and that may explain delocalization. One important factor is related to the macroeconomic and political environment in the developing countries where the production would be located; the desired environment is characterized by political stability, a consistent macroeconomic policy, a business environment unburdened by excessive bureaucratic procedures, and the presence of a skilled labour force. Other important factors that also help determine the location of production are related to (a) the size and structure of the parent firm; (b) the nature of the product itself; (c) the technological content of the product; and (d) the trade policy and international trade agreements of the countries in question. The fact that the United States and the countries of the EU are still major world producers of garments indicates clearly the influence of factors other than labour costs on the siting of production. All these factors will be taken into consideration below to explain the current behaviour of Israeli garment firms as well as the expected future trend of the delocalization process.

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[8] Michael Scheffer, *The Changing Map of European Textiles: Production and Sourcing Strategies of Textile and Clothing* (Brussels: L'Observatoire Européen du Textile et de l'Habillement, 1994).

2. *"Triangle manufacturing", or delocalization of production*

(a) *The concept*

Israeli exporters of garments usually produce according to specifications set by the importing foreign company or according to a design proposed by the Israeli company and agreed upon with the foreign firm. The arrangement with the foreign firm also entails the use of certain yarn and fabric, which may be produced locally or imported. In view of the high cost of labour in Israel, the Israeli firm subcontracts part of the production to sewing factories in its Arab neighbours. The mechanism by which American and European firms place orders with companies in Israel, which in turn subcontract part of the work to factories in lower-wage locations such as Egypt, Jordan and the West Bank and the Gaza Strip, is known as "triangle manufacturing".[9] The delocalization of production thus entails the relocation of production to areas or countries with lower labour costs.

(b) *Historical factors*

"Triangle manufacturing", through the delocalization of Israeli production, began in the 1970s, when the garment industry began a period of significant development. Until the early 1970s, the textiles and garment sector concentrated on spinning and weaving mills, which were heavily protected by the Government. The apparel industry consisted of small workshops producing mainly for the local market. In the early 1970s, however, several factors contributed to rapid growth in the production and export of garments:

(a) The changes introduced by Israel in its economic and industrial policies, to promote apparel manufacturing and exports, which have provided various incentives to the sector and encouraged higher value added products.

(b) The free-trade agreement signed with the European Community in 1975, which gave a boost to Israeli exports of garments to Europe. As a result of this agreement, European countries absorbed around 90% of Israeli textiles and apparel exports in 1980.

(c) The use of cheaper labour (mainly female) from the Arab Druse areas in the north of Israel.

(d) The military occupation of the West Bank and Gaza Strip in 1967, which provided Israeli firms not only with abundant and cheap labour but also with the opportunity to expand their local market to these territories.

All these factors provided Israeli industry with opportunities to grow and to compete in the international market, in particular in Europe and later in the United States, following the signing of a free-trade agreement with the United States in 1985.

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[9] Brad Christerson and Richard P. Appelbaum, "Global and local subcontracting: space, ethnicity, and the organization of apparel production", *World Development*, vol. 23, No. 8 (1995), pp. 1363-1374.

(c) *Strategy alternatives*

In order to meet growing export market demand and increase profits, part of Israeli production was delocalized to lower-wage locations in the occupied territories and in the Arab areas in the north of Israel. The production strategy followed by Israeli companies has witnessed a significant change, however, with the developments that took place in the peace process and with the textiles and garment industry crisis that began in the early 1990s. The production strategies[10] that have been followed by Israeli companies can be summarized as follows:

(a) *Delocalization through subcontracting.* This entails a partial withdrawal from integrated production and the subcontracting of part of the production to factories outside Israel. Subcontracting of garments involves the making-up by a third party of materials owned by the manufacturer, according to the latter's specifications. In the early 1970s, Israeli firms started to subcontract part of their production to sewing factories in the West Bank and the Gaza Strip. In such an arrangement, the Israeli company usually designs the product, prepares the patterns, cuts the fabric and sends it together with a sample to the Palestinian firm to do the actual sewing and in some cases the finishing. The product is then returned to Israel. Since 1995, Israeli firms have been subcontracting production in Egypt and Jordan. The forms and mechanisms of the subcontracting arrangements with these countries will be reviewed below in the present study;

(b) *Disintegration to domestic subcontracting.* This involves a withdrawal from integrated production in favour of local subcontractors. Israeli garment firms have subcontracted part of their work to small factories established in Arab zones in Israel, mainly in the north, with the aim of taking advantage of the lower labour costs of Arab (mainly Druse) women;

(c) *Delocalization of subcontracting.* This means the replacement of local and Palestinian subcontractors by foreign subcontractors. The frequent closures of the occupied territories, as well as new Israeli restrictions regarding the movement of goods and people, are a hindrance to the subcontracting relations between Israeli and Palestinian firms. This has led several Israeli companies to delocalize subcontracting from the occupied territories to Egypt and Jordan. The implementation of the peace process and the opportunities subsequently offered by the low labour costs in these two countries have also encouraged Israeli firms to replace local subcontractors (Arab Israelis) with subcontractors in Egypt and Jordan. Delocalization of subcontracting has resulted in the closure of several factories in Israel, as indicated above;

(d) *Delocalization through direct investment abroad.* This entails the development of foreign production at the expense of domestic production. A number of large Israeli companies have transferred part of their integrated production (production of fabrics

[10] For a definition of various production strategies followed by international garment firms, see Scheffer, op. cit.

and garments) by establishing directly-owned factories and joint ventures in Egypt and Jordan;

(e) *Outward sourcing of integrated production.* This involves the placement of orders by the principal (the Israeli company) with suppliers in low-cost countries to produce textiles and garments according to specifications determined by the principal. This is currently practised in Egypt by Israeli companies, which play the role of mediator between the foreign firm and the Egyptian firm.

(d) *Industry specialization*

In order to survive and compete in the international market, Israeli textiles and garment export companies are producing for the upper end of the market. For that purpose, they need to develop new fabrics and novel products, place greater emphasis on design, and introduce sophisticated, computer-based machinery as well as modern manufacturing methods and management techniques. To do this, Israeli companies would need to specialize in the following:

(a) *Marketing and the securing of export markets.* Israeli companies have developed strong networks with foreign companies, in particular in Europe and the United States, in whose markets they enjoy preferential treatment;

(b) *Garment design.* Israeli garment companies are well advanced in the design of patterns that meet the tastes of Western consumers. Several well-known foreign garment companies rely on designs made in Israel;

(c) *Transferring know-how to neighbouring countries.* This know-how relates to the production of specialty fabric and to the use of modern machinery and advanced production processes. Israeli companies have been able to innovate by producing special, high-quality fabric and by introducing modern, computerized sewing machines.

C. FACTORS INFLUENCING THE LOCATION OF PRODUCTION

Several factors influence the selection of a new location for production. As indicated above, labour costs alone cannot justify the delocalization of production to lower-wage locations. Other equally important factors have an impact on the selection of a new location for production. These factors are related to trade regulations and policies, political stability and the business environment, the availability of fabric, the quality of the product, the fashion sensitivity of the product, and delivery times.

1. *Production costs and quality*

Labour costs can be considered an important factor in the transfer of production from Israel to its neighbours. Among these, Egypt has the lowest wages ($60 to $90 monthly), followed by Jordan ($100 to $150 monthly) and the West Bank and Gaza Strip ($250 to $300 monthly). These costs are low when compared with the average wage in the textiles and apparel sector in Israel ($900 monthly).

Although women's dresses and men's suits are among the most labour-intensive apparel products, less labour-intensive products–such as T-shirts, shirts and underwear, the production lines for which utilize automation–are to a greater extent being subcontracted in neighbouring countries or sourced (in particular in Egypt). It is the basic non-fashion goods whose production is being transferred to neighbouring countries. This may be explained by the fact that large Israeli exporters focus on mass-production products, which can be easily transferred to Egypt or Jordan. The skilled labour necessary for such production can be trained in a relatively short time, and the introduction of computerized and more automated sewing machines by the Israelis helps to reduce the worker's margin of error.

According to a 1996 study prepared by the Israel Export Institute, full ownership of a factory in Egypt or Jordan is more profitable than a joint venture, which in turn is more profitable than subcontracting. Transferring Israeli production to Egypt is more profitable than to Jordan, because of the lower labour costs in Egypt.[11] Production costs increase in joint ventures and subcontracting because the Israeli manufacturer must frequently send technicians to help the local workers learn to utilize the machinery in an efficient manner, to provide them with on-the-job training and to carry out quality control. This additional cost is negligible in the case of Palestinian subcontractors, in view of the proximity of the occupied territories and also because of the lengthier experience of the Palestinian subcontractors. In this regard, Jordan is closer to Israel than Egypt is, and therefore the cost of transporting people and goods back and forth from Israel is lower than for Egypt. This explains why subcontracting arrangements in Egypt witnessed a decline recently in favour of other forms of industry relations.

2. *Political stability and the business environment*

Should political stability prevail in the occupied territories, the Israeli producers will not find it necessary to move part of their garment production to Egypt or Jordan. Although wages are higher in the occupied territories than in Egypt or Jordan, the Palestinian sewing factories present several advantages: long experience with Israeli manufacturers, confidence built up over the course of more than 20 years, a trained workforce, geographical proximity and lower transportation costs, daily contact between Israeli and Palestinian firms, fewer bureaucratic procedures at the border, integrated economies, and easy banking transactions.

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[11] Israel, Export Institute, *Prospects for Joint Cooperation in the Textile Industry between Israel, Egypt and Jordan*, unpublished study, 1996 (Hebrew original).

When comparisons are drawn between Egypt and Jordan, however, operations in Jordan are generally considered easier for the following main reasons:

(a) There are fewer bureaucratic procedures in Jordan, and Israelis can obtain visas more quickly;

(b) Relations with Jordanians are easier, the latter showing more readiness to cooperate with Israelis; in Egypt the business community is generally more reluctant to engage in relations with Israelis.

3. *Delivery time*

Delivery time is an important factor in selecting a production site. The importance of delivery time is greater for products that are highly fashion-sensitive, since these must respond quickly to changes in fashion and design; this is even more particularly the case for those products that target small market niches. A quick change in the design of a product sometimes needs to be undertaken by the manufacturer in order to meet the requirements of the market. Quick delivery time in this case is more important than low labour cost.

As indicated above, frequent closure of the occupied territories and political instability make it more difficult for Palestinian sewing factories to deliver goods on time; delivery schedules are more likely to be met by Egyptian and Jordanian companies. Israeli firms face some problems in Egypt and Jordan, mainly owing to the bureaucratic and administrative procedures involved in transporting fabric from Israel to these countries and transporting the finished product back to Israel. In Jordan, the problems are related to bureaucratic procedures: delays in clearing customs in Amman and in processing the required financial guarantees, the inadequate infrastructure of Jordanian customs at the border, and other problems. It takes up to 8-10 days to transport the precut fabric from Israel and to return the finished product to Israel. Such delays are significant in view of the commitment Israeli companies have to the foreign firms to deliver products on time.

4. *Fabric availability*

The availability, or the potential for the production, of high-quality local fabric is another important factor in the behaviour of Israeli firms. Such availability enables Israeli firms to delocalize their integrated production to neighbouring countries and also to cope with the requirements of the rules of origin stipulated in Israel's various trade agreements, in particular those with the member countries of the European Union.

Egypt has the advantage over Jordan in that it has a developed infrastructure in the textiles sector: yarn and fabric are manufactured locally using available raw materials (cotton) or imported thread. Israeli firms that produce in Egypt for export to the European Union can easily overcome the problems associated with the rules of origin, since all the steps of production can be executed in Egypt. This is not currently possible in Jordan.

Israeli firms are taking advantage of the existence of spinning, weaving and knitting factories in Egypt, with the aim of vertically integrating their operations. Arrangements have been made between Delta Company and Egyptian textiles and garment companies for the production of knitted fabric and garments. For example, the Delta factory in the Cairo free zone produces underwear and T-shirts for Marks and Spencer, using Egyptian knitted fabric produced from thread imported from India. The fabric is printed and dyed by Egyptian companies. Two private Egyptian companies supply the fabric to the Delta factory, while two others undertake the dyeing and printing; the companies working for Delta have been accredited by Marks and Spencer. The availability of fabric in Egypt has led some Israeli companies to source the production of garments from several Egyptian companies.

Delta Company initiated contacts with the Jordan Spinning and Weaving Company, with the aim of using the Company's facilities to produce the fabric needed for its garment production in Jordan. Delta has proposed to provide the know-how and technology needed for the production of the fabric. In this way, Delta Company and other Israeli firms would be able to export directly from Egypt and Jordan to Europe and still abide by EU regulations on rules of origin.

Another large Israeli exporter, Lodzia Company, which is currently subcontracting sewing operations in Jordan, is planning to transfer its production of fabric to Jordan, in particular the printing and dyeing stages. In addition to the above-mentioned advantages of transferring such production to neighbouring countries, Israeli companies can produce the needed fabric at a lower cost in view of the strict environmental and pollution regulations in Israel.

5. *Trade agreements and regulations*

Since the main export market of Israel consists of Europe and the United States, Israeli producers wishing to delocalize production to neighbouring countries must take into consideration the free-trade agreements the Government of Israel has with the European Union, the United States and the European Free-Trade Association (EFTA),[12] as well as the trade regulations that govern the export of textiles and garments from Egypt, Jordan and the area under the Palestinian Authority to Europe and the United States.

The type of industry relations to be established with Egypt and Jordan, as well as the nature of the delocalized production, will therefore be determined by the above-mentioned trade agreements and regulations. The free-trade agreements provide Israeli exports with an exemption from customs duties, each of them stipulating the different conditions under which Israeli textiles and garments are to enjoy duty-free access to the market in question.

[12] EFTA, comprising the following countries: Austria, Finland, Iceland, Liechtenstein, Norway, Sweden and Switzerland.

(a) *Agreement with the European Union*

Signed in 1975, this agreement provided Israeli exports to the European Union (except for processed agricultural products) with a gradual reduction of customs tariffs, such that free entry of Israeli products was to be reached in 1977, while total tariff exemption on EU exports to Israel was to be gradually implemented, a process scheduled to be completed in 1985; however, the 100% tariff abolition on EU exports was reached only in 1989.

By imposing rules of origin, the agreement with the European Union puts limits on Israeli companies desiring to subcontract part of their production of textiles and garments in Egypt or Jordan. To be eligible for the benefits of the agreement, a product must either (a) wholly originate within the territory of one of the parties or (b) be a product that has undergone "sufficient working or processing", provided it receives a different tariff classification from the classification of the component parts.[13] The agreement permits application of the "cumulative" origin rule only for a product that has been processed from raw materials originating from European Union countries, provided it has undergone "sufficient processing and work". The "cumulative" principle means that a product can be processed in two countries, and its value added is considered as originating from one country. The "cumulative" principle does not apply between Israel and either Egypt or Jordan, unless these countries agree to be governed by a free-trade arrangement. In this respect, it should be noted that a garment product, for example, should be sewn from fabric produced in Israel or originating from one of the European Union countries.[14] Furthermore, according to the agreement, the goods must be transported directly between the parties, although they may temporarily pass through other territories.

On the other hand, cooperation agreements were signed between the European Union and some of the Mediterranean countries and areas such as Egypt, Jordan, Lebanon, the Syrian Arab Republic and the West Bank and Gaza Strip. According to the EU agreement with the Mediterranean countries, customs duties on products originating in these countries and areas were progressively abolished, with complete elimination by January 1993.[15] The same rules of origin that are in force with Israel apply to the other Mediterranean countries.

Negotiations are currently under way for a Euro-Mediterranean agreement between the European Union and Egypt, Jordan and Lebanon. The agreement is expected to provide for a free-trade area with the European Union by the year 2010, like the agreement that was signed in 1995 with Morocco and Tunisia. The garment sector should benefit from such an agreement.

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[13] Yehuda Raveh and Co., *Free Trade from Egypt, Jordan, Syria and other Middle Eastern States to the United States of America, the European Community and EFTA via Jerusalem* (Jerusalem, October 1993).

[14] Israel Export Institute, *Prospects for Joint Cooperation in the Textile Industry between Israel, Egypt and Jordan*, unpublished study, 1996 (Hebrew original).

[15] United Nations Conference on Trade and Development (UNCTAD), *Handbook on the Trade Aspects of the Cooperation Agreements between the European Union and Selected Mediterranean Countries (UNCTAD/ID/GSP/19)*, December 1994.

In view of the above, Israeli textiles and garment companies cannot subcontract sewing operations in Egypt or Jordan to take advantage of the cheap labour there if they wish to export to EU countries. However, these companies utilize the following mechanisms to overcome the obstacles put up by the rules of origin:

(a) Carrying out the design in Israel and securing the export market. In this case, fabric may be imported from Europe to Egypt or Jordan, processed into a finished garment product and then exported to one of the EU countries. The role of the Israeli firm also involves providing the necessary know-how and the quality control, as well as supervising the production. This mechanism is being currently used by Israeli producers (Castro Company), in particular in Jordan;

(b) Exporting fabric from Israel or from a third country to one of the European countries, and "endogenizing" the fabric by paying customs duties. Endogenization means that the fabric becomes a European fabric, which is then exported to Egypt or Jordan for further processing into garments. In this way, the Egyptian or Jordanian company can meet the requirements of the rules of origin and export the garments to Europe duty-free. One Israeli firm, Bagir Company, operates in this way, by placing orders with an Egyptian company; the suits are exported to Marks and Spencer;

(c) Transferring the production of fabric to Egypt or Jordan (with Israeli know-how), carrying out the design, securing the export market and manufacturing the finished garment product in one of these two countries. Delta Galil Company of Israel operates in this way in Egypt, by sourcing fabric and garments from local suppliers. Attempts are being made by the same Israeli company to produce fabric in Jordan;

(d) Transferring all the production to Egypt or Jordan through the establishment of a 100% Israeli-owned factory. Delta Company established a factory in the Cairo free zone that exports underwear and T-shirts to Marks and Spencer;

(e) A mechanism that may be used in the near future: the establishment of a free-trade area between Israel and Jordan, or between Israel and Egypt. Under such an arrangement, the "cumulative" origin rule will apply as it is currently applied for Algeria, Morocco and Tunisia. The establishment of a free industrial zone between Israel and Egypt or Jordan is also another option, provided that the zone is established on the Israeli side. Currently, some Jordanian and Israeli firms are calling on the European Union to accept the cumulative rules of origin between the two countries.

(b) *Agreement with the United States*

The United States-Israel Free-Trade Agreement, signed in 1985, provided for the gradual elimination of all tariffs between the two countries by 1995. The Agreement also permits the entry of goods, including textiles and garment products, without any quotas. The rules of origin that govern Israeli exports to the United States differ radically from those applied in the agreement with the European Union. In order to be considered as an Israeli

product and be eligible for duty-free entry into the United States, the product must satisfy the following conditions:

(a) The components of the product should have undergone a material alteration;

(b) Thirty-five per cent of the value added should be the result of work executed in Israel;

(c) The product should have been shipped directly from Israel to the United States.

Under this Agreement, cutting the fabric, for example, is considered the stage where the alteration of the materials took place, which means that Israeli companies can execute the sewing stage in neighbouring countries and benefit from the advantages of the Agreement, provided that 35% of the value of the final product has been worked in Israel and that the product is dispatched directly from Israel to the United States. The terms of this Agreement, in fact, enable several Israeli companies to subcontract the sewing and in some cases the finishing operations to firms in Egypt or Jordan. In this respect, it is noteworthy that the new, stricter regulations of 1996 governing the determination of origin for countries with which the United States has trade agreements do not apply to Israel. Under these new regulations, the country of origin for an apparel product, for example, is considered to be the country where the garment was sewn.[16]

In view of the preferential treatment Israeli goods have in the American market (no quotas and no customs duties), Israeli exporters find it more profitable to subcontract part of the operation in Egypt or Jordan, and export the finished products from Israel, rather than from Egypt or Jordan. Jordanian garment goods are not exempt from customs in the United States, though they are not subject to quota restrictions. Egyptian yarn and fabric, as well as cotton-based apparel products, are subject to quotas, and all products are subject to customs duties in the United States.

(c) *Agreement with EFTA*

Signed in 1993, the Free-Trade Agreement between Israel and EFTA provides for immediate and full elimination of most tariffs and duties. This Agreement is similar to the agreement with the European Union, as the same rules of origin apply.

D. DELOCALIZATION OF PRODUCTION

Israeli companies are transferring the production of textiles and garments to the occupied territories, Egypt and Jordan through one or more of the following types of arrangements: subcontracting; sourcing and placement of orders; joint ventures; and

[16] Israel Export Institute, *Prospects for Joint Cooperation in the Textile Industry between Israel, Egypt and Jordan*, unpublished study, 1996 (Hebrew original).

establishment of a factory with 100% Israeli ownership. In the occupied territories, subcontracting arrangements are the only means of delocalizing Israeli production, but in Jordan, delocalization is carried out through subcontracting and joint ventures, and in Egypt through all four types mentioned above. These types of arrangements in industry relations will be reviewed and assessed, with the aim of understanding the current trends and the potential for future relations between Israel and its neighbours.

1. *Subcontracting*

(a) *Forms and mechanisms*

(i) *Forms*

The manufacturer may subcontract one or more of the following operations in the production of apparel products, depending on the cost of subcontracting operations and the skills of the subcontractor: preparing the patterns according to specification; cutting the fabric; sewing and assembling the parts of the garment; trimming; and finishing, including washing, ironing and packing. It should be noted that in subcontracting, the materials are owned by the manufacturer.

Many aspects of subcontracting arrangements in Egypt, Jordan and the occupied territories are identical. They may take the following forms:

(a) The Israeli firm supplies the subcontractor with precut fabric to be sewn; the semi-finished product is returned to Israel for finishing and packing;

(b) The sewing, finishing and packing operations are undertaken by the Arab company, using precut fabric from Israel, and the finished product is returned to Israel. In Jordan, in some cases, the quality control is undertaken by representatives of the Israeli manufacturer at the site of the subcontractor's company itself;

(c) Cutting, sewing, finishing and packing operations are undertaken by the Jordanian or Palestinian company. In Jordan, in particular, the cutting of the fabric is undertaken in special cases when export will be made from Jordan directly to Europe. In this case, the European fabric is imported by the Israeli company and is cut in Jordan according to specification; the finished product is not returned to Israel but is directly exported from Jordan to Europe. Quality control is carried out by representatives of the Israeli company in the factory. It should be noted that according to the trade agreement between Jordan and the European Union, exports of ready-made garments using European fabric enjoy duty-free entry to Europe;

(d) All operations, from preparing patterns according to specification to cutting the fabric, to sewing and finishing, are undertaken by the subcontractor. The fabric in this case is provided by the manufacturer. There are, however, very few companies in the West Bank that undertake all the above operations, and none in Jordan. These companies are large (such as Badran Company in Tulkarm), with more than 300 employees. Badran Company

produces for well-known companies such as Arrow and Timberland, but through the Israeli firm which supplies the fabric and secures the export market, and which thus plays the role of mediator and marketing agent.

(ii) *Mechanisms of subcontracting arrangements*

Israeli firms are able to monitor and control subcontracted work on a daily basis in the West Bank and Gaza Strip, but Israelis cannot commute daily to Egypt, or even to Jordan, where a full day of travel is needed (in view of the time spent crossing the border). In the West Bank and the Gaza Strip, the presence of Israeli technicians is now less necessary (except in cases where the latest machinery is being used) because of the extensive experience, skills and know-how acquired by the Palestinian subcontractors over more than 20 years. In Jordan, however, Israeli firms have encountered serious difficulties. The major problem has been the inexperience of the Jordanian garment companies, which are unable to produce high-quality products according to Israeli specifications, because of poor management and an unskilled and inexperienced labour force, among other things. In order to solve this problem, Israeli firms are taking one or both of the following measures:

(a) Placement of one or more Israeli technicians–often of Arab origin–in the Jordanian factories to guide the workers, provide on-the-job training, and monitor and control their work, as well as to assist in the management of production. The technician undertakes quality control at each step of the production process. Israeli technicians also provide training in the Israeli companies to key personnel from the Jordanian factories. It should be noted that representatives of the Israeli and/or foreign company carry out quality control inspections on a sample of the production at the site (that is, at the Jordanian company). Owners of Jordanian companies mention several advantages gained in subcontracting: transfer of know-how; better management of production; higher quality of products; and better-skilled labour. In some cases, Israeli companies use the services of Palestinian technicians.

(b) Use of Palestinian garment factories as an intermediary. In one case, a well-established Palestinian garment company in the West Bank established an office in Jordan in early 1995 that operates as an intermediary between an Israeli company and Jordanian firms. The office receives the orders from the Israeli company, cuts the fabric in Jordan and subcontracts the sewing, finishing and packing to a number of Jordanian garment factories. The strength of the intermediate company lies in the following:

(i) The quality of work undertaken by the Palestinian company is well known by the Israeli companies; strong business relationships and trust have been built during the last 20 years;

(ii) The intermediate company was able to make available a number of skilled technicians from the West Bank to assist the Jordanian garment factories in carrying out the work. In this case, the technician manages and controls all operations in production, with the aim of ensuring high-quality output. The technician provides on-the-job training to the Jordanian workers and

undertakes the necessary quality control at each step of the production process.

Under such a subcontracting arrangement, the Israeli firm serves only as a marketing company that secures the orders from foreign firms and supplies the fabric; the Palestinian company plays the role of intermediary and transfers know-how to Jordanian factories.

The poor quality of labour in Jordanian garment factories explains why many Israeli companies involved in subcontracting work in Jordan find that they cannot succeed without arranging to maintain a physical presence there. Only a few Israeli companies have so far been successful in Jordan.

(iii) *The nature of subcontracting firms in Jordan and the area under the Palestinian Authority*

The large Jordanian enterprises and those that are well established in the market have not shown a particular interest in working for Israeli garment companies for the following reasons:

(a) The Jordanian companies operate at almost full capacity and do not face serious problems in marketing either in the local or the export market;

(b) They consider the profit margin to be relatively low in subcontracting;

(c) Since the subcontracted work will be sold in the Israeli and the export markets under an Israeli name, they are not able to develop a brand name;

(d) They are not ready to bear the risks associated with the possibility that the Israeli companies will not commit themselves to providing a long-term, regular and continuous supply of subcontracting work;

(e) They prefer to work as partners (on an equal footing) with the Israeli companies and not merely as labourers that are dominated and exploited;

(f) They are politically cautious in view of the resistance of a segment of the labour force in Jordan to the idea of working for Israel (for political and religious reasons).

However, a number of Jordanian garment factories are becoming increasingly involved in subcontracting arrangements with Israeli firms. The factories which have shown an interest and which have started to work for Israeli companies are those which have the following characteristics:

(a) They are generally medium-sized companies, and most of them are newly established (in the 1990s). They generally have more than 100 machines;

(b) They suffer serious problems in competing in the local and export market and operate at less than 50% of their production capacity. These companies view subcontracting as an opportunity to use their idle capacity, so as to begin to turn a profit;

(c) They have been producing low-quality garments and are managing production poorly;

(d) In some cases, new companies have been established specifically to take advantage of the opportunities subcontracting is offering.

It is noteworthy here that the Israeli firms which subcontract part of their production to companies in Egypt or in Jordan are large exporters producing non-fashion garments on a large scale; they therefore must subcontract production to large or at least medium-sized enterprises, and not to small firms. The same holds true for those Israeli exporters subcontracting to companies in the West Bank and the Gaza Strip; most of the small Palestinian sewing factories work for small-scale Israeli workshops that cater mainly to the needs of the local Israeli market.

(b) *Subcontracting relations: risk, trust and domination*[17]

(i) *Control and bargaining power in subcontracting relations*

Subcontracting entails a relationship of dependence on the part of the subcontractor *vis-à-vis* the manufacturer (or client). The subcontracting agreement is in many respects similar to a work contract, which is generally in favour of the employer. As in the relation of employer/labourer, the manufacturer controls the work of the subcontractor with regard to the quantity and quality of work and the time in which it is to be completed. Unlike the worker in an employer/labourer contract, however, the subcontractor generally owns the factors of production (the machines) and controls the management of the concerned enterprise.

A number of factors place the subcontractor in a weak position *vis-à-vis* the manufacturer. The dependence of the subcontractor is greater when: the subcontractor comes from a country that is under the economic and political domination of the manufacturer's country (obviously); the subcontractor works mainly for one client (manufacturer); the enterprise is small in size; or the assets of the enterprise have a low degree of substitution.[18] These factors are reviewed below:

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17 The section related to the occupied territories in subcontracting relations (risk, trust and domination) is based on A. Mansour and Blandine Destremau, "Palestine and Israel: subcontracting relations in the garment industry" (Ramallah: Palestine Economic Policy Research Institute [MAS], December 1997).

18 Bernard Baudry, *Contrat, Autorité et Confiance: une étude des mécanismes de coordination dans la relation de sous-traitance* (Grenoble, France: Université Pierre Mendes France, Institut de Recherche sur la Production et le Développement [IREPD], January 1993).

(a) *Economic and political domination.* There is no doubt that the dependence of the Palestinian firm is greater than that of the Egyptian or Jordanian subcontractor, in view of Israel's economic domination and control over the occupied territories. During occupation, the Palestinian population was repressed and the Palestinian economy was completely dependent on Israel. The dependence of the Palestinian firms continued after the Oslo peace accords (though it took on different forms), since Israel continues to consider its relation with the occupied territories as one of domination and control. Furthermore, the frequent closure of the occupied territories has prevented the owners of Palestinian sewing factories from negotiating prices directly with the manufacturer, who exploits the closure to impose a price of the piece of the product; later he often reduces it or delays payment; and the subcontractor can do little to oppose this treatment. The absence of a formal contract between the two parties puts the subcontractor in an even weaker position.

(b) *Dependence on one client.* Dependence is greater when the subcontractor realizes a significant portion of its total sales from one client (manufacturer). The situation is different for Palestinian subcontractors than for either Egyptian or Jordanian subcontractors. During occupation, subcontractors in the occupied territories would work for several Israeli manufacturers at the same time. Since the Oslo peace accords, few of them have subcontracting arrangements with more than one or two Israeli manufacturers, and few are able to substitute one manufacturer for another. The restrictions imposed on the movement of people from the occupied territories to Israel have made it extremely difficult for Palestinian firms to contact new manufacturers, and they therefore become dependent on one manufacturer to secure revenue. Furthermore, Palestinian firms cannot shift production to the local market, in view of the limited size of the market in comparison with production capacities; under these conditions, the fact that there are so many sewing factories in the West Bank and the Gaza Strip further weakens the position of the Palestinian subcontractors. The closure of the occupied territories, which places Israeli firms in a stronger position in their relations with Palestinian subcontractors, nevertheless has its disadvantages for Israeli firms, as the latter must seek out low-wage locations in neighbouring countries in order to survive and increase their ability to compete in the international market.

The bargaining power of the Egyptian or Jordanian companies is greater in subcontracting relations with Israeli firms. In Jordan, the limited number of companies that are prepared to work under subcontracting arrangements places these companies in a better bargaining position with respect to Israeli manufacturers. According to managers of Jordanian garment companies, several Israeli firms have approached them to undertake subcontracting work; the demand generated by Israeli firms is much greater than the existing production capacities in Jordan. New firms are being created in Jordan to exploit the opportunities of operating under subcontracting arrangements.

In Egypt, although the production capacities for garments are quite large, the reluctance of most Egyptian sewing factories to cooperate with Israeli manufacturers (for political reasons) has undermined the bargaining power of the latter.

(c) *Dependence and size of the enterprise.* The dependence of the subcontractor is greater when the enterprise is small in size, since this means that the

manufacturer can easily replace its services with those of another enterprise. The small size of most Palestinian sewing factories, in addition to their large numbers, places them in a weak position *vis-à-vis* Israeli manufacturers. The subcontractor in this case has no choice but to accept the conditions imposed by the Israeli manufacturer if he wishes to continue receiving orders, since the frequent border closures and the current depressed market put the Palestinian subcontractors in an unfavourable bargaining position. The negotiating position of the subcontractor is also weakened by the fact that he is not able to make regular visits to the manufacturer supplying the work and to select the most profitable business opportunities.

In contrast to the West Bank and the Gaza Strip, the enterprises working under subcontracting arrangements in Egypt and Jordan are generally of medium size. Small-scale enterprises in Egypt and Jordan cannot yet meet the requirements of the large Israeli exporters in terms of quality, quantity and delivery time. In the occupied territories, most subcontracting arrangements are initiated by small-scale Israeli enterprises and aim at meeting the needs of the local market in Israel, with only a portion destined for the export market.

(d) *Dependence and degree of substitution of assets.* The dependence of the subcontractor is greater when the assets of the enterprise have a low degree of substitution, which means that the subcontractor cannot redeploy his assets quickly and without cost, to meet the requirements of another client. Since most subcontracting takes place at the sewing stage, the redeployment of machines to meet the requirements of another manufacturer can be done without serious difficulty, although in some cases the subcontractor needs to buy certain specialized and computerized machines to carry out specific operations for the manufacturer. In the occupied territories, before the frequent border closures, Palestinian subcontractors would work for several manufacturers and did not have to deal with the problem of changing their assets. The same applies to Egypt and Jordan. In Jordan, for example, one garment company that worked under a subcontracting arrangement with a large Israeli producer (Lodzia Company) stopped operations with the latter company after about one year. It now works with another Israeli company (under a joint venture agreement) without having introduced any major changes in the assets (machines). The reason that the Jordanian company changed to another type of arrangement was that subcontracting was not very profitable. It is noteworthy that this particular Jordanian company has around 100 machines, employs 150 workers and produces an average of 6,000 T-shirts per day. The relatively high degree of substitution in its sewing operations gives the subcontractor greater flexibility in meeting the needs of Israeli manufacturers.

(ii) *Risk and trust in subcontracting relations*

Subcontracting agreements cannot be reduced to a simple market relation, where price is determined only by supply and demand, and where the selection of the subcontractor by the manufacturer is based only on price and quality. In addition to the price factor, other factors –risks and uncertainty, trust and confidence –determine the selection of the subcontractor. For the manufacturer, the elements of risk and uncertainty must be faced from the time the contract is effected to the time the product is manufactured by the subcontractor. This uncertainty results from the difficulty the client has in controlling the actions of the

subcontractor, which results from the "asymmetrical information"[19] that characterizes the relationship between the client and the subcontractor. Asymmetrical information means that the client is not sure (he lacks information on) whether the subcontractor will respect all elements agreed upon in the subcontracting arrangement, in particular with regard to producing according to specification and at a high level of quality, meeting the deadline and delivering the product on time, and making efforts to reduce the cost of production and increase productivity. The reputation of the subcontractor is therefore an important element in reducing the risk factor for the manufacturer.

In the case of the occupied territories, the Israeli manufacturer has been able to judge the credibility of the subcontractor on the basis of the trust and personal relations that were built over the course of more than 20 years between the Israeli and the Palestinian firm. In fact, formal contracts were never signed by the two parties; such contracts have not been used as a tool to reduce the risk of the subcontracting arrangement. It should be noted that because of the trust that has been established, Israeli manufacturers continue, though to a lesser degree, to subcontract part of their production to the Palestinian factories, despite the current political situation.

The relations between the Israeli manufacturer and the subcontractor in Jordan are considerably different than what is observed in the occupied territories. A formal contract governs the relations with the subcontractor in Jordan. Since business relations are recent (two to three years), trust has not yet been established between the two parties, and risks are greater (if the political factor is excluded). In subcontracting, there is also the problem of loyalty. There is no guarantee that the Jordanian company will continue to work for the same Israeli firm, despite the fact that the latter has invested time and resources to upgrade the skills of the workers (through training and supervision of work), organize the production, introduce modern machinery and improve the quality of the product. If the subcontractor is offered better prices and conditions elsewhere, he may decide to work with a different Israeli company.

On the other hand, there is also uncertainty for the subcontractor, with regard to the future actions of the manufacturer. The subcontractor faces a perpetual risk that he will not receive new orders from the manufacturer and also faces the risk that the manufacturer will try to renegotiate the agreement with the purpose of reducing the price paid to the subcontractor. Such an uncertainty for the subcontractor limits his motivation to invest in the modernization of his equipment and in innovation.

2. *Sourcing and placement of orders*

Whereas subcontracting and joint-venture arrangements are the main types of industrial relations between Israeli firms and those in Jordan, in Egypt the most typical arrangements are sourcing and placement of orders by Israeli firms, owing to Egypt's good infrastructure in textiles and garment production.

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[19] Ibid.

In a sourcing arrangement, the Egyptian firm owns the assets and raw materials and undertakes the additional investment needed for meeting the demand of the Israeli company, while the latter controls the quality through the placement of Israeli technicians (mainly of Arab origin) in the Egyptian firm and secures the export market. The Israeli company Delta sources fabrics with two fabric companies and sources garments, mainly underwear and T-shirts, with around six garment companies. The fabric sourced is processed into garments at the Delta factory in Cairo, and garments thus produced are exported mainly to the United States and Europe, under well-known international brand names, such as Hanes, Ralph Lauren and Baby Gro. Sourcing is also practised by other Israeli companies, such as Bagir Company, with the Egyptian firm producing around 250-300 men's suits per day for export. In this connection, it is noteworthy that Egyptian companies producing under sourcing arrangements have expanded dramatically in recent years. One Egyptian company that produces T-shirts and underwear now has 350 machines operating under a sourcing arrangement with Delta, as compared with 50 machines two years ago.

Although the Egyptian companies alone bear the risk of additional investment to meet the Israeli demand, the advantages, according to managers of garment companies, are numerous. These companies, like most other garment companies, formerly exported mainly to the lower end of the market, which meant low quality and low prices, sometimes with little profit. However, international competition in this type of product has increased in recent years and will become more intense with the liberalization of international trade in the near future. Egyptian companies face fierce competition from South-East Asian firms, which are able to produce at lower cost than Egyptian companies, in view of the former's lower costs for labour and raw materials and the larger size of the firms. The alliances made by Egyptian companies with Israeli firms has enabled them to reach the upper end of the market (high quality and high prices). Israeli garment companies, in fact, are able to compete only in the high-quality export market. Such alliances also have a long-term advantage to the Egyptian company: they allow the latter to build closer relationships with the foreign firm with which they are doing business and to become known by other international companies. In the long term, the Egyptian company may be able to secure the export market directly, without Israeli intermediation.

Most placements of orders with Egyptian garment companies are done by three Israeli trading companies that have established representation offices in Cairo and that play the role of intermediary between foreign and Egyptian firms. They take orders from foreign firms and place them with Egyptian companies. Their role is confined to securing the export market, against a commission charge. Generally, these trading companies do not reach the high-quality export market. It is estimated that the total sales made by Egyptian companies through Israeli trading companies may reach roughly $40 million to $50 million per year.

3. *Joint ventures*

Besides initiating subcontracting arrangements, the large Israeli manufacturers are also establishing joint ventures in Egypt and Jordan, as an additional means of delocalizing production. In Jordan, Century Wear was established at the end of 1995 as a joint venture company (50%-50%) by the Jordanian investment company Century Investment Group

(CIG) and the Israeli company Delta. Delta itself is a subsidiary of an American parent company, Sara Lee; part of Delta production is destined for Sara Lee. Under the joint venture agreement, Delta provides Century Wear with technical know-how and the export market. The management of the joint venture is the responsibility of the Jordanian counterpart. The joint venture is considered by CIG as more profitable than subcontracting; in joint venture, transfer of technical expertise is greater. Century Wear receives from Delta Company the precut fabric and undertakes the sewing, finishing and packaging (labelled "Made in Israel"). The production is returned to Israel and exported, in particular to the American market. Cutting of the fabric will be soon carried out in the company.

Century Wear has two factories. One produces underwear (men's and ladies') and T-shirts, and the other produces brassières. The first factory started production in February 1996 and expanded from 200 to 300 machines, with the factory now having 10 production lines and employing 350 workers (women). There is only one shift of eight hours a day. It produces under well-known American brand names: Victoria's Secret, Structure, Ralph Lauren, Hanes, Banana Republic and J. Crew. Production reached its highest level–half a million units of garments–in March 1997. Under the joint venture agreement, Century Wear is paid according to standard hour (cost plus overhead plus profit) by Delta Company. Century Wear will not share profits with Delta Company in established export markets which were secured by the Israeli company, but only in new markets opened by the joint venture.

The second factory started in January 1997, with two production lines (25 workers and 34 machines). It was expected that by the end of 1997, there would be 10 production lines (210 workers and 170 machines). The factory produces brassières under the brand name Victoria's Secret. There are very few competitors on a global basis. Production requires a high degree of technical know-how and expertise.

Quality control is undertaken on the production line, on each unit of finished product. After packaging, quality control is carried out on samples, by Israeli technicians and also by representatives of Delta and Sara Lee Company, which pay visits to the factory from time to time.

The joint venture arrangement has certain advantages over subcontracting but also has disadvantages.

The advantages of the joint venture for the Israeli manufacturer are the following:

(a) It is a long-term arrangement in which the Israeli manufacturer can secure long-term production, with high quality and delivery on time;

(b) The Israeli manufacturer is directly responsible for the quality of production and for the daily operation of the joint venture and therefore is in better control of the production and management of the enterprise;

(c) All the procedures and related problems in establishing the factory are the responsibility of the Egyptian or Jordanian partner.

The disadvantages of such an arrangement include the following:

(a) The Israeli manufacturer has to consult his partner each time he intends to introduce any changes in the factory, whether these relate to investment, expansion or the introduction of new products;

(b) The joint venture requires a large investment, since the Israeli counterpart must put up capital amounting to 50% of the joint venture;

(c) The Israeli manufacturer will have to bear the additional expenses arising from the trips that its management and technical team must make to the joint venture.

4. *Total direct ownership*

The establishment of a 100% Israeli-owned factory allows the Israeli manufacturer to control all operations and to make decisions alone, in terms of selecting workers and machinery and controlling management and production processes. However, this type of arrangement requires a large investment and the move of a management team from Israel to Egypt or Jordan, and it also means that the Israeli manufacturer must face alone the administrative and bureaucratic procedures of the Government in the country concerned. Moreover, the Israeli management must deal with all problems related to the management of human resources. The absence of a local counterpart means that this option is difficult for most Israeli companies to implement.

In spite of all the difficulties mentioned above, one of the largest Israeli companies, Delta, established 100% ownership of a garment factory in the Cairo free zone (Al-Nasr City). The factory operates 350 machines and produces underwear and T-shirts, employing cheap local labour (450 workers). The production is exported to Marks and Spencer with the label "Made in Egypt". Production has reached 34,000 units per day of underwear and T-shirts. The company relies mainly on Egyptian technicians, with the assistance of a very few Israeli quality control personnel. However, a number of Egyptian technicians were trained in Israel on the use of modern machinery and in production management. Most of the workers are provided with on-the-job training and need around one year to become semi-skilled. The factory operates semi-automated and preprogrammed machines. In order to be able to export to the United Kingdom–that is, in order to meet the requirements of the rules of origin–the company relies on Egyptian knitted fabric.

Delta Company is currently building additional production lines in Egypt and is expanding production. It is expected that by the year 2000 the factory will employ around 1,800 workers, which is four times the current level of employment. Delta also expects to continue the vertical integration of its production in Egypt, through the use of Egyptian thread.

One problem faced is that companies in Egypt are not allowed to sell factory seconds or outdated machinery (from the free zone) in the local market. Companies are therefore forced to sell the remaining quantity in foreign markets at losses. The practice of most companies elsewhere is to control carefully the quality of finished products that are

destined for export, by selecting only the pieces that meet the specifications of the foreign client, and then to sell the factory seconds in the local market.

E. THE IMPACT OF THE PEACE PROCESS: A SCENARIO FOR THE FUTURE

The current trends observed in industry relations in the textiles and garment sector between Israel and its neighbours are likely to continue, in particular if positive developments take place in the peace process. The trends that are expected to unfold are detailed below.

1. Delocalization of Israeli integrated production

In view of the serious crisis faced by the textiles and garment sector in Israel, it is likely that the production of the sector that is mainly geared towards export will be phased out and partially transferred to neighbouring countries (mainly Egypt and Jordan) in the next 5 to 10 years. The Israeli firms producing for the local market, which generally subcontract part of their operations in the West Bank and the Gaza Strip, will probably have to close in view of the liberalization of imports into Israel, as these firms will face fierce competition from East Asian products.

Delocalization will consist of the transfer of all aspects of vertically integrated production, from the production of fabrics, dyeing and printing, to the sewing and finishing of garments. Such a strategy will enable Israeli firms to overcome the constraint related to the refusal of the European Union to apply the cumulative rules of origin principle between Israel and both Egypt and Jordan, as long as the latter and Israel have no free-trade agreement between them. Delocalization to free industrial zones on the Egyptian-Israeli or Jordanian-Israeli borders or to industrial zones on the Green Line in the West Bank and Gaza Strip is another possibility. In these zones, cheap and abundant labour can be used, and at the same time, the problem of the rules of origin can be overcome.

Israeli firms, however, will take charge of the design of the product and of the research and development geared towards the introduction of specialty fabrics, the improvement of the quality of fabrics already in use, and the introduction of computerized machinery. They will also secure the export markets through their strong networking with foreign companies.

If there is little progress in the peace process, Israeli firms will have to look to other countries, such as Morocco and Turkey, to which they could transfer production. It should be noted that some Israeli firms have already established joint ventures in Turkey and have subcontracted production to firms in Morocco, taking advantage of the cheap labour in both countries.

2. Joint ventures in Jordan, as a main form of delocalization

The short experience in industry relations between Israel and each of Egypt and Jordan has shown that joint ventures between Israeli and Arab firms appear to be the most advantageous arrangement for all parties. For the Arab firm, the relationships involved in joint ventures are carried forward on a more equal footing than those in a subcontracting

arrangement, and, in addition, profits are greater. For Israeli firms, joint ventures are a long-term arrangement where the manufacturer can rely on a continuous supply of finished products.

The large Israeli companies that are part of multinationals are being encouraged by the latter to establish joint ventures. The establishment of joint ventures will contribute to building up peace in the region, and the multinationals will benefit from it in the opening of new markets for their products. Joint ventures may indeed be less affected by interruptions of the peace process, as compared with trade or with other forms of industry relations. In a joint venture, the interests of the parties would be so closely linked that it would be costly to terminate the partnership arrangement in case political problems arose.

3. Sourcing in Egypt, as a main form of delocalization

Israeli sourcing of garment production with suppliers in Egypt will continue to expand in the future, mainly because of the availability of an appropriate infrastructure in textiles production. Sourcing will take on increased importance when Israeli firms become involved in spinning activities in Egypt to produce improved yarn and thread. Although the cost of Egyptian cotton is higher than international prices of cotton, it has the advantage over its competitors in terms of quality and international consumer recognition.

Sourcing will be the main form of delocalization of Israeli production to Egypt, as subcontracting has not proved to be very profitable for either of the two sides. In view of the political sensitivity in Egypt, sourcing appears to provide more independence to the Egyptian manufacturer than subcontracting or joint ventures. Although direct Israeli ownership of production in neighbouring countries is considered the most profitable option for the Israeli textiles and garment industry, the expansion of such ownership will depend to a large extent on the progress that can be made in the peace process.

4. New opportunities for the Arab textiles and garment sector

The phasing out of Israeli production of textiles and garments and the partial transfer of such production to Israel's neighbours can be expected to result in the following:

(a) The orientation of investment in Jordan will be towards the establishment of joint ventures with Israeli firms. In view of the small number of medium- and large-scale firms in Jordan, many opportunities exist for new investors to enter the business. In Egypt, opportunities for joint ventures are confined more to established firms;

(b) Increased possibilities will be available in the future for Egyptian and Jordanian companies to operate directly with foreign firms, without Israeli intermediation, and Arab firms will benefit from the transfer of technology and know-how from Israel. Moreover, the alliance made by Egyptian and Jordanian companies with Israeli firms has enabled them to reach the high-quality export market, which is the only market where Israeli garment companies can compete. In the long term, the Arab firms will be better known by foreign companies, which may find that it will be more profitable for them to work directly with the Arab firms;

(c) Palestinian companies, facing difficulties in operating under subcontracting arrangements with Israeli firms in view of frequent border closures, will have opportunities for subcontracting or joint ventures in the new industrial zones that are being established on the Green Line. However, if the security and political situation improves, Israeli garment companies would prefer to continue subcontracting part of their production to firms in the occupied territories rather than operating in Egypt or Jordan, in view of the presence of a highly skilled labour force in Palestinian sewing factories and owing to the geographical proximity of these factories.

5. The future of the Arab textiles and garment sector

In order to compete in the local and international markets, Arab countries need to develop further their capabilities to adapt to the new challenges facing them, which include: the liberalization of international trade (WTO) and the conclusion of various international trade agreements; and the rapid technological development that is taking place.

(a) *The liberalization of international trade*

The increased liberalization of international trade brought about by the establishment of the WTO and by the expected arrangement of a free-trade area between certain ESCWA member countries (Egypt, Jordan, Lebanon) and the European Union will give the textiles and garment sector increased access to foreign markets, but will also expose the sector to increased international competition from other developing countries joining the WTO, as quotas and tariffs are removed.

Arab firms, in particular in Egypt and the Syrian Arab Republic and to a lesser extent in Jordan, have been able to grow thanks to the heavy protection offered by government policy, which in turn has usually led to inefficiencies in the industry, in both the public and private sectors. Inefficiencies are reflected in the reduced quality of material inputs, in particular that of fabrics. A low quality of production (spinning) and finishing (dyeing and printing) is found in Egypt, Jordan and the Syrian Arab Republic. The production of high-quality fabrics would enable these countries to take advantage of the trade agreements with the European Union and possibly with the United States, since the agreements emphasize the necessity of utilizing local fabrics to comply with the rules of origin.

The production of higher value added garment products (which would be of high quality), would enable ESCWA member countries to reach the upper end of the export market, taking advantage of their relatively low labour costs. It should be noted in this respect that, in the context of international trade liberalization, it would be difficult for these countries to continue to compete in low-quality products against the large production units in South-East Asian countries.

(b) *Rapid changes in technology*

ESCWA member countries need to adapt to rapid technological changes in order to compete in the international market. The relatively low labour costs in both Egypt and Jordan place these two countries in a potentially competitive position, as labour costs constitute

around 50% of total manufacturing costs. However, low labour cost is not the only factor of competitiveness; other factors, such as high productivity and an efficient system of organization, are equally important, if Arab firms want to target the medium- to high-quality foreign market.

In view of their high labour costs, industrialized countries undertook considerable investment in research and technology development in the 1980s, in particular in the field of introducing automation into the manufacturing process[20] as a way of protecting themselves against low-cost competitors in developing countries. Through the development of technology, these countries aim at improving labour productivity and reducing overall manufacturing costs.

Significant progress was achieved in the introduction of preprogrammed (computerized) sewing machines and in the introduction of capital-intensive equipment in design and cutting, as well as in the introduction of new fabrics. However, automation has been successful only in the cutting operation; the new technology has not affected the most labour-intensive area in garment manufacturing, the sewing operation.[21]

This means that developing countries, in particular ESCWA member countries, will continue for the foreseeable future to have a comparative advantage in garment manufacturing, through their continued use of low-cost labour, but only if new technology is introduced in the design and cutting phases and in sewing machines, as well as in the organization of the firm (management, quality control, motivation of employees). ESCWA member countries also need to develop their networks and their marketing and distribution capabilities.

The strength of the Israeli export firms lies in their ability to combine the use of computerized sewing machines and new technology with the use of low-cost labour in Egypt and Jordan and in their network of relations for marketing and distribution. The potential would exist, therefore, for Arab firms to compete in high value added products, in the medium- and upper-quality ends of the international market, by using new technology.

6. Jordan, a bridge to the Middle Eastern market?

There are signs that in the future Jordan may serve as a sort of bridge for Israeli investment aimed at penetrating the Middle Eastern market. A number of joint ventures between Israeli and Jordanian firms are being established in Jordan, with an eye on the Middle Eastern market. One joint-venture garment company, which produces garments for export to Europe and the United States (bearing the label "Made in Israel"), is planning to produce high-quality products for the Jordanian market (bearing the label "Made in Jordan"), to be exported in the future to the Middle Eastern market, particularly the GCC countries. It should be noted, however, that only high-quality products targeting the upper end of the market can compete in the Middle Eastern market.

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[20] Byrne, op. cit.
[21] Ibid.

A number of joint ventures in other industries are being established in Jordan, with the aim of exporting to the Middle Eastern market. For example, a joint venture with the Israeli company Tadiran was established recently to produce alkaline batteries. Tadiran is closing its alkaline battery factory in Israel for environmental reasons and is transferring the production to Irbid, Jordan. Production in Jordan is scheduled to start soon. The factory is expected to operate three shifts, employ around 100 workers, and have annual sales of $30 million. The production, which will be sold in the local market, in Israel and in Middle Eastern markets (and probably in foreign markets as well), will be produced under a Jordanian brand name (labelled "Made in Jordan"). Another joint venture with an Israeli company will produce so-called Italian jewellery (gold). The enterprise will employ 100 workers, and the main market will be the Gulf countries.

Another large Israeli venture, Koor Industries, has established a special company called Koor Peace Projects Ltd., with the aim of entering the Arab market through joint ventures with Jordanian companies. A joint venture investment company (50%-50%) was created recently between Koor Peace Projects Ltd. and the Jordanian Social Security Fund, with the aim of investing in new or established projects that could cater to the needs of the Jordanian and Arab market. The joint investment company is still in the phase of preparing the feasibility studies for a number of projects. It is noteworthy here that Koor Industries has established a joint venture with another Jordanian company to produce pudding for the local market. The joint venture is expected to add new products and sell in the Middle Eastern market.

It is important to note that the current trend observed in Jordan is part of the multinationals' policy of establishing joint ventures to secure larger markets, which in turn would help in building up a situation of peace, as indicated above (for example, Delta Company and Koor Industries are part of American multinationals). This trend is expected to continue in the future, especially if progress is made in the peace process. In view of the difficulties Israel faces in exporting its products to Middle Eastern markets (because of political sensitivities and high production costs in Israel), its best alternative may be to use Jordan as a bridge for investment in joint ventures that cater to the needs of the Arab market.

7. Possibilities for generalizing the case of textiles and garments to other labour-intensive industries

The transfer of Israeli production of textiles and garments has been undertaken mainly because of the crisis faced by Israeli firms. A certain division of labour is being established in which Israeli firms secure the export market and procure the needed know-how, while Israel's neighbours (Egypt, Jordan and the area under the Palestinian Authority) provide labour at low cost. The results of the findings of the present study cannot necessarily be applied in the case of other labour-intensive industries. It is recommended that in-depth research on other labour-intensive industries be conducted in order to understand the extent to which the case of textiles and garments could be generalized.

THE RESTRUCTURING PROCESS OF THE ISRAELI APPAREL INDUSTRY*

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Introduction

Since the beginning of the 1970s, the Israeli apparel industry has become more and more internationalized. This has implied a continuous process of restructuring, which accelerated in the 1990s, not without precipitating crisis in some parts of the sector. Recently, the ending of the state of war between Israel and two of its neighbours–Jordan and Egypt–has opened the potential for various forms of regional economic integration in this industry.

The apparel industry offers a particularly interesting case in view of the fact that it is highly sensitive to foreign trade liberalization (exposure to cheap imports, opportunities for export) and is liable to be partly delocalized (non-strategic production, mature production cycle, labour-intensive processes, relatively easy handling). On the basis of this specific case, the present study will try to show how internationalization and regionalization may be manifested in the organization and localization strategies of firms.

This paper includes two main parts: the first analyses the dynamics of the internationalization of the sector until the 1990s; the second concentrates on the acceleration of the restructuring process in recent years, along with the new potential offered by the progress of the peace process. The conclusion recapitulates these evolutions within the framework of the structural and geographical dynamics of the sector.

I. SECTORAL DYNAMICS UNTIL THE BEGINNING OF THE 1990S

A. FROM PROTECTIONISM TO TRADE LIBERALIZATION

1. *Building up the sector behind protective barriers*

Historically, the Jews of Western and Eastern Europe were heavily involved in textile and apparel production. During the years of the British Mandate, a growing number of Jewish immigrants to Palestine established businesses in textiles and apparel manufacturing, using their previous professional experience and initiative to respond to rising demand for consumer products, while substituting for imports. It was not until the mid-1950s, however, that industry became a clear priority for the Israeli Government, with

* This paper is a version of a part of a study by Antoine Mansour and Blandine Destremau entitled, "Palestine and Israel: Subcontracting relations in the garment industry" (Ramallah and Jerusalem: MAS, December 1997).

the aim of both creating employment opportunities for immigrants and strengthening the national economic supply basis. Labour-intensive textile plants, in particular, were promoted by various public transfers and non-budgetary measures in a system of interdependency: "The Government gave aid in exchange for development".[1] Some estimates have it that in the period 1958-1965 the cumulative differential grant to these textile plants (over and above grants provided elsewhere) equalled 5% of the 1962 level of GNP.[2]

In the first stage, most investment was channelled into spinning and weaving mills, set up primarily in the development zones of Beit She'an, Dimona, Afula, Beersheva, Nazareth, Ofakim and Kyriat Gat.[3] Later, wool and synthetic yarn complexes sprang up but, until the 1970s, the activity of the sector concentrated on textiles, which were vigorously protected against foreign competition and which represented around two thirds of the production of the sector. Garment production, on the other hand, continued to be carried out in small tailoring workshops, which were rather traditionally organized and equipped.[4] The sector's production was sold almost exclusively in the domestic market.

2. *Strategic turn in the 1970s*

Starting in the 1970s, however, three interconnected trans-formations began to alter the profile and structure of the Israeli textile and apparel industry:

(a) Industrial development switched towards a capital-intensive, high-tech orientation.

(b) In the late 1960s the Meidan Commission was set up to establish orientations for development of the sector. Its main recommendation was that, considering the fierce competition Israel was facing in the field of yarn and fabric because of ever-increasing, cheap Far Eastern imports, it should progressively specialize in higher value added products, in particular in fashion apparel with a high content of advanced textile and design technology.

(c) The Israeli economy began to open up to the world market, which meant greater exposure to foreign competition, but also new export opportunities. This started in the mid-1970s. It was explicitly included in policy orientations after Begin's coming to power in 1977 led to the conclusion of several international trade agreements (see following section) and was intensified in the framework of the stabilization plan adopted

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[1] Yair Aharoni, *The Israeli Economy: Dreams and Realities* (London and New York: Routledge, 1991).

[2] Ibid.

[3] Israel, Ministry of Industry and Trade (in cooperation with the Manufacturers Association of Israel), *The Israel Textile, Fashion and Leather Industry* (Jerusalem, 1989).

[4] Ibid., p. 9.

in 1985 to control the economic crisis. As shall be seen below, it arrived at an even more decisive stage after 1991.

Regarding the textile and garment industry, the policy which resulted from this turning can be summarized in a few points as follows:

- Liberalization of imports and exports
- Support for measures aiming at upgrading the quality and technological content of production, to achieve a better position against international competitors (imports and exports)
- Promotion of apparel manufacturing, largely through legislation encouraging capital investment
- Promotion of exports, to improve the balance of payments.

Since the 1970s, thus, Israel has engaged in building a network of free-trade area agreements, in such a way as to eliminate trade obstacles resulting from the agreements of each of the trading partners with third parties. Most-favoured nation (MFN) trade agreements are also being multiplied. One of the objectives of such a network is that Israel would be able to be used as a bridge for the production of goods (subject to the relevant rules of origin), thus enabling manufacturers to enjoy the benefits of free-trade agreements.[5] The outcome, as will be seen below, has been a boom in the industry's production, employment and export, as well as a significant transformation of its structure.

3. *The free-trade agreements with the European Union and the United States*

In 1975, Israel signed a free-trade agreement with the European Economic Community (EEC),[6] which permitted its textile products to enter the countries concerned free of customs duties, under specific conditions.[7] One additional clause stipulated that Israel may import raw material from 16 protocol countries (including Egypt and Tunisia), process them, and still export the resulting product as Israeli under its rule of origin.

The signing of this agreement with the EEC led to a steady growth of Israeli exports to this destination, to a point where Israeli textile and apparel exports to Western Europe accounted for about 90% of the total of such exports. That situation brought about a high degree of dependence on the part of Israel, and therefore a risk as well. In fact, in

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5 Israel, Ministry of Industry and Trade, *The Israeli Economy at a Glance*, 1995.

6 This became the European Union on 1 November 1993.

7 For further details, see Blandine Destremau and Antoine Mansour, "Palestine and Israel: subcontracting relations in the garment industry" (Ramallah and Jerusalem: Palestine Economic Policy Research Institute [MAS], 1997).

the first years of the 1980s, Israeli textile and apparel exports dropped by about 25%, mainly owing to the fact that the European countries suffered from an economic crisis and from currency devaluation. In 1985, the European market started to recover, and Israeli exports followed, growing by 66% in two years. But the dynamism of the European market was not the only factor in this boom: during the slump years, the Israeli Ministry of Industry and Trade strove to reduce dependence, develop other destinations and restore export growth, mainly by pushing the American authorities to include textiles and garments in the free-trade agreement that was being negotiated. At the time of the present writing, after Israeli's signing of free-trade agreements with additional countries, the European Union accounts for 50% of Israeli textiles and apparel exports.

Two other free-trade agreements closely related to the agreement with the EU were later signed by Israel:

(a) An agreement with Spain and Portugal, when they joined the EEC in 1986, which provided for cancellation of all quotas on textile products by the end of 1989 (with some exceptions) and the progressive reduction and/or exemption of duties.

(b) An agreement, in 1992 with the European Free Trade Association (EFTA), some of whose members (Austria, Finland and Sweden) joined the EU in 1995, while Norway, Iceland, Liechtenstein and Switzerland remain within the EFTA framework. As of 1 January 1993, this agreement included Israel in the generalized system of preferences, which was designed to aid developing countries with various levels of benefits, according to country and product. In this last agreement, the rules of origin are similar to those of the EU.

In 1985, Israel signed a free-trade agreement with the United States, which permitted the export of unlimited quantities of Israeli textile products free of all customs duties. Full implementation came about in 1995, with duties on some products having been phased out over a ten-year period.[8]

This agreement, along with efforts to encourage exports to the United States, greatly contributed to their growth: in 1974, clothing exports to the United States amounted to 40% of the total; they dropped to 4% in 1980, following the signing of the free-trade agreement with Europe, but reached 24% in 1987.[9] However, this upward trend was hindered somewhat by the then declining dollar *vis-à-vis* European currencies. The dollar picked up again at the end of the decade, and the United States absorbed 39% of Israeli textile and apparel exports in 1995 (41% for Europe).[10] The value of the exports to

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[8] Ibid.

[9] Israel, Ministry of Industry and Trade (in cooperation with the Manufacturers Association of Israel), *The Israeli Textile, Fashion and Leather Industry* (Jerusalem, 1989), p. 9.

[10] Manufacturers Association of Israel, "Facts and figures about the Israeli textile and garment industry", unpublished document, Tel Aviv, 1996.

the United States was multiplied by a factor of 6 between 1975 and 1985 (against fourfold growth in the value of such exports overall).

Israel is the only country in the world having two free-trade agreements with major economic zones of the world. The free-trade agreements signed with the European Union and the United States have resulted in rapid export growth to these destinations, which accounted for about 90% of the total exports of the sector in 1995.

4. *Intensifying liberalization in the 1990s*

In 1991, an import liberalization policy came into force with third countries, with the objective of contributing to a more optimal resource allocation and a better rationalization of the economy. These goals were to be achieved through:

- Saving on foreign currency, since imported raw materials and fabric are cheaper than domestically produced materials and fabric.
- Establishing reciprocity relationships liable to open new export markets to Israel.
- Putting downward pressure on the domestic price index.

This exposure of the Government plan was to allow imports to be brought in without government licensing and to lift protection for the domestic market. Textile and apparel interests were successful in their efforts to lobby for a softening of the plan, whereby the relatively high customs duties, would progressively decrease to 12% for finished goods and 8% for raw materials by the year 2000. The labour intensity of the textile and apparel industry (in particular for garments) and the large differential between Israeli labour costs and those of other countries (since Israeli producers had to abide by minimum wage and social protection laws) meant that Israeli firms were less and less able to compete on the domestic market with imports coming from Asia or Eastern Europe.[11]

Along with establishing diplomatic relations with all of the East European countries, Israel expanded its trade relationships with these destinations. It has concluded most favoured nation agreements with many of these countries and is currently at various stages of negotiation on free-trade area agreements with Poland, Hungary, the Czech Republic and Slovakia. Furthermore, since the signing of the free-trade agreement between the United States, Canada and Mexico, Israel has been striving and negotiating to establish free-trade area agreements with Mexico and Canada, the latter of which had granted Israel generalized system of preferences status for developing countries, and with which an accord had almost been reached, at the time of this writing.

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[11] To the growth of legal imports must be added illegal imports originiating from cheaper Asian countries and smuggled through customs checks. These are imported to a third country with which Israel has a free-trade agreement, where their labels are changed.

Additionally, negotiations/discussions conducted with Turkey for the establishment of a free-trade agreement between the two countries are presently being discussed by parliamentary institutions. This involves both political considerations (as an intermediary between the Western and the Muslim worlds) and economic motivations (export of high technology, chemical and pharmaceutical products). Such trade relationships, however, do not serve the interests of the industry as a homogeneous bloc. In fact, strong opposition exists between the high-tech and the textile and apparel branches: one third of Turkish exports are textile and apparel products, and these threaten the Israeli industry market share, as Turkish wages are set at around $150 to $200 a month, and transportation and delays in shipping to Israel are far below those between Asia and Israel. On similar grounds, the textile and apparel lobby opposes the signing of a free-trade agreement between Israel and Poland.

This process runs parallel to and represents a step towards the implementation of the Agreement Establishing the World Trade Organization (signed by 124 countries in April 1994) by the year 2005. Along with the dismantling of the Agreement Regarding International Trade in Textiles over a ten-year period, implementation of the Agreement Establishing the WTO will progressively cancel the comparative advantage Israel has today with its free-trade agreements, since all countries will witness a significant lowering of their quotas and tariff constraints. The European and North American markets, specifically, where Israel today possesses a great advantage, will become accessible to countries where labour is much less expensive than it is in Israel, and whose products will compete with Israeli products for market share.[12]

5. *A fast-developing industry*

Globally, the evolution of the textile and apparel industry in the past years reflects remarkable dynamics, namely a high growth of sales and exports, at a faster pace than other consumer good industrial sectors, as shown for selected years in tables 1 and 2.[13] This growth was due on the one hand to the rapid expansion of the domestic market, thanks to increasing purchasing power and population, and on the other hand, to the increase of exports, which is no surprise since foreign trade liberalization policies opened up huge opportunities for the firms best equipped to compete and encouraged them to raise their productivity and specialize in profitable market niches. As will be shown later, though, it also hurt small manufacturers with less ability to invest and conduct suitably aggressive marketing strategies.[14]

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[12] It was estimated that as a result of the Uruguay Round, import prices of the EU in textiles will go down by 1.8%, and those in wearing apparel by 5.3%. The decrease in import prices in North America in textiles and wearing apparel are estimated as 1.6% and 9.5% respectively (see Subiday Togan, "Effects of the Uruguay Round and customs union with the EU on the Turkish manufacturing sector", Economic Research Forum Working Paper Series, No. 9605, 1996).

[13] A change of codification in 1988 makes it impossible to put together data series covering a longer time span.

[14] Israel Export Institute, "Israel export briefing: Israel's textile and apparel industry", unpublished paper.

TABLE 1. GENERAL DATA ON THE ISRAELI TEXTILE AND GARMENT INDUSTRY, 1990-1995

	1990	1991	1992	1993	1994	1995
Turnover (billions of US$)	1.56	1.885	2.23	2.46	2.879	3.07
Change in production (percentage)					10.2	3.75
Number of employees	40,325	37,727	42,964	44,611	45,975	45,500
Number of factories						2,153
Export value* (billions of US$)	0.777	0.849	0.957	0.932	1.008	1.081
Of which: to the US	0.183	0.234	0.26	0.32	0.372	0.419
Import value* (billions of US$)	0.552	0.594			0.892	1.0335
Of which: finished goods	0.065	0.069	0.108	0.183	0.217	0.281
Investment in machinery (millions of NIS)	235	213.8	325	419.2	386.1	344.8

Source: Manufacturers Association of Israel, 1996.

* Raw materials and finished goods.

TABLE 2. DISTRIBUTION OF ISRAELI INDUSTRIAL SECTORS

	Turnover		Employees	
	(billions of US$)	Percentage share of total	Number	Percentage share of total
Textiles and garments	3,066	6.60	45,500	12.2
Food, drink and tobacco	8,523	18.2	53,700	14.5
Metal machinery and transport	9,115	19.5	87,100	23.4
Electricity and electronic equipment	7,237	15.5	57,000	15.3
Chemistry, rubber and plastic	8,492	18.2	42,200	11.4
Wood, paper and printing	6,599	14.1	69,300	18.6
Mining and minerals	3,682	7.9	17,200	4.6
Total	46,714		372,000	

Source: Manufacturers Association of Israel, 1996 and 1997.

In 1995, textile and apparel represented 6.6% of total Israeli industrial turnover and 12.2% of total labour power (9% and 16% respectively if diamonds are excluded), the gap between the figures being an indication of the sector's labour intensity. Total manpower employment of the some 2,300 firms of the sector amounts to around 50,000 workers. About one third of the sector's production is exported, its exports representing 9% of total industrial exports (excluding diamonds), which makes it Israel's fourth largest exporting industrial sector.[15]

B. The structural organization of the Israeli textile and apparel industry

1. *Overall view of the sector*

The textile and apparel industry is divided into three main sectors:[16]

(a) The textile sector, which includes factories which process raw materials and fibres for industrial use, spinning and weaving plants, and firms dealing with finishing (including dyeing and printing).

(b) The clothing, knitted and finished goods sector, which comprises factories manufacturing clothing items from knitted and woven materials.

(c) The leather sector, which includes tanneries and factories which manufacture leather and fur wearing apparel, footwear and finished leather goods. This sector is not considered in the present study.

The textile and apparel industry is strongly polarized and concentrated:

(a) Some firms are vertically integrated, that is they incorporate all production stages, starting from manufacturing basic materials and on to finishing clothing articles. The few large firms that fit into this category constitute industrial complexes. They account for major shares of labour employment, sales and exports; nine of them accounted for 75% of total turnover in 1996.

(b) Other firms are more specialized, whether in upstream activities (textiles) or downstream activities (apparel production). For the most part, they constitute a myriad of small establishments, often rather unstable, which produce mainly for the local market. Specialized medium-size to small apparel firms import their raw materials to a large extent.

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[15] Ibid.

[16] Israel, Ministry of Industry and Trade (in cooperation with the Manufacturers Association of Israel), *The Israel Textile, Fashion and Leather Industry* (Jerusalem, 1989), p. 10.

Aharoni stresses this dualism of the Israeli manufacturing sector:

> Manufacturing in Israel is characterized by a high degree of central direction and by a network of personal relations that affects many decisions.... The Government could not achieve its economic goals without the large manufacturers and the two were developing entwined interdependence. In many ways, the Israeli manufacturing scene is of a dual-economy type: on the one hand, thousands of small entrepreneurs operate with no government help (or intervention). On the other hand, a small number of large firms, responsible for a very high per cent of the manufacturing output, operate with many interlocking directorates and informal ties.[17]

In 1988, the textile and apparel industry was composed of some 1,600 companies, two thirds of which were clothing plants employing approximately two thirds of the sector's labour force. Significant differences nevertheless exist between the two subsectors (excluding leather): concentration was stronger in the textiles subsector, which is more capital-intensive, than it was in sewing activities: in textiles, 80% of all employees were working in plants employing more than 50 workers; this was true for only 55% of the employees in the clothing subsector, where small plants (fewer than 20 employees) absorbed one third of the labour force. The overall average investment per employee was $90,000 in the same year, but ranged from $240,000 in yarn manufacturing to $25,000 in clothing.[18]

In 1995, textiles accounted for 41% of total sectoral turnover and apparel for 51%.[19] About 40% of the total sales value of the industry comes from textiles, which employs 23% of the employees of the sector, the rest being garment and finished goods workers.[20] The same year, yarn and fabric represented 29% of total textiles and apparel exports, the rest being composed of knitted garments (41%), woven garments (18%) and home textiles (12%). Concerning the textiles sector, of the approximately 1,250 looms presently active, 800 are weaving looms, with 250 to 300 of these operating in one factory (Kitan). Most of the remaining 150 are scattered among small two-to-three machine weaving workshops. Around 20 firms specialize in printing and finishing.

According to the Israel Export Institute (1996), 2,368 companies in the apparel industry and 446 businesses manufacturing textiles employ a workforce of above 5. They are distributed as follows:

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17 Aharoni, op. cit., p. 220.

18 Israel, Ministry of Industry and Trade (in cooperation with the Manufacturers Association of Israel), *The Israel Textile, Fashion and Leather Industry* (Jerusalem, 1989).

19 The rest (8%) being leather goods. See Israel Export Institute, "Israel export briefing: Israel's textile and apparel industry", unpublished paper, p. 3.

20 The Economic Section of the Embassy of France in Israel.

Employees	Garments	Textiles
Fewer than 50	2,255	390
50-99	69	29
100-299	53	24
More than 300	9	5
TOTAL	2,368 firms	446 firms

On the whole, most textile employees work in large firms, whereas this is the case for only half of garment workers. This situation is not without effects on unionization and labourers' bargaining power.

The concentration and polarization of the sector are reflected in the export structure: in 1995, one firm, Delta Galil, the largest company, accounted for 14% of total textile and apparel exports; 3 firms (Delta, Polgat and Nilit) together accounted for 31% of all exports; 9 firms (those aforementioned plus Macpell, Gottex, Gibor Sabrina, Kitan, Lodzia and Caesaria Wardinon) exported 50% of the total sectoral export value. Half of the remaining 50% is divided between 21 other firms, and the second half of the remaining 50% is divided among 170 firms. In other words, half of the sector's exporting is carried out by 9 firms, three quarters of it by 30 firms, and the total by some 200 enterprises. Since the greatest part–and in some cases all–of the output of most of the leading textile and apparel firms (fewer than 10 of them) is destined for the export market, exporting can truly be considered a specialization in terms of types of products, organization and marketing strategies. On the other hand, the figures cited also mean that the other 2,000 firms, for the most part small clothing production units, do not export at all and concentrate their activities on the local market or else operate chiefly as subcontractors to larger firms. The 110 firms registered in the Manufacturers Association represented 75% of labourers, 75% of turnover and 96% of exports.

As shall be seen, the restructuring that has been made in response to the present pressures and circumstances has resulted in a concentration at the top of the production structure through capital purchases and relocation of production, while the smallest firms are faced by crisis.

2. *Polarization and specialization in the apparel industry*

The structure of the apparel industry is correlated to a functional and product specialization profile. The large exporting firms concentrate in the following apparel articles:

(a) Knitted wear: hosiery, knitted cotton underwear and shirts, knitted young fashion and sport apparel products (Delta Galil, Gibor Sabrina, Macpell, Lodzia);

(b) Home textiles: towels, bed linen (Delta Galil, Kitan, Caesaria);

(c) Men's suits and shirts, jeans and trousers (Polgat, Kitan);

(d) Swimwear (Gottex).

These specializations generally share certain characteristics: they are not highly fashion-sensitive, and the number of lines produced each year is limited, which means they require relatively little flexibility in their design and can be produced in large runs by large production units, with a relatively high degree of mechanization. For these types of products, firms can achieve economies of scale on the basis of technological development and can improve their competitivity on the basis of reduced labour costs. Nevertheless, these products, however large the quantities produced, are targeted at to medium- to high-quality markets, that is, different niches than the ones flooded by cheap Asian products. Israeli competition in these export markets is therefore dual and involves on one hand cost competitiveness and on the other hand quality competitiveness, which requires relatively skilled manpower and careful controls.

A large part of the small non-exporting firms specialize in women's and girls' ready-to-wear apparel, which is characterized by small runs, a relatively large number of lines produced each year, a high degree of flexibility in meeting demand and filling orders, a very high degree of labour intensity. Smaller production units, which generally need to remain close to the end markets, are best suited for this segment of the market. In this segment, research concentrates on new models and design, competition being less based on cost than it is on catering to a variety of tastes and keeping abreast of the evolution of fashion. The local market–however penetrated by foreign products–is still dominated by national production. Exports, however, face different types of difficulties, mainly the fact that Israeli women's and girls' ready-to-wear clothing is of relatively low or merely average quality yet more expensive than mass-production types of garments (mainly knitted) and not well positioned for quality competition. In addition, exporting involves logistical problems, that is, small firms often lack the necessary know-how, experience and contacts with foreign markets, while conducting an export initiative for small quantities of products incurs costs that are not recoverable should the initiative fail.

The above description of the sector's structure and polarization is roughly drawn. In particular, it does not account for medium-size firms. This category apparently includes a concentration of subcontractors for larger firms and go-betweens linking larger units with small workshops, those working at home and the like. Their importance in the sector resides mainly in their capacity to produce smaller runs, that is to provide margins of flexibility to their clients, and in their capacity to provide specialized services, or to carry out operations that require greater quality control and more labour intensity than large firms can provide. One typical situation is that of Arab Israeli firm owners subcontracting for large exporting Israeli firms and employing Arab seamstresses in small workshops established directly in Arab villages in Galilee.

Ahmed Ashkar gives a brief description of these firms:

> I recently attended the first conference of textile subcontractors in the Arab sector, which was held on 26 September [1996] in Sakhnin. According to the conference organizers, there are about 400 workshops in the Arab sector, employing a total of about 14,000 seamstresses and several hundred men, mostly as foremen and maintenance workers. [Apparel] workshops employ more workers than any other branch of industry located in the Arab sector, and they are almost the only source of employment located in the Druse communities. The conference revealed the dimensions of the catastrophe which is threatening the livelihoods of thousands.[21]

Adiv describes these firms in a rather cynical way:

> For two decades, Arab "middlemen" have built their small fortunes on the backs of local female workers, violating all labour laws and taking advantage of the fragile position of women in the society. This exploitative alliance between small Arab capitalists and Jewish factory owners was sometimes even referred to as "co-existence".[22]

It would be highly useful to know more about this category which is intermediate in size, place and function in the apparel industry; specific field research needs to be carried out.

Although the general profile drawn above is close to reality and provides relevant clues to the understanding of the sector's dynamics, one missing element is a correlation of the sector's structure and localization. This will be dealt with below, after an examination of some of the components of the restructuring process in the sector.

C. Localization of Israeli apparel firms until the 1990s

Several sites for localization by Israel apparel firms can be identified. These represent various advantages and/or inconveniences to Israeli apparel firms and correspond to different periods of the industry's development.

1. *Locations in Israel*

Locations in densely populated urban industrial areas, mainly Tel Aviv, Haifa and Ashdod, present general advantages of agglomeration effects, proximity of retailers and consumer markets, proximity of various kinds of suppliers and service providers, high density of infrastructures, size of population, and availability of manpower. It should be

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[21] Ahmed Ashkar, "The new Middle East: the seamstresses of '48 Palestine", *News from Within*, vol. 12, No. 10 (1996), pp. 28-29.

[22] Assaf Adiv, "Israeli textiles in crisis: no alternative for Arab women", *Challenge*, No. 40 (1996), pp. 14-15.

noted here that rising land prices, an effect of urban growth, is one of the factors encouraging larger firms to sell their assets in these areas and settle elsewhere.

Locations in development zones and/or Arab or Druse-populated zones offer firms various advantages, namely investment incentives and cheaper labour costs.[23] Investment incentives were designed in accordance with geographical zoning, to "develop peripheral regions distant from the main centres of the country and to encourage population migration to these areas."[24] Three types of "development zones" were hence defined (A, B and C), in which "approved enterprises" in industry or tourism-related activities could receive support from the State, depending upon the priority of the given region.[25] The various types of support include investment grants (38% of investment in fixed assets for industrial activities located in zone A sites and 20% in zone B), reduced taxation and tax benefits, full exemption from taxes on chargeable income (10 years in zone A, 6 years in zone B) and State guarantees for loans received from financial institutions. These development zones are concentrated in the south (bordering on the Negev desert)–which was to a large extent underpopulated and lacking in economic activity–and in the north, in particular in Arab-populated zones–where the Jewish Agency and the Government of Israel have always wanted to promote a strong Jewish demographic and economic presence so as to outnumber the original Palestinian population and Judaize the region.

Employment costs in development zones tend to be lower than in other regions of Israel, mainly owing to the relatively higher unemployment rate in the former and the dependent position of labour *vis-à-vis* the establishments choosing these locations. Therefore, both the Galilee and the southern areas are places of concentration of labour-intensive industries, where larger garment firms tend to locate and/or to delocalize the most labour-intensive parts of the production process through local subcontractors (Jewish or Arab). This is particularly true of Arab and Druse areas and villages, where labour costs tend to be the cheapest in all of Israel, mainly because these two populations globally constitute a poorly qualified group, and one that is to some extent discriminated against in various institutionalized and non-institutionalized ways.[26] They are kept out of the Jewish primary labour market, to be concentrated in a secondary labour market connected with the consumer goods industry.[27] They have a lower average standard of living and less bargaining power than Jewish labour and are more exposed to unemployment, especially in times of economic slump or crisis. Another factor is relevant in the choice of a location for garment factories: since it is mostly women who are hired in these factories, and since

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[23] In the case of high-quality bathing suits, for example, raw material and labour add up to about 5% of the retail value.

[24] Israel, Ministry of Industry and Trade, *The Israeli Economy at a Glance*, 1994 and 1995.

[25] Ibid.

[26] Ruth Klinov, "Arabs and Jews in the Israeli labour force", unpublished working paper No. 214, 1989.

[27] Raja Khalidi, *The Arab Economy in Israel: The Dynamics of a Regional Development* (Beckenham, Kent: Croom Helm, 1988), p. 122.

Arab women tend to be less mobile than Jewish Israeli women, they can only join the labour force if the job opportunities are located near their places of residence. This is precisely why factories settle in these areas.

According to Khalidi,[28] in 1983, the Arab industrial labour force in Israel was primarily concentrated in textile and clothing factories. Adiv writes:

> For years, textile has been the single industry allowed in the Arab sector, and the only source of work for most women. It is estimated that Arab women constitute one third of the entire workforce in Israeli textiles. Over the last two decades, in addition to the larger textile factories located in Jewish cities, small auxiliary sweatshops have mushroomed throughout the Arab villages themselves. The male managers of these small enterprises usually act as subcontractors to the big factories, employing thousands of young Arab women. These workers are confined to their villages either by their traditional families or by a lack of other job openings. The Histadrut does not operate in the villages, therefore there is no union supervision. Work conditions are often substandard, and workers receive much lower salaries than they would in the factories. In 1995, in a rare instance which drew much media attention, female workers in the Deir Hana branch of the Ludzia company struck for better pay and conditions.[29]

The scarcity of alternatives, then, pushes Arab and Druse women to accept the proposed conditions, even if these do not adhere to the rules and laws governing labour conditions and the minimum wage. These rules and laws do, however, constitute a reference point that can only be marginally transgressed, and they certainly limit how far labour costs can be reduced in these regions. Apparently, worker mobilization has somehow been active in past years on the part of seamstresses, and struggles for better working conditions have begun, as well as efforts to ensure that the labour law is respected; court cases have been raised against breaches. This has possibly played a role in the decreasing attractiveness of these locations, as compared with others.

The minimum wage in Israel is set at $695 per month, which means a labour cost of $900 for the employer, when the associated taxes are included. Unskilled labour costs range between $900 and $1,000 on average.

2. *Locations in the Palestinian territories*[30]

The West Bank and the Gaza Strip emerged as alternative pools of cheap labour, for the most part by way of subcontracting. These locations offer the following advantages for Israeli firms:

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28 Ibid., p. 120.

29 Adiv, op. cit., p. 14.

30 For more details, see Destremau and Mansour, op. cit.

(a) Under occupation, their economy was choked to a point where it was made almost completely dependent on Israeli goods and markets, and specifically on the Israeli demand for labour, whether through daily migrations or work putting-out. Living standards remained well below those in Israel, with wages representing only a part of family incomes. Additionally, owing to the military occupation, the Palestinian population was to an extent subdued. The relationship of exploitation set up by firms towards their employees was in this sense supported–if not reinforced–by the tools of military occupation and economic exploitation of occupied territories.

(b) The labour laws in the occupied territories–that is the Jordanian law for the West Bank and the Egyptian law for the Gaza Strip–were intact. Neither of these systems defended the rights of workers. Furthermore, Israeli military orders destroyed the capacity of labour unions to fulfil their functions, and the exceptional circumstances brought about by occupation and instability offered opportunities to violate even the minimal regulations in place.

(c) Because of the relatively high average level of education and training in the occupied territories, Israeli firms could count on the Palestinian labourers to pick up skills quickly.

(d) As the years passed, occupation and geographical proximity allowed mutual knowledge and familiarity to develop between Israeli and Palestinian "partners", the latter having generally learned to speak Hebrew.

(e) Geographical proximity allowed great flexibility for transactions of all kinds, including reordering and transporting supplies and finished products.

Subcontracting of Israeli garment firms to the Palestinian territories spread in two waves in the 1970s and 1980s. It appears that larger Israeli firms specialized in larger runs or goods with a relatively low degree of fashion sensitivity endeavoured to subcontract on a large scale to the five or six Palestinian firms which could grow to a rather large size (300 to 500 machines). On the other hand, small Israeli firms specialized in ready-made fashion wear would turn to small Palestinian workshops, which were perfectly adapted to react to market requirements with a high degree of flexibility, including mobilization of occasional workers and women sewing at home.[31] Israeli garment firms that subcontract to other firms only performed upstream and downstream tasks (conception, design, patterning, sometimes cutting, then finishing, checking and packaging) while putting out the central operations (mainly assembly) to the Palestinians. There was no need to make an investment in equipment, buildings, labour recruitment, training or management on the Israeli side–in fact, a number of these firms essentially acted as production coordinators.

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[31] Blandine Destremau, "Perspectives des relations économiques israélo-paletiniennes et division industrielle du travail", *Cahiers du GREMAMO*, No. 13 (1995), pp. 111-128; and Blandine Destremau, "Formes de mobilisation du travail et petite industrie dans les Territoires Palestiniens Occupés: le cas de la sous-traitance", *L'Economie de la paix au Proche Orient*, ed. L. Blin et Ph. Fargues (Paris: Maisonneuve et Larose, CEDEJ, 1995), pp. 101-116.

This type of industrial articulation and locational strategy progressively shrank, after the intifadah, with the rise of instability and security problems, and it declined even more drastically after the implementation of the closure and separation policy from the early 1990s. This contraction coincides with a new stage in industrial development in Israel and with the progress of peace negotiations and the opening of two other locations in the region: Egypt and Jordan.

In the occupied territories, workers' monthly wages are set at between $200 and $300 (and are lower in the Gaza Strip than they are in the West Bank). This rather high level is justified by the entanglement of the Israeli and the Palestinian economies, which pulls up the standard of living and the price levels in the occupied territories.

II. CRISIS AND THE RESTRUCTURING OF THE APPAREL INDUSTRY IN THE 1990S

The preceding section showed that opening up to the world market had several implications for the Israeli textile and apparel industry: it pushed it to develop export strategies in order to gain competitivity and markets in specific branches; and it considerably increased the local industry's exposure and enhanced competition in the domestic market, since free-trade agreements also meant easier access for foreign products. The main consequences have been the beginnings of a technological revolution in the sector, along with a restructuring process that has helped to polarize the sector's structure in terms of firm size, technological level, market strategies pursued and types of items produced. However, additional factors combine with the effects of liberalization to intensify the difficulties faced by parts of this sector.

A. CRYSTALLIZATION OF A SECTORAL CRISIS

1. *Articulation and cumulation of crisis factors*

One element that must be taken into consideration of any analysis of either the present functionings or the future prospects for the Israeli textile and apparel industry are wage levels; this is the case because international competition is still largely cost-based. Minimum wage is particularly relevant, as most labour requirements in this sector involved unskilled work.[32] In 1994, a law prescribing a general wage raise in the sector was passed in the Knesset. As a result, the growth rate of wages was higher in the textile and apparel industry (1.1% in 1994 and 4.7% in 1995) than in other industries (-1.5% and 4.4% respectively).

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[32] According to the Central Bureau of Statistics of Israel, labour costs per hour are the lowest in the "clothing and made-up textile" branch, while the branch ranks fourth (28-item nomenclature) out of all industries in terms of number of employees.

In 1997, again, a reform of the minimum wage was being proposed.[33] Implementation would mean an immediate rise in the minimum wage by 300 new shekels (NIS), that is almost 15% above its present level, simply to catch up with the new prescribed level, followed by a probable 25% yearly rise during the next three years. Although such a measure can be understood from a social policy point of view, it disregards the fact that labour-intensive industrial activities with a relatively low technological content and a high degree of international cost competition have other needs and problems than activities where Israel has a definite technological advance and a stronger market position. This trend of increases in wages is all the more threatening, according to garment industry managers, since foreign trade liberalization exposes Israeli manufacturers to products originating from countries where labour costs are much lower.

Other factors combine to enhance the perspectives of a crisis. The cost of financing and the level of interest rates tend to hinder investment and development in textile and apparel activities, specifically considering the decrease in profit rates the branch is facing. The evolution of foreign exchange rates has also been detrimental to the development of textile and apparel exports, and beneficial to imports, since the value of the Israeli new shekel has been strengthening in the past years.

Furthermore, the Israeli Government recently set out to enhance environmental protection, specifically to limit water pollution. Textile firms, in particular those engaged in dyeing and printing, are directly concerned since they use large quantities of chemical products and salts, which are discharged along with large quantities of wastewater. Abiding by the new regulations entails high levels of investment with no profit return for firms already facing a profit slump and difficulty in obtaining credit.

Finally, the general attitude towards the textile and apparel industry contains an element of suspicion: the sector is perceived as perhaps risky and somehow obsolete, as Israel heads towards more technology-intensive industrial specializations. Whether objectively grounded or not, this attitude leads to the marginalization of the sector in public research and development support schemes, in public training programmes and in private investment. Furthermore, when the industry is considered risky and unprofitable by credit institutions, then textile and apparel entrepreneurs face difficulties obtaining loans.

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[33] As of the present writing, the minimum wage level is adjusted once a year, but using alternating systems–once every two years. It is set at 45% of the average wage, and in alternating years it is set on the basis of the general price index. The time gap of two years allows for the lower wages to lag behind either price or labour income rises and therefore slows down inflationary spirals. If accepted (which seems likely), the reform will require twice-a-year indexing of the minimum wage at 50% of the average wage level and will suppress the indexing of prices. In other words, if cumulative losses in purchasing power are possible thereafter, the homogeneity of wage evolution in various branches would thus be secured, without allowing large gaps to be created over long periods of time.

2. *Signs of crisis*

The Israeli textile and apparel industry is presently going through a crisis that parallels the present process of restructuring: the production growth rate was only 3.75% between 1994 and 1995, compared with 10.2% the year before; the number of labourers dropped by 1% between the two years, and again by 2.3% between 1995 and 1996; exports have grown slower than imports in past years, even decreasing between 1992 and 1993, and again between 1995 and 1996, to a point where exports did not cover imports in 1996.[34]

Imports started to grow after 1991. They increased by 16% in 1994 and 18% in 1995, amounting to 18% of total domestic production in 1995. More significant perhaps, in past years, is the share of finished goods in total imports that has been growing at a faster rate than raw material and fabric imports (18.5% in 1994, 29.5% in 1995). Finished goods imports accounted for one third of the total imports in 1996, covering about one third of the $3 billion local market, double the one sixth share of 1993. Raw material and textile imports are mainly destined for transformation and therefore constitute a sign of activity rather than indicating dependence; growth in imports of finished goods, however, reveals an increasing exposure of the domestic market.

Investment indicators confirm the trend: investments have been dropping steadily since 1994, and firms are facing difficulties in obtaining banking credit to invest in textile activity. Most investment in the period 1990-1995 was concentrated in exporting firms and activities, at the expense of smaller producers for the local market.

These difficulties are correlated with three other figures:

(a) The average profit rate for officially listed firms was lower (4.7% in 1994 and 4% in 1995) than in the rest of the industry (8.2% and 7.8% respectively);

(b) Retail prices for garments grew by only 42% over the period 1989-1995, against 114% for general price index,

(c) The gap is lower, but nevertheless exists, for wholesale prices (58.7% for textile and apparel vs. 84.5% for all industries).[35]

It should be noted, however, that behind the uniformity implied by average figures are hidden discrepancies and contrasted trends. The crisis of the textiles and

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[34] The share of the textile and apparel industry was 14.2% of total industry exports (excluding diamonds) in 1980, 9.2% in 1993 and 8.9% in 1994, while the share of metal, machinery and electronics exports grew from 37.5% to 49.9% and 50.4% for the same years. This indicates a shift of Israeli industry towards more technologically intensive products. Manufacturers Association of Israel, unpublished data sheet, 1997.

[35] Manufacturers Association of Israel, "Facts and figures about the Israeli textile and garment industry", unpublished document, Tel Aviv, 1996.

apparel sector is concentrated in two categories of firms, with their related subsectors and types of products. The first category is that of the small workshops producing garments for the local market, which have been severely hurt by the growth of imports. The recourse to reducing the rates paid to the Palestinian subcontractors for their work, allowed by the political and economic context of the post-Gulf war period (border closure, Palestinian economic crisis and growing unemployment), certainly helped these firms to survive. On the other hand, closure, security problems and the Israelis' fear of going into the occupied territories made it increasingly difficult to keep close and frequent ties with subcontractors, and therefore to maintain their highly flexible functionings (very limited and small runs, no stock). The crisis and the restructuring process therefore had serious consequences for the Palestinian apparel subcontracting sector, which became marginalized in its functional position *vis-à-vis* the Israeli industry, as closure and political tension damaged its main comparative advantage (accessibility and flexibility), and it also became structurally linked to the apparel industry subsector where capital destruction is the most rapid in Israel.

TABLE 3. COMPARISON BETWEEN ISRAELI TEXTILE AND GARMENT INDUSTRY AND ALL OTHER SECTORS ON SELECTED ISSUES
(Percentage)

	1994		1995	
	Textiles and garments	Rest of industry	Textiles and garments	Rest of industry
Wages (real changes)	1.1	-1.5	4.7	4.4
Profits of publicly held firms as percentage of total sales	4.7	8.2	4	7.8
Consumer price index (1995 ÷ 1989), variation			42	114
Wholesale price index (1995 ÷ 1989), variation			58.7	84.5

Source: Manufacturers Association of Israel, 1996.

The second category, the middle-size or small subsidiaries of large firms have also been severely hit by the restructuring process. In Israel, the social effects of the crisis mainly affect the parts of the country most dependent on employment from these labour-intensive industries: factories are closing in the Galilee and in the south of the country, thousands of workers are being laid off, and demonstrations and protest movements are on the rise. The Manufacturers Association forecasts that fewer than one third of the 35,000 seamstresses will be able to uphold their job. According to Adiv,

> 59 small sewing factories have closed in Israel [in the first nine months of 1996].... Over the past three years, 31 Israeli textile factories have closed entirely and eight more have cut their workforce in half. This year, 2 000 workers were

laid off, in addition to last year's 500. The Histadrut (National Workers' Union) estimates that at the imminent peak of this crisis, 50,000 workers–the majority of them women–will be left jobless.[36]

The Arab areas of northern Israel are in the first line.[37] In contrast to the case of laid-off Jewish labourers, who are more likely to benefit from public programmes and to switch to other industries, the question of possible employment alternatives remains unanswered for unemployed Arab women: the introduction of electronics assembly activities in these villages, often advocated, does not constitute a realistic option, since such activities belong to sensitive military-related industries, which keep the Arab population at a distance.

B. SUPPORT POLICIES

As mentioned earlier, the restructuring and reorganization process will cost between 20,000 and 30,000 jobs in Israel, although it is believed that this will lead the Israeli textile and apparel industry towards steady growth and increased profits. The capital-destructive aspect of the crisis is closely correlated to a movement to reorganize the dynamic segment of the sector, namely the large exporting firms. Public textiles and apparel industry-support policies go along with this process in that they concentrate on the firms best able to sustain competition within the new context of liberalization and in particular the most promising firms for export development. The main tools for this support are:

(a) The law for the encouragement of capital investment, which offers incentives to companies that operate in overseas markets;

(b) A special fund designed to assist firms operating in the local market to face difficulties resulting from increased exposure;

(c) A marketing promotion fund.

Support strategies have four thrusts:

(a) To improve the quality of products, develop new products (such as new fabrics) based on intensive technological research and upgrade design and product standards so as to put the Israeli textile and apparel industry in a leading position.

(b) To reduce costs through sourcing cheaper raw materials, delocalizing to cheaper labour pools and increasing productivity.

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[36] Adiv, op. cit., pp. 14-15.

[37] Adiv, op. cit.; Ashkar, op. cit.

(c) To adapt to the flexibility requirements of the new international market by developing new industrial organization methods and new logistics (for instance, computerizing reorders).

(d) To set up more aggressive marketing methods and channels, such as fairs, exhibitions, mail-order marketing and department stores.[38] Israeli firms are also encouraged to seek out new opportunities to produce for American or European firms, since the overall performance of the Israeli textile and apparel industry, the good quality of production, and the country's free-trade agreements have led foreign firms to have some of their production made in Israel. European firms are especially interested in thus obtaining tariff-free access to the United States market, although this has not occurred on a wide scale up until now. Prospects for peace allow hope that a reduction in the degree to which foreign investors perceive the country to be a risky place to invest will boost the role of Israel as a platform in organizational strategies of foreign firms.

Israel therefore chooses not to concentrate its efforts on competing on the basis of cost, where it has a relative disadvantage compared with countries where labour costs are much lower, but on competing on quality, where its technological know-how and equipment places it in a good position.

Globally, the restructuring process can be foreseen and analysed in terms of the following strategic choices and orientations:

(a) Textiles will be "sacrificed" to import competition with regard to the cheapest and most standard fibres and materials, whereas Israeli research and development will focus on innovative fabrics, along with very specialized small sectors of production, such as agricultural, medical, fire-proof, bullet-proof and camouflage textiles, a large part being designed to meet the needs of the army. Only some of the knitting and weaving firms and half of the 20 finishing and printing firms are expected to remain open.

(b) The domestic apparel market will be increasingly covered by imported apparel, while only those local firms able to develop quality products with a high design and creativity component will remain relatively stable. The firms producing for the lower market segments will be forced to close down or to become importers. This in-depth process of structural adjustment is already (and is projected to be) very costly in social terms, since it entails wide unemployment in the most economically precarious zones of Israel.

(c) To a greater and greater extent, export markets constitute the target for sectoral development. The exporting sector will be reinforced by a factor transfer from other subsectors of the industry. Large exporting firms tend to become bigger (through the absorption of other firms or through new investments), in their aim to strengthen their

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[38] Israel Export Institute, "Israel export briefing: Israel's textile and apparel industry", unpublished paper, 1996, p. 2.

logistics and research capacity and in their search for opportunities to lower their costs and upgrade quality in their market niches.[39] Some small firms will also be able to penetrate export markets, provided that they improve their quality on certain ready-made garments with a high added value, and provided that they develop corporate logistics for export (with the support of the various institutions concerned).

(d) The production processes will become more and more segmented: on the one hand, Israeli firms will withhold high added value operations (design, cutting, preparation, technology, logistics, marketing) and will have the low added value operations performed elsewhere, mainly Asia, for the supply of raw materials (which will increasingly be imported), and Egypt, Jordan and the occupied territories for assembly.

It thus appears that the restructuring of the apparel industry will occur not simply with regard to structure: restructuring will involve a different geography of production. Far from being centred on Israel proper, it will take place on a wider scale, bringing local, regional and international considerations into play, as will be seen below.

C. ARTICULATING REGIONAL AND GLOBAL STRATEGIES

1. *Benefits of peace: steps towards the regionalization of production*

The peace treaties with Egypt and Jordan are presently opening new opportunities for the Israeli textiles and apparel industry, if only because of the differential that exists in labour costs. In addition, the development of trade and economic relationships with these two neighbours may open channels for Israeli exports in particular for products with a high technological content.

Although the peace agreement between Egypt and Israel dates to 1979, it was only in 1995 that trade relations between the two countries were normalized, and that Israel deleted Egypt from its list of countries requiring a licence for goods exported to its territory. With Jordan, a trade agreement is under negotiation for the establishment of a free-trade zone. Jordan and Israel have already agreed to put an end to the primary and secondary boycott against Israel and to apply the status of most favoured nation to each other. However, the signing of a free-trade agreement with Jordan may also allow cheap imports from other countries to seep through the Jordanian border, as long as Jordanian control over imports and rules of origin is not completely reliable. The signing of the peace agreement between Israel and Jordan immediately translated into the launching of business ventures, albeit on a scale that has yet to develop fully. The MENA economic summit held in Amman in 1995 allowed a beginning of "normalization" in this field.

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[39] Shenkar College is the leading training institution in all aspects of textile and apparel manufacturing, in particular research and development and design.

With regard to the garment industry, there are unmistakable signs that Egypt and Jordan are becoming industrial locations for Israeli firms: there already exist in Jordan Israeli ventures employing from 20 to 400 workers, either in the context of subcontracting arrangements, joint ventures or direct investment (one instance).[40] In addition, several firms have already opened factories in Egypt. Delta Galil, the top Israeli textile and apparel firm, opened a factory in Egypt in 1993, and one in Jordan at the end of 1996.[41] These initiatives are strongly supported by the Israeli authorities, who hold that economic ties will drag the peace process forward and help overcome political obstacles.

This is an interesting step, as it can be considered the first time that Israel has admittedly used a North-South border to its advantage or, in other words, has "exploited" a developing country's labour to lower its own costs, as other countries have been doing for long.[42] It is in fact by no means far from the first time that the industry in consideration has relied on cheaper pools of labour: Israeli firms have been using Palestinian labour ever since the occupation of the West Bank and the Gaza Strip in 1967; these firms can even be considered to be using "second-class citizen" labour within Israel. In the case of Jordan and Egypt, however, the new arrangements are being carried out in the context of international relationships, in particular in the context of a type of regional integration whereby Israel "peripherizes" its neighbours from the start.

Although it is clear that cheap labour costs are not the only factor involved in firms' decisions concerning localization and spatial organization, for Israeli firms, the main advantage is that labour costs are much lower in Egypt and Jordan than they are in the West Bank and Gaza Strip (on average, wages range from $60 to $90 in Egypt and $100 to $150 in Jordan).[43] An additional factor is that social security and fiscal systems being less developed than in Israel, extra costs are nil or lower for the employer, and undeclared labour may be easier to harness. The gap constitutes a strong incentive for producers to move towards cheaper locations, as political developments open such locations up to Israeli ventures. This will be the case all the more if the new minimum wage law goes through in Israel, but even under present conditions, transaction costs are relatively low (mainly owing to geographical closeness), security problems are relatively under control, and a trained labour force can be found and specific know-how acquired, even if methods of work and organization need to be upgraded and adapted.

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[40] The number of these ventures is difficult to assess with certainty. One official at the Israeli Embassy in Amman mentioned 15 at the time of enquiry.

[41] Adiv, op. cit.

[42] According to one interviewed industrialist, however, Israel has been delocalizing parts of the production process to Turkey ever since the opening of the borders between them. No further information on the matter is available at the time of the present writing.

[43] In neighbouring countries in particular–but in other less developed countries as well–salaries may range from $50 to $150 or $200 a month; they are within the $50-$80 bracket for the Far East and Eastern Europe and around $150 to $200 for Turkey.

Ashkar analyses this orientation in rather severe terms:

> The 'normalization' process in relations between Israel and the Arab countries, which followed the Oslo 'peace' process, has led to the establishment of workshops in Egypt, and now in Jordan–which has, of course, led to the closing of workshops within the 1948 borders. The average monthly wage of an Egyptian seamstress comes to $48.50–about one tenth the price of equivalent labour among the Palestinian Arabs in Israel.
>
> After the signing of the peace treaty with Jordan, a variety of capitalists hastened to invest in that country, and a number of workshops linked to Israeli textile firms have been set up. Given the high rate of unemployment in Jordan, men as well as women are willing to work for the low wage offered–around $75 a month.[44]

Adiv adds:

> The collapse of the textile industry [in Israel] also reveals that the dividends of the peace process await Israeli capitalists, but not necessarily the peoples of the region. The working classes of neighbouring Arab countries will be courted as long as they are willing to work for a fifth of the Israeli wage. The Palestinian working class, as well, will have to adapt to the new Middle Eastern standards.[45]

This trend to delocalize operations towards Egypt and Jordan was long forecasted as an opportunity for Israel to improve its cost-competitivity and channel its products to Arab markets, possibly with a local label to avoid reluctances to "buy Israeli". However, in the present pioneering phase, this choice is not devoid of obstacles that need to be overcome.

- First, normalization has not gone as far as acceptance, considering the political problems it still poses in Egypt and Jordan, and business has to be carried out in a rather unfriendly social framework. The process is still in its infancy, and the Israelis living in Amman feel insecure and rejected by society (various interviews, Amman).

- Second, the requirements of Israeli firms in terms of quality and models are to a great extent unknown to Egyptian and Jordanian workers and supervisors, largely because of cultural gaps. Therefore, only lower-quality, not highly fashion-sensitive items, which allow a relatively high degree of standardization in their production processes, can so far be delocalized. For the Israeli firms venturing to delocalize more complex production tasks, it is necessary to send supervisors to the site in question, to carry out a medium- to long-term training process. It seems that the costs incurred for delocalized

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[44] Adiv, op. cit., p. 29.

[45] Adiv, op. cit., p. 21.

supervisors (salary, compensation payments, regular trips back to Israel) eat up relatively large shares (frequently around one third) of the added value they contribute to production. This poses the question of business and labour force management and raises the issue of how to obtain commitment to quality from the low-paid workers engaged in production.

- In addition, day-to-day transaction costs are high for Israeli firms. Because of distance, impediments at the border, delays in customs clearings and administrative processes, and different holidays and working hours, transportation between Israel and Egypt or Jordan is a lengthy process. Flexibility in transactions is thus impeded, and there is no clear prescription for solving this problem: is an adaptation and negotiation process what is needed, or should the situation be analysed in terms of political-type impediments to effective normalization?

- Another area of concern for Israeli firms involves trade regulations and rules of origin; this is dealt with below.

Economic relations with the Palestinian Authority are based on the provisions of the Paris agreement of April 1994, according to which the autonomous Palestinian territories are part of a customs union with Israel. The leading principle of this agreement is harmonized customs and standards, except for quotas imposed upon the Palestinian Authority for its own imports from Arab countries (owing to fear of leakages into the Israeli market). The suitablility of this location in the strategic choices of the Israeli manufacturers, however, seems determined more by security concerns and the overall dynamics of restructuring and relocalization than by the opportunity to realize the potentialities of a cooperation renovated by the new political context.

2. *The question of rules of origin*

One of the strategic options pursued by the Israel textile and apparel industry is to widen the range of production combinations by which Israel can remain the official country of origin for export destinations, in order to take full advantage of its free-trade agreements and other trade agreements; at the same time, it is trying to lower its production costs through subcontracting or other forms of partial delocalization and, more generally, to upgrade its competitivity. The principle of the rules of origin is relatively simple, even if implementation is not: if the product exported is not considered of Israeli origin, then it does not benefit from the advantages of the agreement in question. In the case of the textile and apparel industry, it is well known that the labour-intensive nature of certain operations (mainly assembly) and the stiff competition from Asia (where salary levels are comparatively extremely low) tend to push producers to have part of the producing process, usually assembly at least, executed in a cheap-labour country. Any kind of subcontracting therefore necessarily involve strategies to adhere to the rules of origin (that is the free-trade agreement) while taking the greatest advantage possible from the delocalization.

In the case of Israeli textile products, subcontracting with Palestinian factories or workshops from the West Bank or the Gaza Strip does not compromise the rules of origin, as these territories have been considered a unit with Israel with regard to most international trade regulations ever since their occupation and until the beginning of the implementation of the Paris Economic Protocol (May 1994); they therefore had then no rules of origin (i.e., they did not represent an acknowledged origin).[46] Since then, rules of origin have been set up for the West Bank and Gaza Strip, as well as a temporary customs regime with Israel. Nevertheless, the United States and the European Union continue to consider the West Bank and Gaza Strip and Israel as one zone, which means that the parts of Israeli producing processes delocalized to Palestinian firms are still considered to be taking place within Israeli borders. Consequently, an item produced both in Israel and the West Bank and Gaza Strip will be considered of Israeli origin, whatever the actual division of labour.

However, a different problem has emerged–at least in regard to exports to the United States and the EU–since Israel started delocalizing some of its garment production to Egypt and Jordan. Production in Egypt does not generally allow the products to be acknowledged as Israeli in origin. Egypt imposes a 300% tariff on imported fabric, which in practice means that all fabric used in the production process must be local, and this goes against the rules of origin set either by the United States or the European Union. Products thus have to be imported under the Egyptian origin and trade regime, which involves the generalized system of preferences and the MFA clauses.

In the case of Jordan, the United States rules of origin are more lenient and allow Israel (which benefits from a favoured regime) to delocalize assembly, since they permit the adding up of all value added carried out in Israel (upstream and downstream of the delocalized operations) for the calculation of the required 35%. Recall here that, on average, fabric represents one third of the total costs of garment production and labour another third, with the last third being the firm's margin.

The EU rules of origin prescribe that the required 35% to 40%[47] of value added be produced as a block in one single place, which means that Israel cannot add upstream and downstream Israeli value added in order to claim Israeli origin. When limited parts of the producing process (simple assembly) are subcontracted to Jordanian firms, customs are paid upon return to Israel (at a rate of 44%) under an article of the Israeli customs code which concerns "improvements" (which in fact designates minor changes). In this way, the semi-finished item becomes an Israeli product, including the case where the material originates from the EU or one of the 16 protocol countries. This possibility, even though it allows some degree of delocalization to Jordan for export to the EU. gives the Israeli firms little leeway to reshuffle the geography and organization of their activities, as it

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[46] Except for certain products, since 1987, when an agreement was signed between the EU and the occupied territories.

[47] Apparently, general EU rules of origin are even stricter, as they require that 55% to 60% of the value added be local. Isael has a special regime in this regard.

considerably restricts the amount of work that can be executed in Jordan, if the Israeli origin is to be retained. Israeli authorities are struggling to obtain a cumulation right, that is the possibility to add up added value produced in Israel before and after delocalized tasks, as well as to add up value produced in either Israel or Jordan as originating from Israel. Normally, this last "diagonal cumulation" would require that a free-trade agreement exist between Israel and Jordan, thus creating a unified customs zone between them and unifying their rules of origin. However, Israel argues that the forthcoming free-trade agreement between the EU and Jordan should suffice (a free-trade agreement between the two neighbouring countries not being foreseeable in the very near future for various reasons) and that such economic associations would help build peace. In its trade relations with Canada, Israel faces a similar situation as with the EU.

On the basis of the author's research, one hypothesis that can be put forward is that, the more that trade regimes, other non-tariff barriers and transaction costs facilitate commercial relations between Israel and Egypt and Jordan, the more these locations will tend to substitute for the West Bank and Gaza Strip.

3. *Restructuring and relocalizing production: a dynamic picture*

An attempt will now be made to articulate briefly the twin processes of restructuring and relocalizing into a dynamic picture of the strategies that firms have followed in the past years. It appears that most of the largest integrated firms (textile and apparel) that export most of their production initially located their production units mainly in the cheaper labour basins of Israel, either through establishing their own factories or through subcontracting, thereby additionally benefiting from the various incentives attached to development zones. This first phase was characterized by a concentration of the industry on textile and mass-type garments, and on domestic labour pools.

In the 1970s, as the industry's export orientation became more pronounced and as international competition grew more fierce, businesses started to delocalize limited parts of their productive operations to the largest firms in the occupied territories, in the form of subcontracting arrangements, and progressively established with them relationships of some regularity, which were not wholly devoid of trust. The production lines mainly concentrated on knitted outerwear and underwear, jeans and men's trousers, shirts and suits, and, to some extent, bed linen, that is on products with a middle to low degree of fashion sensitivity. Over time, the relationships strengthened, and an ever-increasing number of production operations–and sometimes even complete lines of production, from patterning to packaging–were entrusted to the West Bank and Gaza Strip. Since this shift towards Palestinian subcontracting took place at a time when these firms were expanding at a fast pace, it did not suppress work from the Israeli labour force on a noticeable scale; in other words, putting out work to Palestinian labourers in the West Bank and Gaza Strip did not at that time cost employment in Israel. This second phase of expansion of the industry thus focused on a double orientation: the development of exports of semi-fashion-sensitive and relatively high-quality apparel products and growth in medium- to low-quality garments for the local market, parallel to rapid growth in subcontracting arrangements with cheap and dominated Palestinian labour pools.

In the 1990s, however, as international competition has become fiercer, the Israeli textile and apparel industry is no longer expanding at the same pace, and many of the advantages these firms benefited from in the past are now in question (wage levels, border protection, the less strict environmental regulation of the past). The context thus requires new adaptive restructuring and new cost reductions as a matter of survival. At this point, the economic agreements with Egypt and Jordan provide Israeli firms with the opportunity to delocalize the most automated and least delicate parts of the production process to areas where labour costs are lower, in conditions sufficiently satisfactory so that the quality standard of the goods is not endangered. Israeli businessmen appear to be specifically optimistic about Jordan, where they claim that workers can reach the same productive level as Israeli workers within six months of proper on-the-job training. So far, only minor processing, representing a small proportion of value added and with a relatively low standard, is carried out in Jordan. Most of the products are destined for the American market, either directly in the case of the largest investments or through subcontracting and via the Israeli firm in the case of smaller "partner" firms. This third phase can therefore be considered a restructuring phase, with a dual tendency for crisis and expansion. It is also characterized by a narrowing of the range of activities and a specialization process, as well as an expansion to new territories at the expense of the previous localizations.

As a matter of fact, this reorganization is taking place parallel to, and is a contributing factor in, factory closures and worker lay-offs in Israel, precisely in the areas where concentrations of workers had formed. Apparently, only the higher standard products and most delicate tasks will remain in these relatively expensive locations, until other cheaper places are found. To some extent, Palestine remains a desirable location for producing medium- to low-standard items, but as time goes on, a return to former Palestinian counterparts will become more and more improbable as they become autonomous within their new economic circumstances, and as Jordanian and Egyptian set-ups become more satisfactory (better training and productivity of workers, settled institutional framework).

The number of smaller garment firms producing for the domestic market expanded parallel to the maturation of the Israeli market, from a pioneer identity into a Western-styled society, and parallel to the military occupation of the West Bank and Gaza Strip. To some extent, these firms were from the start structurally based on subcontracting relationships with Palestinian workshops or small firms, as they were originally established in response to Israeli demand.[48] These small firms are being hit hard by the rapidly accelerating flow of imported finished textile goods into the Israeli market and will find it difficult to survive in a context of tougher cost–and quality–competition. As their situation becomes more precarious, they bring down their Palestinian partners with them. For most of these small Israeli firms, subcontracting to neighbouring countries is not within the realm of practicability, distances being too large and transactions too complex and costly.

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[48] Destremau and Mansour, op. cit.

III. CONCLUSION

Strategies of the Israeli textile and garment firms, as well as public policies, tend to promote Israel as a regional axis in this industry, primarily thanks to its technological and productivity advances. Furthermore, its international trade agreements (and particularly the free-trade agreements with the European Union and the United States) give it a highly valued advantage, positioning it as an intermediary in the international transactions that the peace process is helping to promote. Israel also benefits from the confidence it has instilled over the years in international public and private agents, thanks to its relatively stable institutions, in particular compared with its Arab neighbours. By developing regional strategies, that is mainly in terms of market and delocalization to its neighbours, Israel would lower its costs and open new market opportunities.

Depending on the type of "partnership" relations established, Egypt and Jordan could benefit through incentives for better competitivity and through transfers of technology and know-how, in addition to an initiation into global integration. The peace process, which has brought into play a regional integration dynamic in which Israel would have its place, is thus inherently linked to globalization: it follows the path of the rest of the world, with the constitution of regional clusters; it constitutes some kind of test for trade liberalization; it goes along with State and economic reform.

Although the present paper has scarcely alluded to it, it is nevertheless clear that political factors continue to play a determining role: even though the liberal views count on economics to solve problems in other fields of human behaviour–and in particular to advance the peace process in the political field–it appears that economic and social strategies must also take into account the weight of the region's history. Furthermore, both "normalization" and the implementation of the structural adjustment reforms are exacerbating social tensions within the countries, including Israel, and it appears that the articulation of regional and global strategies from the part of Israeli textile and garment firms involves conflicts that economic progress alone seems unable to harness.

It should not be forgotten that, however economically crisis-ridden and potentially unstable, the countries neighbouring Israel may turn to other options that the peace process gradually builds for them, among them reinforced commercial links with the European Community. The restructuring process of the Israeli textile and garment industry may thus not necessarily lead to a configuration whereby it becomes the hub and dominant agent of a regional productive cluster, if the logic of internationalization and national factors take over that of regionalization.

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COMPETITIVENESS OF THE EGYPTIAN TEXTILES INDUSTRY: IMPLICATIONS OF PEACE FOR CURRENT INCENTIVES AND FUTURE PROSPECTS*

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Introduction

Egypt was the first Arab State to reach a peace settlement with Israel. However, the economic effects of this 1979 accord were limited and were sometimes seen as negative. Furthermore, in spite of various regional agreements between Egypt and its Arab neighbours, intra-Arab trade did not develop to any extent that was commensurate with geographic proximity, cultural and taste similarities, and different political statements issued on the subject. Yet active factor movements have occurred, with Egyptian workers migrating to neighbouring Arab countries and Arab capital–particularly from the Gulf States–finding profitable investment opportunities in Egypt.

More recently, Egypt and the European Union (EU) have been engaged in bilateral negotiations concerning a free-trade agreement that would involve preferential trade liberalization. Negotiations along similar lines with Canada and the United States are under way or about to start, and in addition, non-discriminatory liberalization is provided for under the GATT/WTO agreements.

What is the likely impact of these developments on Egypt's textiles and clothing industry? More specifically, what are the economic incentives for regional cooperation in the Middle East–particularly with Israel–in this domain, in the light of the prevailing situation of this industry and its present level of competitiveness?

Given these developments, the paper examines the impact of regional peace on Egyptian textiles. Part I shows the overall picture of the cotton textiles industry in Egypt. It outlines its importance in the Egyptian economy and sketches its structure and product mix; it also examines government policies and more specifically the extent of protection given to various stages of this industry. Part II examines the production efficiency of Egyptian textiles. Part III focuses on competitivity, with particular emphasis on the relative position of Egyptian textiles in Israeli markets. Part IV presents an overview of Egyptian-Israeli relations in textiles production and trade, along with an assessment of potential impacts of regional and worldwide political and economic developments on the competitiveness of Egyptian textiles. Part V addresses the changes that will have to be made if the new environment is faced successfully. How can Israel, the EU or any partner

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in preferential arrangements help in the transition period to full liberalization? Section VI sums up the findings and policy recommendations.

I. MAIN FEATURES OF THE EGYPTIAN TEXTILES INDUSTRY[1]

A. IMPORTANCE AND STRUCTURE OF THE INDUSTRY

The textiles industry is one of the oldest industrial activities in Egypt. Excluding petroleum, it represented over 30% of total industrial output until 1988/89, with its share falling to less than 22% by 1993/94. It accounted for 40% of total export earnings until 1991, when its share fell to less than one third, as shown in table 1. It is the second largest manufacturing sector, after food processing.

Imports of textiles are limited, and during the period considered they amounted to an average of 3.7%.

TABLE 1. INDICATORS OF THE IMPORTANCE OF THE TEXTILES INDUSTRY IN THE ECONOMY OF EGYPT
(Percentage)

Textile sector's share in:	1989	1990	1991	1992	1993	1994	1995
Total exports	37.6	35.2	19.9	20.3	20.4	32.0	29.3
Exports excluding crude oil	47.7	43.2	33.0	28.9	31.0	41.3	36.9
Total imports	2.3	3.7	4.9	3.9	3.7	3.5	3.7
	1988/ 1989	1989/ 1990	1990/ 1991	1991/ 1992	1992/ 1993	1993/ 1994	1994/ 1995
Industrial output	21.0	20.3	17.4	16.6	14.4	14.6	
Industrial output Excluding petroleum	32.4	26.0	26.7	26.1	21.8	21.8	

Source: Egypt, Central Agency for Public Mobilization and Statistics, *Statistical Yearbook.*

This industry accounts for about a quarter of total employment in manufacturing, which in 1993/94 amounted to around half a million persons. Of these, 209,700 were engaged in the public sector; more specifically, 186,500 were employed in the public sector cotton textile companies,[2] and the rest were engaged by the formal and informal private sectors and by large-scale joint ventures.

[1] Some sections of this paper rely on a previous paper by the author and Hoda El-Sayed entitled "Potential impact of a free trade agreement with the EU on Egypt's textile industry" published in *Regional Partners in Global Markets: Limits and Possibilities of the Euro-Med Agreements*, ed. Ahmed Galal and Bernard Hoekman (CEPR and ECES, 1997).

[2] Derived from accounts of public sector companies.

This industry is dominated by 31 public sector textile manufacturing companies, of which 25 process cotton. These companies are mainly composed of large, vertically integrated mills engaged in spinning, weaving, dyeing, finishing, garment-making and even retailing. They operate under law No. 203 of 1991 and are distributed among three public holding companies, which have exclusive or majority ownership of the share capital of these affiliated companies. This law provides that holding companies and affiliated companies operate as other private sector companies incorporated under law No.159 of 1981.

In addition, "mixed" companies–including El-Ameriya, owned by Misr Bank, and Miratex, owned by several public sector companies and the Iranian Government–operate under investment law No. 230 of 1989.

These public and "mixed" enterprises dominate the textiles industry. They account for all cotton spinning and for about 60% of weaving. On average, they absorb about 80% of domestic cotton production, the remaining being exported. These companies are also involved in the spinning and weaving of wool, jute and other fibres. However, since cotton is the predominant component of Egypt's textile industry, most analysis and disaggregated data reported in this paper refer to cotton textiles.

Private sector participation in weaving and ready-made garment production has grown significantly, reaching 55% of fabric production and exceeding 85% of total production of garments during the 1990s, as shown in table 2. The private sector is composed of a large number of traditional small-scale workshops and a smaller number of medium- to large-scale firms, many of which are joint ventures under law No. 230/1989. Data on the production of this sector by volume or value are sketchy and do not give an accurate picture of its relative importance in the textile industry.

Table 2 also shows that, with the exception of ready-made garments, Egyptian textile has either continuously declined since 1991/92 or fluctuated. In all categories, production levels for 1994/95 were below those of 1990/91. This situation reflects the world textile recession, coupled with Egypt's domestic recession resulting from the macro stabilization effort which started in 1990/91.

B. EXPORT PERFORMANCE

1. *Development of exports*

Textile exports (again with the exception of clothing) stagnated in the first years of the 1990s, with raw cotton declining dramatically in 1991 and further in 1992 and 1993. The deterioration in raw cotton exports is partly attributed to the decline in output in the face of low procurement prices and to an increase in the domestic consumption of local spinning mills. It can also be partly attributed to the high export prices, which were set based on a five-year average of Egyptian cotton prices. The depression in the world textile industry starting in 1991 also caused considerable damage to cotton exporters.

TABLE 2. PRODUCTION OF TEXTILE PRODUCTS
(Millions of Egyptian pounds [LE], 1990/91=100)

	1990/91	1991/92	1992/93	1993/94	1994/95
Cotton yarn	1877	1936	1799	1833	1804
Public sector	1877	1936	1799	1833	1804
Private sector	0	0	0	0	0
Private share in production	0%	0%	0%	0%	0%
Cotton fabrics	1375	1381	1351	1236	1138
Public sector	753	758	742	612	512
Private sector	623	623	609	625	626
Private share in production	45%	45%	45%	51%	55%
Wool yarn	249	244	233	238	225
Public sector	206	199	185	187	174
Private sector	44	45	48	51	51
Private share in production	18%	18%	21%	21%	23%
Wool fabrics	203	200	147	120	119
Public sector	203	200	147	120	119
Private sector	0	0	0	0	0
Private share in production	0%	0%	0%	0%	0%
Jute yarn	37	39	33	32	31
Public sector	37	39	33	32	31
Private sector	0	0	0	0	0
Private share in production	0%	0%	0%	0%	0%
Jute fabrics	45	47	42	39	45
Public sector	45	47	42	39	45
Private sector	0	0	0	0	0
Private share in production	0%	0%	0%	0%	0%
Ready-made garments	1435	1486	1540	1642	1767
Public sector	153	136	123	154	240
Private sector	1283	1350	1418	1488	1527
Private share in production	89%	91%	92%	91%	86%
Carpets	91	94	89	89	86
Public sector	25	27	20	21	18
Private sector	66	67	68	68	68
Private share in production	72%	71%	77%	76%	79%
Blankets	116	116	111	112	105
Public sector	76	76	69	68	60
Private sector	40	40	42	45	45
Private share in production	35%	35%	38%	40%	43%

Source: Compiled from Ministry of Industry data.

As a result of the loss of Eastern European markets for Egypt's fine count yarns, spinning mills shifted their production to coarser yarns. However, Egypt lacks international competitiveness in this area, as indicated by the persistent decline in the value of cotton yarn exports from 1990 to 1993 and in the share of cotton yarn in total textile exports (table 3). The loss of markets in Eastern Europe, along with increased world competition, adversely affected exports of cotton fabrics although less so than yarn exports.

The gloomy export performance of cotton lint, yarns and fabrics contrasts with manufactured clothing exports, which increased at an average yearly rate of 24% during the first half of the 1990s.

The exports of Egypt–a signatory of the Arrangement Regarding International Trade in Textiles, also known as the Multifibre Arrangement (MFA)–are constrained in the United States by quotas on yarn and fabric in addition to selected finished products (shirts, blouses, towels). For most products, however, these quotas remain underutilized.

According to the 1997 cooperation agreement with the EU–the main trading partner of Egypt in textiles[3]–Egyptian textile and clothing products have duty-free access to EU markets. Cotton yarn and fabric, on the other hand, are subject to duty-free quota restrictions beyond which Egypt can export subject to the prevailing most favoured nation (MFN) tariff. Between 1989 and 1996, quotas were not fully utilized. The export performance of Egyptian textiles therefore seems to be constrained by domestic factors rather than by limits in export markets.

2. *The share of the private sector in textile exports*

Trade in textiles is highly regulated all over the world. In Egypt until 1994/95, cotton lint exports were under direct government control. Trade channels for textiles have been less rigorously regulated. Yarn production and trade were public sector monopoly until the mid-1980s, when two large investment companies were allowed to engage in these activities. However, minimum export prices for yarn and fabric are set by the Cotton Textile Consolidation Fund for both public and private sales. This price setting has seriously interfered with export sales–in particular in times of textile recession–and ad hoc adjustments have had to be made. Prices for private sector exports of knitted fabrics and ready-made woven products are not regulated. There are no quantity restrictions on textile exports.

The private sector has increasingly contributed to exports of high value added textile products. It accounts for around 70% of total knit exports, 35% of terry cloth and 30% of garment exports (table 4). Furthermore, the export performance of the private

[3] According to COMTRADE database, the EU accounted in 1994, for almost 53% of total Egyptian exports of textiles and clothing, although the various products exported had a share ranging from around 8% for synthetic yarn and fabric to 57% for cotton yarn and fabric and on to as much as 72% for ropes and other made-up textiles

sector has not been as severely hit by the world textile recession as that of the public sector, as indicated by the continued increase in the export value of knitted products, terry cloth, woven garments and ready-made fabrics, in spite of fluctuating quantities of exports.

Further analysis of change in the composition and trends of exports (as shown in tables 3 and 4) indicates that textile products for which the public sector is the only or main supplier (cotton lint, yarns) lost ground, while segments of the industry with higher value added products and in which private sector participation is high (namely clothing and other textile manufactures) have expanded. The share of cotton lint fell from 28% in 1989 to 7% in 1993[4] and that of yarn fell from 46% to 30% while the share of manufactured clothing jumped from 8% to 24% and that of fabrics and other textiles rose respectively from 8% to 11% and from 10% to 21%.

This performance indicates the private sector's ability to adapt to changing conditions and to penetrate external markets.

C. IMPORT RESTRICTIONS AND TARIFFS

Restrictions in Egypt are much greater on textile imports than on exports. With few exceptions, imports of cotton fabrics and ready-made textile products are prohibited. Even when exceptions to import bans are granted, tariffs are generally around 70%.[5]

For cotton yarns, however, there are no quantitative restrictions on imports; the tariff is a flat 30%, to which is added an additional 10% for sales tax and a surcharge of 3%. Yarn imports have provided private sector weaving companies with cheaper and more appropriate types of yarn and enabled private sector weavers to adjust to global price competition for fabrics, in particular during the textile recession.

When these yarns are imported to be woven for export, they are exempt from tariff under the temporary admissions system or under the drawback system, although the former is preferred by producers.

This selective partial liberalization with the continued ban on cotton lint imports–except for spinning mills outside the Delta region–denies the public sector companies an important alternative for competing in international and even domestic markets. Giving companies the freedom to use the appropriate raw cotton in the Egyptian spinning sector is vital if the sector is to compete effectively.

[4] This share increased again to 21% in 1994 because of a cotton crop failure in both India and China, but fell in 1994/95.

[5] They had been as high as 80% to 110% but were reduced in 1994 to a maximum of 70%.

TABLE 3. TEXTILE EXPORTS BY COMPONENTS, 1989-1994
(Thousands of Egyptian pounds [LE])

	1989		1990		1991		1992		1993		1994		1995	
Cotton, raw	594161	28%	562213	23%	193351	8%	175234	8%	146660	7%	791081	21%	5173	15%
Cotton yarn	990215	46%	1045820	43%	986520	42%	819806	39%	720546	33%	1279541	34%	10389	30%
Cotton Fabrics	176535	8%	219676	9%	309125	13%	236938	11%	272321	13%	409030	11%	3711	11%
Manufactured clothing	169801	8%	465199	19%	554016	24%	542834	26%	665328	31%	780342	20%	8581	24%
Others	225541	10%	152822	6%	303861	13%	327463	16%	354902	16%	552130	14%	7198	21%
Total textile Exports	2156253	100%	2445730	100%	2346873	100%	2102275	100%	2159757	100%	3812124	100%	35052	100%

Source: Egypt, Central Agency for Public Mobilization and Statistics, *Statistical Yearbook.*

TABLE 4. SHARE OF THE PUBLIC AND PRIVATE SECTORS IN THE EGYPTIAN EXPORTS OF THE MAIN COTTON PRODUCTS

	Thousands of dollars						Percentage					
	1989	1990	1991	1992	1993	1994	1989	1990	1991	1992	1993	1994
Yarn												
Public	349 821	290 127	230 780	206 380	165 554	291 684	88	85	85	84	81	88
Private	0	0	0	0	0	0	0	0	0	0	0	0
Law 230	45 702	49 635	40 520	38 761	38 570	41 354	12	15	15	16	19	12
Subtotal	395 523	339 762	271 300	245 141	204 124	333 038	100	100	100	100	10	100
Fabrics												
Public	56 316	63 989	72 395	57 163	68 361	96 518	74	81	82	88	87	88
Private	2 864	320	2 581	0	0	0	4	0	3	0	0	0
Law 230	17 345	14 757	13 459	7 760	9 919	13 027	23	19	15	12	13	12
Subtotal	76 525	79 066	88 435	64 923	78 280	109 545	100	100	100	100	100	100
Ready made fabrics												
Public	7 852	14 956	15 675	12 788	15 394	25 556	91	89	87	84	87	85
Private	164	534	1 320	1 850	1 040	1 960	2	3	7	12	6	7
Law 230	648	1 320	1 064	528	1 219	2 437	7	8	6	3	7	8
Subtotal	8 664	16 810	18 059	15 166	17 653	29 954	100	100	100	100	100	100
Knitting							0					
Public	10 334	10 105	7 834	13 348	15 590	19 391	17	16	11	17	14	15
Private	45 740	46 623	49 651	53 306	72 836	87 091	76	72	68	69	66	68
Law 230	4 084	8 245	15 679	10 440	21 241	21 288	7	13	21	14	19	17
Subtotal	60 158	64 973	73 164	77 095	109 667	127 770	100	100	100	100	100	100

	Thousands of dollars						Percentage					
	1989	1990	1991	1992	1993	1994	1989	1990	1991	1992	1993	1994
Towels							0					
Public	5 916	3 217	4 396	3 971	5 397	7 287	93	85	81	65	63	64
Private	71	572	1 002	2 168	3 125	4 130	1	15	19	35	37	36
Law 230	384	0	0	0	1	0	6	0	0	0	0	0
Subtotal	6 371	3 789	5 398	6 139	8 523	11 417	100	100	100	100	100	100
Woven garments							0					
Public	7 894	11 933	10 554	10 470	9 336	10 125	32	31	20	15	9	9
Private	5 953	9 117	18 634	21 102	25 124	31 296	25	23	36	30	25	27
Law 230	10 450	17 946	23 058	38 968	67 415	75 515	43	46	44	55	66	65
Subtotal	24 297	38 996	52 246	70 540	101 876	116 937	100	100	100	100	100	100
Total products							0					
Public	438 133	394 327	341 634	304 120	279 632	450 560	77	73	67	63	54	62
Private	54 792	57 166	73 188	78 427	102 125	124 478	10	11	14	16	20	17
Law 230	78 613	91 903	93 780	96 456	138 367	153 623	14	17	18	20	27	21
Subtotal	571 538	543 396	508 602	479 003	520 124	728 661	100	100	100	100	100	100
Exchange rate ($/LE)	3.00	3.34	3.32	3.32	3.35	3.39						

Source: Textile Consolidation Fund. Figures for 1989 to 1992 were taken from the study by Chemonics International, "Assessment of potential for liberalization and privatization of the Egyptian cotton textile subsector", submitted to the Textile Industries Holding Co., Egypt and to USAID, Cairo, Annex C, .p. C-2. Francoise Clement updated the table to 1994.

TABLE 5. IMPORTS OF TEXTILES FROM VARIOUS REGIONS AS A PERCENTAGE OF TOTAL IMPORTS, NOMINAL PROTECTION, MAXIMUM, MINIMUM AND STANDARD DEVIATION OF TARIFF, 1996

HS No.	Percentage of total world imports	Nominal protection	Maximum	Minimum	Standard deviation
	European Union				
50	13.50	25.72	60	5	0.231
51	30.71	35.28	60	5	0.216
52	5.81	49.22	60	30	0.143
53	2.40	26.59	60	5	0.192
54	16.94	29.26	60	5	0.174
55	39.79	17.39	60	10	0.198
56	44.44	15.82	40	10	0.124
57	10.94	70.00	70	70	0.000
58	33.65	53.51	60	20	0.116
59	52.67	30.68	70	10	0.210
60	68.79	60.00	60	60	0.000
61	16.33	66.22	80	30	0.102
62	6.14	70.00	70	70	0.000
63	39.65	64.99	70	30	0.133
Total	24.48	28.05	70	16	0.201
	United States				
50	0.21	5.00	5	5	0.000
51	1.25	58.42	60	30	0.150
52	3.79	32.38	60	30	0.132

HS No.	Percentage of total world imports	Nominal protection	Maximum	Minimum	Standard deviation
53	0.00		0	0	
54	9.15	16.52	60	5	0.157
55	5.21	12.32	60	10	0.264
56	31.43	17.63	40	15	0.128
57	1.41	70.00	70	70	0.000
58	3.98	53.68	60	20	0.138
59	3.75	30.42	60	20	0.178
60	1.37	60.00	69	60	
61	2.16	65.10	70	30	0.131
62	0.51	70.00	70	70	0.000
63	0.87	49.72	70	30	0.170
Total	5.39	19.05	70	5	0.235
	Middle East and North Africa (MENA)				
50	5.45	44.48	60	30	0.173
51	4.61	54.10	60	5	0.288
52	0.68	55.91	60	5	0.208
53	1.65	8.39	60	5	0.389
54	1.55	39.29	60	15	0.173
55	4.00	36.01	60	10	0.149
56	3.30	20.93	40	15	0.126
57	51.20	70.00	70	70	0.000
58	7.52	57.20	60	20	0.140
59	0.70	46.83	60	20	0.176

HS No.	Percentage of total world imports	Nominal protection	Maximum	Minimum	Standard deviation
60	0.00		0	0	
61	14.42	70.31	80	30	0.067
62	19.89	70.00	70	70	0.000
63	3.25	62.71	70	30	0.154
Total	7.10	60.58	70	8	0.191
	Turkey				
50	0.00		0	0	
51	0.18	60.00	60	60	0.000
52	0.43	30.00	30	30	
53	0.00		0	0	
54	6.56	14.30	40	5	0.102
55	3.84	19.92	60	10	0.174
56	2.12	36.74	40	15	0.124
57	0.37	70.00	70	70	
58	1.61	59.73	60	20	0.179
59	2.70	13.36	60	10	0.219
60	0.00		0	0	
61	3.21	70.00	70	70	0.000
62	5.03	70.00	70	70	0.000
63	7.83	52.43	70	50	0.104
Total	4.04	34.33	70	13	0.229
	Israel				
50	0.00		0	0	

HS No.	Percentage of total world imports	Nominal protection	Maximum	Minimum	Standard deviation
51	0.00		0	0	
52	0.96	37.69	60	30	0.113
53	0.00		0	0	
54	0.00	30.00	30	30	0.000
55	0.00		0	0	
56	0.00		0	0	
57	0.00		0	0	
58	1.68	35.61	60	20	0.191
59	0.13	58.84	60	20	0.283
60	0.00		0	0	
61	0.00		0	0	
62	0.00	70.00	70	70	
63	0.01	50.00	50	50	
Total	0.07	39.18	70	30	0.154
	Rest of the world				
50	80.85	22.92	0	0	
51	63.26	10.87	60	5	0.238
52	88.34	52.32	60	30	0.133
53	95.95	20.20	60	5	0.196
54	65.80	24.45	60	5	0.169
55	47.17	42.26	60	10	0.193
56	18.72	29.16	40	10	0.124
57	36.08	70.00	70	70	0.000

HS No.	Percentage of total world imports	Nominal protection	Maximum	Minimum	Standard deviation
58	51.57	54.05	60	20	0.132
59	40.05	32.26	60	10	0.200
60	29.84	60.00	60	60	0.000
61	63.87	69.84	80	30	0.103
62	68.43	70.00	70	70	0.000
63	48.38	54.26	70	30	0.162
Total	58.90	43.91	70	11	0.204

Source: Compiled by Nihal El-Megharbel, from data obtained from the International Trade Department at the Egyptian Ministry of Supply and External Trade.

The tariff rates on textiles are typical of all tariff structures. Raw materials (cotton lint) receive nominal protection of 5%, yarn is taxed at the rate of 30%, and fabrics are subject to a 60% tariff, while ready-made garments and other made-up textiles are taxed at the rate of 70%. Table 5 gives the weighted average nominal tariff protection for imports broken down by the Harmonized Commodity Description and Coding System at the 2-digit level as well as the maximum and minimum tariff for each code number and its standard deviation for the main suppliers of textile products to Egypt, by region.

The weighted average nominal tariff on textile imports from Israel is 39.18% compared with 28.05% for imports from the EU, 19.05% for imports from the United States, 60.58% for imports from MENA countries and 43.91% for the rest of the world. Imports from Israel account for a negligible 0.07% compared with 24.48% from the EU, 5.39% from the United States, 7.10% from MENA countries and 58.90% from the rest of the world. The difference observed between nominal protection against imports from various regions and countries is due to differences in import mix rather than to any difference in the actual tariff rates applied.

In addition to the ascending system of tariffs applied to imports of textiles and garments, these products are also subject to tight quantitative restrictions, mainly on fabrics and ready-made garments. However, it should be noted that these restrictions have not been fully effective: tariffs were not applied in free zones like Port Said, and continuous smuggling from the free zones made these products domestically available.

Egypt is committed, according to the requirements of the Agreement on Textiles and Clothing (ATC) of the Uruguay Round, to a gradual phasing out of quantitative restrictions over a period of ten years, beginning in January 1995. In addition, tariffs are to be gradually reduced, which requires Egypt to be prepared for such liberalization.

D. Effective Protection of the Textile and Clothing Industry

As mentioned above, the textile and clothing industry has suffered from intensive government interference in the prices of its inputs as well as its outputs. This interference has resulted in a distorted incentive structure which has led to a misallocation of resources, as it gives the wrong signals to investors and producers.

The concept of effective rate of protection (ERP) is used to reflect the structure of incentives given to a certain activity. Although it is not a measure of efficiency, it will be noted that high ERPs are usually associated with inefficiency while low ERPs indicate that activities are efficient.

ERPs were calculated for spinning, weaving and clothing. Two sets of estimates were made: the first (ERP_1) takes into account all elements of protection including the effect of interference in prices and of quantitative restrictions on imports. The second set (ERP_2) is based on the assumption that tariffs are the only means of protection and

intervention in the domestic price system. This is a hypothetical case where the domestic price for any product is equal to its world price augmented by the respective tariff rate.

The results are shown in table 6, which also indicates implicit and nominal protection coefficients for outputs and inputs in each activity.

Estimated ERP_1s for the spinning activity show that two companies are slightly taxed, one is enjoying considerable protection (as the value added at world prices is negative), while the others enjoy relatively limited protection ranging between 4% and 19%. Companies with negative ERP_1 are actually achieving a domestic value added that is smaller than what could be realized in the absence of protection. This implies further that, in spite of the ascending tariff structure, other elements of protection have had an adverse effect on incentives to this industry. However, negative ERP_1 is limited, especially in the first company, and can easily be ignored, suggesting that the company is producing in close to free market conditions. Calculations have also been made for different yarn qualities. Coarse yarn enjoys significant protection, fine yarn is slightly protected, and medium yarns is slightly taxed. Although all are benefiting from cotton subsidy, different ERPs are mainly attributed to different levels of implicit nominal protection of product j (INP_j): while the world price of coarse yarn is very close to its domestic price, the respective world prices for fine and medium yarns are higher than their domestic equivalents.

The values of ERP_1 in all other activities, including weaving, ready-made garments and miscellaneous products, are all negative. However, this is due to wide quality differentials between lower-priced yarns produced for the domestic market and those exported at higher prices and hence yielding higher value added. If these companies were to produce the same qualities designated for export and sell them at the same price, they would substantially increase domestic value added and ERP_1 would not be negative.

Finally, a wide gap–and sometimes an inconsistency–is noted between ERP_1 measured on the basis of actual domestic and world prices and ERP_2 calculated on the basis of tariff alone. Estimated values of ERP_2 suggest that tariffs provide substantial protection to all production activities in the public cotton textile and clothing sector. They imply further that some of these activities would not continue producing in the absence of tariffs, as value added would be negative.

In theory, tariffs increase domestic prices of tradable products over their international equivalent by an amount equal to these tariffs. However, this has not been the case. For example, where according to the tariff rate the domestic price of yarn equals the world price plus 30% (that is, $NP_j = 30\%$), the actual domestic price was always less than the f.o.b. price for the same product, and the average implicit nominal protection was about (7.1%).

TABLE 6. EFFECTIVE PROTECTION IN TEXTILE AND CLOTHING INDUSTRY
(Percentage)

Company No.	ERP_1	INPj	INPi	ERP_2	NPj	NPi
Spinning industry						
1	(2.9)	(9.5)	(15.2)	76.9	30	6.7
2	(16.6)	(11.2)	(11.5)	81.4	30	6.2
3	4.0	(8.8)	(12.9)	104.8	30	6.1
4	11.0	(2.8)	(4.5)	86.8	30	7.1
5	17.9	(3.2)	(10.8)	97.1	30	5.8
6	19.1	(7.3)	(15.0)	110.9	30	5.7
7	NIVA	2.4	(12.5)	NIVAa	30	6.2
Coarse yarn	55.0	2.4	(15.2)	----	30	
Medium yarn	(4.8)	(11.0)	(15.2)	----	30	
Fine yarn	11.0	(6.5)b	(15.2)	----	30	
Weaving industry						
1	(39.0)	(11.6)	2.5	123.1	60	28.9
2	(61.0)	(25.9)	3.4	97.5	60	28.6
3	(62.0)	(15.9)	2.9	105.9	60	28.5
4	(71.0)	(23.3)	3.2	82.8	60	24.9
Ready-made garments						
1	(3.1)	(1.5)	2.4	115.2	70	55.8
2	(22.0)	(12.9)	(10.6)	132.0	70	56.7
Knitwear						
1	(31.0)	(13.7)	(5.9)	124.7	70	28.3
Bed linen						
1	(32.0)	(8.3)	2.1	146.4	70	55.1
Terry fabrics						
1	(10.0)	(4.7)	3.4	82.5	70	58.2
2	(57.0)	(34.0)	(1.0)	85.9	70	56.7

Notes: ERP_1 = Due to all elements of protection; ERP_2 = Due to tariff only; INPj = Implicit nominal protection of product j ( ) x 100; NPj = nominal protection of product j; pd = domestic price; pw = world price; INPi implicit nominal protection of input i; NPi = nominal protection of input i. Positive INP_j means that the domestic price of the output is higher than the respective world price, which increases the ERP. Positive INPi decreases effective protection through taxation of input, whereas negative INPi increases protection through input subsidization.

a/ When DRC is less than 0, the activity is disadvantageous, as it involves a foreign exchange loss, since the value added at world prices would be negative. Such cases are referred to as NIVA.

b/ It should be noted that according to the companies reports, the difference between the export price for fine yarn and its domestic price was much less than the corresponding one for the medium yarn. This was not the case in previous years as in 1991/92, where the INPj for medium yarn was (14.5%), while for fine yarn it was (28.6%).

This can be explained by several factors including differences in quality and costs, and non-tariff measures of protection. The imposition of such measures isolates the domestic market from external influence, and tariffs become redundant as a means of protection in the presence of quantitative measures.

II. EFFICIENCY OF THE TEXTILE AND CLOTHING INDUSTRY

The issue of the economic efficiency of the Egyptian cotton textile and clothing industry is now of particular importance. Aggressive competition is expected to prevail in both the domestic and international markets, as a result of trade liberalization according to GATT rules or in the context of implementing partnership agreements with the EU or with the United States and Canada or as a result of regional cooperation in the Middle East.

Several indicators can be used to assess economic efficiency, such as financial returns, labour productivity, input waste rates, and capacity utilization. A more comprehensive indicator, however, is the domestic resource cost per unit of foreign exchange (DRC). In this section, the two approaches will be followed: partial indicators of efficiency will be assessed, and then DRCs will be calculated, using available data for public sector companies.

A. PARTIAL INDICATORS OF EFFICIENCY

These indicators include criteria such as rates of defective output of various products, waste rates for various inputs, and rates of capacity utilization.

The rate of defective outputs of a sample of major product items drawn from 13 cotton textile companies–accounting in 1993/94 for 64.65% of total production and 61.92% of exports of the 25 public sector cotton textile companies–was shown in a recent audit report to have increased between 1992/93 and 1993/94 in nine of the surveyed cases. In 1993/94 it ranged between 6.2% and 57.7% for various major products of one of these companies.

Various inputs waste rates were observed in the same report to exceed the standard rates in 10 surveyed companies. Efficiency in using cotton lint, as measured by the amount of lint per ton of yarn, was also reported to have increased in 12 companies, and while the count number of yarn spun declined in four companies, it rose in five others and was constant or unreported in the remaining companies of the cotton textile sector. However, the average count number of yarn never exceeded 35 (a relatively thick medium-count yarn), as shown in table 7.

TABLE 7. AVERAGE COUNT YARN PRODUCED IN A SAMPLE OF PUBLIC SECTOR SPINNING MILLS

Company	1992/93	1993/94
Misr Mehalla	26.1	26.9
Damietta	28.3	26.3
Dakahlia	29.8	28.4
Zagazig	21.6	22.5
El-Sharkia	18.8	18.7
Misr-Helwan	21.6	23.2
Kafr-El-Dawar	30.2	29.9
UNIRAB	30.5	27.4
National	20.1	20.4
El-Siouf	26.7	26.3
El-Nasr Mehalla	26.3	24.7
Alexandria	25.9	26.9
Misr Shebin El-Kom	33.9	34.5
Upper Egypt	28.7	31.2
ESCO	27.9	25.6
Middle Egypt	30.8	23.8

Source: Audit report on textile companies.

Note: The English system for yarns (Net) defines the following categories: less than 22 Ne is defined as coarse yarn; 22 Ne and less than 60 is medium-count yarn; 60 Ne and higher is fine-count yarn.

A great deal has been written on the issue of the efficiency of using domestic long staple cotton as an input to the domestic textile industry. Egypt extra-long staple (ELS) and long staple (LS) cotton varieties are best suited for producing yarn counts of 51 and higher.[6] The consensus has long been that unless the very high quality–and hence high opportunity cost–ELS and LS cotton is used to produce a high quality output which yields a high international price, the spinning activity in Egypt will have no comparative advantage. Egypt is mainly spinning and exporting coarse and medium count yarns, thus underspinning the fine quality lint it is using and raising the raw material costs of yarn produced, as illustrated in table 8.

Labour productivity measured in terms of real output per worker and in terms of production at constant 1992/93 prices per LE of wages has shown diverging results. The first measure shows an increase in labour productivity in 1993/94 in 15 companies and a decline in 10 others, with three of the latter recording negative value added in constant 1992/93 prices. The second measure of labour productivity indicates a decline in wage productivity in 1993/94 compared with the previous year in 20 companies and an increase

[6] See, for example, the report prepared by the Secretariat of the 47th Plenary Meeting of the International Cotton Advisory Committee, Lima, Peru, October 1988.

in only five. These observations suggest that wage cost per worker increased faster than either real production or real value added per worker, indicating an increase in wage costs of cotton textiles owing to declining labour productivity.

TABLE 8. COTTON COST OF YARN IN VARIOUS COUNTRIES, 1995

Country	Cotton costs (US$ per kg of cotton)	Cotton cost as % of total yarn cost	Country	Cotton costs (US$ per kg of cotton)	Cotton cost as % of total yarn cost
Brazil	2.01	42%	Japan	2.32	41%
India	2.04	47%	Republic of Korea	2.30	51%
Italy	2.27	43%	Thailand	2.31	51%
Egypt	2.21	62.5%	United States	2.15	43%

Source: Various countries, *1995 International Production Cost Comparison*, International Textile Manufacturers Federation. Figures for Egypt were derived from accounts of public sector companies for 1994/95, f.o.b. price of the qualities used by the companies, according to CAPMAS 1995.

The rate of capacity utilization has been reported to vary considerably among companies and production processes. For yarn, it has ranged from as little as around 40% to about 85%, with a number of spinning mills concentrated in the range of a 65% to 70% rate of capacity utilization. In weaving, the reported range was 50% to 90%, with a large number of cases exceeding 70%. The main reasons for the low rate of capacity utilization are either related to internal problems (such as the non-availability of major inputs, poor maintenance of machinery and equipment, inadequate supervision, lack of incentives, and negligence) or are external to the firm and relate to insufficient demand.

These observations corroborate a final observation, namely the high costs of production relative to the domestic sales price and the export price. Domestic sales prices and export prices barely cover the total costs of the majority of products, and sometimes they do not cover production costs. In a few instances they even fail to cover the cost of direct raw materials and labour.

No information is available on the relative importance of the selected manufactured products in the total production of the companies concerned. However, the audit report refers to them as being the "major products".

B. DOMESTIC RESOURCE COST OF TEXTILE AND CLOTHING INDUSTRY

The DRC measures the amount of domestic resources required to earn (or save) one unit of foreign exchange through export (or import substitution).

In a recent study, DRCs were calculated for yarn, fabric and ready-made garment production in eight public sector companies.[7] These companies included one company that produces cotton yarn exclusively, one that produces only knitted garments, the six others which are integrated units producing yarn, fabrics, ready-made garments and miscellaneous products such as bed linen and terry products.

In 1993/94, these eight companies accounted for 47.0% of the public sector's total production and 58.75% of its total exports of cotton textiles.

Data were collected from the follow-up and performance evaluation reports on the individual companies for the year 1994/95.

1. *Efficiency of cotton yarn production*

Despite reform measures undertaken since the late1980s to liberalize this sector, yarn input prices remain highly regulated.

The production of yarn has traditionally benefited from a high level of cotton subsidies: cotton selling prices to the spinners have always been set at levels far below their respective export prices and often below their farm-gate prices. Subsidy rates have fluctuated from year to year, and they also differed from one variety to another. The traditionally high subsidy for ELS has resulted in the wasteful use of this fine variety of cotton to produce coarse and medium yarns.

On the other hand, it should be noted that domestic prices of yarn have recently been raised to approach their export prices. However, it has been observed that in several cases, the domestic and even the export prices of yarn have been set at levels below the cost of production, as mentioned.

Table 9 shows the DRC ratios calculated for yarn production. Of the seven companies included only two are considered efficient in producing cotton yarn, as their DRCs are below unity. This implies that if these two companies produce the same yarn varieties they are exporting for the domestic market and sell them at the same export price, and if they use inputs without any subsidy, they will be efficient. Thus, it would be beneficial to the economy as a whole to proceed in this activity, as it is a net foreign exchange earner. It is worth noting that the first company is the largest producer in the entire sector, while the other is specialized in yarn production. As for the others, four companies appear inefficient at the existing level and structure of production and input mix, and the last company is extremely inefficient: its spinning activity involves an absolute loss of foreign exchange (as its value added at world prices is negative) and thus it should be stopped.[8]

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[7] See Kheir-El-Din and El-Sayed, op. cit.

[8] Note that these five companies incurred net financial losses in 1993/94 and in 1994/95.

These differences among companies might be attributed to several factors, among them the following:

- *The technical efficiency of using a given input mix* depends on the degree of capacity utilization and the degree of control over waste. The yield of yarn per metric ton of lint cotton differs from one company to another. In addition, the ratio of other inputs used to total production varied from one unit to another.[9]

- *The input mix employed.* The extensive use of highly subsidized cotton, such as ELS, results in a smaller value added at world prices than the use of cheaper, less subsidized cotton.

- In addition, *the amount of resources used for producing a unit of yarn* differs from one company to another, which reflects differences in the productivity of labour, wages and capital.

- *The product mix* plays an important role in determining the efficiency of the productive activity. This can be shown by estimating DRCs for different qualities of yarn; as shown in table 9, coarse yarn production is highly inefficient, while the production of medium and fine count yarn is clearly efficient. Furthermore, it appears that the use of ELS in producing coarse yarn involves a relative loss of foreign exchange.

If we assume that ELS cotton is replaced by cheaper Egyptian cotton (MLS) for the production of coarse yarn, the DRC falls from 1.3 to 1.106, which indicates that Egyptian cotton should not be used to produce coarse yarn and should be replaced by cheaper imported qualities.

Accordingly, it may be concluded that improving yarn production efficiency requires changing the product mix to qualities with higher world prices and using an appropriate cotton input mix. In addition, improving technical efficiency is essential if the industry is to become economically profitable. Finally, the necessity of ensuring the regular availability of other intermediate inputs and spare parts, and of improving maintenance and imposing strict discipline on labour standards, cannot be overemphasized.

2. *Economic efficiency of cotton weaving*

Table 9 shows estimated DRCs for the cotton weaving activity in four public sector companies for which cotton fabric production accounts for 12% to 32% of total production. These estimates indicate that cotton fabric production is an efficient activity in all the companies, as DRCs vary between 0.36 and 0.78. Differences in estimates

[9] It has been reported that the waste rate in some companies exceeds 30%, while capacity utilization rates are sometimes as little as 40% and did not exceed 85% in 1993/94.

mainly reflect the wide variation in the product mix in each company as well as their prices.

TABLE 9. DRC RATIOS IN THE COTTON TEXTILE AND CLOTHING INDUSTRY

Company No.	DRC ratios
Cotton spinning industry	
1	0.710
2	0.863
3	1.028
4	1.061
5	1.082
6	1.315
7	NIVA a/
Coarse yarn	1.331
Medium yarn	0.824
Fine yarn	0.950
Cotton weaving industry	
1	0.36
2	0.61
3	0.75
4	0.78
Other cotton textile and clothing manufacturing	
Ready-made garments	
1	1.420
2	1.142
Knitwear	0.350
Bed linen	0.753
Terry fabrics	
1	0.180
2	0.284

Source: See Hanaa Kheir-El-Din, and Hoda El-Sayed, "Potential impact of a free trade agreement with the EU on Egypt's textile industry", in *Regional Partners in Global Markets: Limits and Possibilities of the Euro-Med Agreements*, ed. A. Galal and B. Hoekman (CEPR and ECES, 1997).

a/ When DRC is less than 0, the activity is disadvantageous, as it involves a foreign exchange loss, since the value added at world prices would be negative. Such cases are referred to as NIVA.

Greater efficiency is related to improved production quality and hence higher prices and value added. It should be noted that in cotton weaving, unlike in yarn production, inputs have a minor impact on the DRC of fabric production. All the companies in the sample mainly use coarse yarn, which is the cheapest quality and which represents a small portion of the total costs of production.

3. *Efficiency of other textile and clothing production*

Other textile and clothing industries include garments, knitted garments, bed linen and terry products. The results of DRC calculations are shown in table 9.

With regard to ready-made garments, calculations were made for only two companies and reveal that both are inefficient in producing ready-made cotton garments. This may be explained by the use of expensive Egyptian cotton fabrics to produce cheap cotton clothes.

Knitwear and other products, however, seem highly efficient, as their export unit value is high, and so is their value added at world prices, relative to the resources used in production.

III. EXPORT POTENTIALS AND COMPETITIVITY

A. RESOURCE ENDOWMENTS

It is generally claimed that Egypt's comparative advantage relies on its natural resources, its location and its labour. Its natural resources yield a variety of ELS and LS (over 1 1/4 inches long) and medium long staples (MLS) (1 1/8 to 1 1/4 inches). Production of long staples has been falling since the mid-1970s. By 1992, medium-long varieties accounted for over 70% of total cotton output. Egypt's share of world premium extra long staples has fallen dramatically. In 1980/81 Egyptian output of this variety amounted to 59.2% of the 1989/90 season, and Egypt's share of total world output accordingly fell to 27%. In contrast, India's share rose from 12.2% to 24%.

Egypt's proximity to the European markets gives it an advantage there. However, this advantage is shared by all competitors in the Mediterranean region: Israel, Morocco, Tunisia and Turkey, as well as by Central and Eastern European Countries.

Egypt's comparative advantage cannot lie in the simplest, most labour-intensive goods, since it is unable to compete with East and South Asia in this area. However, a comparison of labour costs in garment production nevertheless puts Egypt among the lowest-labour-cost producers (see table 10). Although it cannot compete with China, Indonesia, Pakistan, Sri Lanka or Vietnam in terms of labour cost, it can easily compete with India and Thailand, in particular if location and transport costs are accounted for. The most appropriate plan would be to find a suitable niche where Egypt could differentiate its products and capitalize on its location and on the quality of its cotton endowment.

B. COMPARATIVE ADVANTAGE

Disaggregated exports of a country generally indicate where the domestic productive activities are internationally competitive, whereas a country's imports point to where it lacks such competitiveness. For exports and imports of specific products, a positive trade balance may reflect a comparative advantage in international trade, while a

negative balance may reflect a disadvantage. The revealed comparative advantage (RCA) for Egyptian exports of textile and clothing products was calculated, based on the actual export and import flows, in 1994 for EU markets and in 1996 for Israel and for the rest of the world. Table 11 reports the results for the 2-digit HS code.[10]

By definition, a country has a comparative advantage in products with RCA > 0. The higher the RCA index, the more successful is the trade performance of the industry in question.

Egypt appears to have comparative advantage in all but 6 of the 14 groups of textile products considered, namely: silk products (item 50), woolen products (item 51), synthetic products (items 54 and 55), woven fabrics, laces (item 58) and impregnated, coated fabrics (item 59). Its comparative advantage in the EU is higher than in the rest of the world for all these textile and clothing products except for two: knitted fabrics (item 60) and made-up textile articles (item 63).

Egypt's exports to Israel are restricted to cotton yarns and fabrics (item 52), impregnated, coated fabrics (item 59), knitted fabrics (item 60) and clothing, not knitted (item 62). Egypt has a clear comparative advantage in exporting cotton yarns and fabrics and garments to this market, although it enjoys a higher RCA in exporting to the rest of the world. It has no comparative advantage in exporting knitted fabrics to Israel, but it appears to have a comparative advantage in exporting impregnated, coated fabrics to Israel–an item for which it has no comparative advantage with the rest of the world. Egypt also exports other items to Israel, principally carpets.

In conclusion, Egypt enjoys a high comparative advantage in exporting a broad spectrum of textiles and clothing, ranging from cotton yarn and fabric to various clothing items and finished textile products, to the rest of the world and to EU markets. Egypt's comparative advantage in exporting to Israel is restricted to cotton yarn and fabric and to some clothing items (not knitted). Consideration of RCA at a more disaggregated level would indicate more specifically those products with good export prospects.

It should be noted that RCA indices have been calculated on the basis of prevailing prices as well as domestic and external restrictions on imports and exports. Tariffs, quotas, bans, indirect taxes and subsidies could distort the results and affect the structure of international competitiveness. Any change in trade policy towards liberalization–tariff reductions or elimination or abolition of quantitative restrictions–would have a direct impact on the relative competitiveness of various product groups.

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[10] The revealed comparative advantage (RCA) is calculated by the following formula:

$$RCA = \ln\left(\frac{Mi}{M} \Big/ \frac{Xi}{X}\right) \times 100$$

where X and M denote value of imports and exports respectively and i refers to a commodity group at the 2-digit HS classification level.

Furthermore, efficiency improvements in domestic production would be reflected in cost and price reductions and hence in external competitiveness.

TABLE 10. COMPARISON OF LABOUR COSTS IN THE GARMENT SECTOR IN SELECTED COUNTRIES, SUMMER 1993

Country or area	Average cost per operator/hour as percentage of US cost	Indirect charges as percentage of gross wages
Brazil	13.0	70.0
China	3.0	33.0
Egypt	5.0	43.0
Hong Kong	33.0	16.0
India	5.0	38.0
Indonesia	4.0	26.0
Italy	140.0	99.0
Japan	204.0	68.0
Republic of Korea	32.0	44.0
Malaysia	10.0	46.0
Pakistan	4.0	49.0
Philippines	7.0	29.0
Singapore	31.0	22.0
Sri Lanka	3.0	20.0
Taiwan Province of China	50.0	34.0
Thailand	9.0	11.0
Turkey	30.0	71.0
United States	100.0	33.0
Vietnam	3.0	27.0

Source: Werner International, Inc., *Spinning and Weaving Cost Comparisons* (New York, Summer 1993).

IV. THE TEXTILE SECTOR'S INDUSTRY AND TRADE RELATIONS WITH ISRAEL[11]

In spite of close to 20 years of peace between Egypt and Israel, trade and industry relations between the two countries in textile and garment activities have remained very limited.

[11] The author wishes to thank Dr. Alaa Arafa of Swiss Garments for being particularly helpful in providing information on Egyptian-Israeli relations in the field of textiles.

TABLE 11. REVEALED COMPARATIVE ADVANTAGE OF EGYPT, 1994, 1996
(Percentage)

HS No.	Textile products	World 1996	EU 1994	Israel 1996
50	Silk yarn and fabrics	-550		
51	Wool yarn and fabrics	- 92	-184	
52	Cotton yarn and fabrics	234	609	34
53	Other natural-fibre yarn and fabrics	69	297	
54	Man-made filament	-213	-230	
55	Man-made staple fibres	-156	-285	
56	Wadding, yarn, twine	62	76	
57	Carpets and other floor coverings	376	547	
58	Woven fabrics, laces	- 9	73	
59	Impregnated, coated fabric	-276	-156	193
60	Knitted or crocheted fabric	247	118	-94
61	Knitted or crocheted clothing	581	603	
62	Clothing, not knitted or crocheted	501	571	361
63	Made-up textile articles	760	592	

A. TRADE RELATIONS AND RELATIVE COMPETITIVENESS

In 1996, Egyptian imports from Israel did not exceed 2.34% of total imports of textiles and garments, while Egyptian exports to Israel were a negligible 0.4% of total textile and garment exports. The textile trade balance was in favour of Israel (a deficit of around $3.04 million), although Egypt generally exports more textiles and garments than it imports (a surplus of about $314.18 million).

There also seems to be active cross-border smuggling of garments to Egypt; however, such border trade is not documented.

Although export items include cotton yarn and fabrics (item 52), carpets (item 57) and clothing, not knitted (item 62), none of these items has a share in total exports of over 0.58% (as shown in table 12).

Imports from Israel are more varied and include mainly cotton yarn and fabric again (item 52), synthetic fibres (items 54 and 55), wadding (item 56) and knitted fabrics (item 60).

Intra-trade[12] activity was observed in four (items 52, 59, 60 and 62) of the eleven traded items. It is most active in cotton yarn and fabric (item 52) and in coated fabric (item 59); however, the latter item is of negligible importance in both imports and exports.

Egypt appears to have a revealed comparative advantage *vis-à-vis* Israel in all export items but one, knitted or crocheted fabrics (item 60).

In garment production, Egypt's advantage lies in the availability of trained workers, which makes labour cost per unit of output much lower than in Israel–one tenth of that in Israel, according to some producers' and exporters' estimates.

Israel's competitive edge lies in industrial engineering, marketing capabilities and connections.

Raw materials (fabric) are either insufficient or inadequate–in terms of quality and price–in both countries. Fashion design for exportable garments and ready-made clothing is imported in both countries, whether from EU countries or from the United States or the Far East.

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[12] The intra-trade index has been calculated as:

$$\frac{(Xi + Mi) - |Xi - Mi|}{Xi + Mi}$$

where Xi and Mi are respectively exports and imports of item i. This index ranges between 0 and 100; the higher its value, the greater is intra-trade activity.

Although Israel appears to have been more active in exporting to Egypt than Egypt is in exporting to Israel, the main export item where Israel seems to have established a highly competitive niche is that of swimwear.

Egyptian garment exports to Israel are undermined by the preferential treatment other countries enjoy under free-trade agreements concluded with Israel (the EU countries, Turkey) or under other preferential arrangements (Jordan, for example, although it is not an important producer of garments).

B. INDUSTRY RELATIONS

The limited Egyptian-Israeli trade relations that have been recorded do not reflect active industry relations between the two countries which lead to enhancing Egyptian exports to third markets. Industry relations essentially take the following forms:

One form is that of dealing through agencies. Three Israeli agency offices operate in Egypt: Shira, Rano and I.O.B. The agency receives an order from its external customer and places it with Egyptian producers against a commission varying from 3% to 7% of the value of the order.

Another form is the classic subcontracting arrangement in the sense that Israel producers–owing to their market skills and connections–receive the order and offer it to Egyptian factories at a lower price than contracted, and also help in sourcing fabrics and accessories. Examples of such transactions have taken place between the Egyptian Swiss Garments and Bagir of Israel, and between Lena in Egypt and Delta of Israel. The share of the Israeli partner in this type of transaction amounts to 40% of the contracted value.

A third form of industry relation involves cutting the fabric in Israel, shipping it to Egypt to be sewn and packed, under the temporary admissions system, and re-exporting the finished items to Israel to be exported to the United States under the Israeli label, in accordance with the free-trade agreement between the United States and Israel. Under this agreement, the rules of origin consider the finished garment to originate in the country where it was cut rather than where the fabric was produced, which is the case with the EU. This type of transaction has helped Egypt overcome the quota restrictions imposed by the United States on finished garments.

Joint ventures have not developed in the field of textiles. Several initiatives have been recorded (Swiss Garments with Bagir, Samir Riad and Tefron, Halawa and Solog); however, they either failed or have not yet been completed. It seems (based on interviews with the Egyptian parties involved) that negotiations to establish joint ventures with Israeli partners have involved investment sharing rather than technology transfer.

In addition to these joint activities, an Israeli firm has established a garment factory in one of Egypt's free zones.

TABLE 12. ISRAEL'S SHARE OF EGYPTIAN TEXTILE EXPORTS AND IMPORTS ACCORDING TO 2-DIGIT HS CLASSIFICATION, 1996, INTRA-TRADE INDICES AND REVEALED COMPARATIVE ADVANTAGE (RCA)

		Exports to Israel		Imports from Israel		Intra-trade index	RCA
HS No.	Textile product	Value (thousands of dollars	Percentage	Value (thousands of dollars)	Percentage	Percentage	Percentage
52	Cotton yarn and fabrics	1475	0.55	3872	4.61	55.16	33.85
53	Other natural fibre yarn and fabrics	67	0.96	-	0.00	0.00	
54	Man-made filament	-	0.00	188	0.21	0.00	
55	Man-made staple fibres	-	0.00	294	1.27	0.00	
56	Wadding, yarn, twine	-	0.00	473	5.07	0.00	
57	Carpets and other floor coverings	141	0.58	-	0.00	0.00	
58	Woven fabrics, laces	1	8.92	-	0.00	0.00	
59	Impregnated, coated fabric	20	9.36	11	0.72	69.57	193.22
60	Knitted or crocheted fabric	18	0.46	174	27.41	19.19	-93.91
62	Clothing, not knitted or crocheted	180	0.18	18	0.51	18.11	361.05
63	Made-up textile articles	84	0.11	-	0.00	0.00	
Total		1987	0.40	5029	2.34		

Source: Central Agency for Public Mobilization and Statistics (CAPMAS) and author's calculations.

As of 1985, Egypt's private sector actively began to develop exports of garments. Exports were first limited to underwear, T-shirts and men's shirts; however, the Egyptian private sector is increasingly moving towards exporting fashion goods and tailored goods. Egypt is actively exporting such products to the United States. Egypt is also starting to export such products to European markets, although on a more limited scale.

Israel's participation in marketing and in establishing contacts cannot be disregarded. Official documentation of the scope of such activities is not available, although they are reported to be important. However, there seems to be a consensus among private sector producers that such relations are likely to be transitory. All producers seem to be looking forward to establishing direct links with larger markets in the EU and the United States. It was reported that using fabrics from the Far East was less costly and that some of the outward processing transactions (OPTs) with the EU were effected using fabric originating in the Far East. Such fabric was imported to Egypt via EU countries where a 6% tariff was paid so that the fabric would comply with the rules of origin and the finished garments (men's suits) from Egypt could enjoy the tariff exemption (14%). The magnitude of this specific type of OPT is not documented, although the value of such transactions in general has been reported to be small compared with that achieved by regional competitors (Tunisia, Morocco, Central and Eastern European Countries) as shown in table 13. Furthermore, the prospects for the Israeli garments industry are perceived to be limited and short-lived due to labour constraints.

Finally, it appears that, from the producers' perspective, joining Israel in any preferential trade arrangement is less attractive and less beneficial than joining the EU partnership or having free access to American markets within GATT/WTO after the Agreement on Textiles and Clothing is fully implemented or in the advent that a free-trade agreement with the United States is established. Such regional arrangements would not be mutually exclusive, of course.

Israel is only considered as a catalyst in marketing and providing connections with Western countries. With regard to the source of raw materials (fabric), the Far East is seen as a better alternative in terms of quality and price. Designs and technology from European and American sources are preferred, as Israel is not considered to have developed its own independent designs and technology. The possibility of trade diversion suggests that Egypt may be well advised not to enter into a preferential arrangement with Israel. Such arrangements would be more rewarding with the EU or the United States in terms of market size and in terms of prospects for foreign investments and technology transfer.

V. THE PROSPECTS OF THE EGYPTIAN TEXTILES INDUSTRY

Egypt's export performance depends on its improving its competitiveness *vis-à-vis* other producers, in particular competitors in the Middle East and Eastern Europe. Improving the rate of capacity utilization and fostering productivity growth are necessary. Enlarging supply capacity and attracting new investments to textile and clothing activities

are also necessary. However, in order to do these things, Egypt will have to take measures to increase technical efficiency, improve the investment climate and reduce transactions costs.

TABLE 13. EXPORTS TO THE EU UNDER OUTWARD PROCESSING ARRANGEMENTS, 1994
(Thousands of US$)

Country	Clothing
Jordan	17
Lebanon	0
Syrian Arab Republic	0
Tunisia	224,010
United Arab Emirates	2,242
Morocco	169,732
Israel	42
Egypt	527
Central and Eastern European Countries	2,409,770
MENA	396,747

Source: John Page and John Underwood, "Growth, the Maghreb and free trade with the European Union" in *Regional Partners in Global Markets: Limits and Possibilities of the Euro-Med Agreements*, ed. Ahmed Galal and Bernard Hoekman (CEPR and ECES, 1997), p. 113.

On the import side, the removal of tariffs on intermediate inputs and machinery from various sources is likely to reduce the costs of production, but the gradual removal of tariffs on textile and clothing imports will subject highly protected domestic production activities to increased competition. The important questions are:

Will Egypt be able to compete with respect to quality and price under conditions of global liberalization or alternatively with preferential regional arrangements? Will Egypt be able to upgrade its infrastructure and reduce transaction costs during the transition period?

A. SPINNING

In the area of cotton spinning, it appears that although value added at international prices has turned to be positive in all but one of the public sector companies considered, the activity is still economically disadvantageous owing to high prices of cotton varieties with respect to yarn produced. Two alternatives can be envisaged:

- *Substitution of inexpensive short-staple cottons for Egyptian varieties in spinning appropriate counts of yarn (count 40 and lower).* Imports of short-staple cotton have recently been permitted. They currently account for 15% to 20% of total consumption by spinning mills. However, their use is restricted to spinning mills outside the Delta region. Furthermore, exports of

yarn made of imported cotton are prohibited because of the belief that such exports might damage the present yarn market. The argument is that foreign buyers are mainly attracted by the renowned Egyptian cotton used in the production of yarn rather than by the yarn itself. This is a myth: the quality and specifications of the yarn produced are more important in attracting buyers than the raw material used as an input for producing this yarn. However, owing to the relative weakness of imported fibres, the waste rate in spinning is unusually high; in this case there is no marked decrease in the costs of production and therefore no increased competitiveness of domestic spinning.

Specializing in spinning fine yarns out of Egyptian long-staple varieties. This is the niche that Egypt has traditionally chosen. However, achieving success as an exporter in this area would require a level of perfection and accuracy that Egypt is not likely to attain within the medium term. In addition, stiff competition from Asian and European spinners would hinder market access of Egyptian yarns to external markets particularly in the EU and the United States.

The progress already achieved in producing blends of cotton and synthetic fibres, particularly in the private sector, illustrates the potential competitive edge which Egypt could enjoy given its domestic production of medium-long staple cotton (Giza 80) and of the hydrocarbon feed-stocks necessary to produce polyesters and other synthetics.

The regional market, in particular in the Gulf area and Saudi Arabia, could also benefit substantially from Egyptian production of blends designed especially for wear in hot climates.[13]

Large investments in upgrading and modernizing spinning mills and in enlarging spinning mill capacity were made in the 1980s. There is currently evidence of overcapacity in spinning.

Technical assistance from the EU, within the proposed partnership agreement (for example, from Italian spinners) may be necessary to enhance quality of yarn production, reduce the waste rate in using cotton inputs, and utilize efficiently the prevailing overcapacity. Immediate liberalization of cotton imports to allow spinners to purchase lint cotton from the cheapest sources is essential if these capacities are to be fully utilized and is also a precondition for the liberalization of trade in yarns.

The removal of quantitative restrictions on yarn imports has achieved partial liberalization of these imports, which are still subject to a 30% tariff plus a surcharge. These tariffs could be immediately eliminated–or at least gradually reduced to 20% and then to 10%, until they were completely eliminated within two years. This would put

[13] UNIDO, Industrial Branch Profiles.

pressure on the domestic spinning industry, particularly in the public sector, to increase its efficiency.

B. WEAVING

The production of fabrics in Egypt appears to be profitable at international prices. Egypt's exports of fabrics are mostly raw fabrics (grey), and Egypt is well placed to serve the regional and the European markets, considering its low labour and transport costs. However, its ability to provide external markets with fabric has been hampered by the low quality of the weaving and finishing processes. The proposed partnership with the EU may enhance the quality of these processes more effectively than could be accomplished through Israeli cooperation, by the provision of up-to-date patterns, dyes and finishing requirements. Another potential benefit deriving from this partnership would be the establishment of regular and direct marketing channels with European clothing manufacturers. However, this would be a function of the effort exerted to deliver on time the quantities and quality needed.

Domestically, Egyptian fabrics are too expensive, which has been shown to be an essential reason for the inefficiency of clothing manufacturing in the public sector. It further explains the reluctance of private sector manufacturers to use domestically produced fabric in garment production. However, rules of origin will compel garment producers to use domestically produced fabrics or fabrics originating in partner countries if they are to export garments under preferential arrangements with the EU or the United States.

This raises further the question of enhancing efficiency in weaving, which would require using low-cost yarns to produce the prevailing quality of fabrics or using expensive yarns to weave special-quality fabrics. A successful example of the first approach involves some private sector producers having succeeded in producing and exporting good-quality textiles for upholstery. The second approach has not been tested and would require additional efforts, in particular in the area of finishing. Lack of adequate supervision and negligence from the part of workers could also be partly blamed for inadequate finishing. These observations imply that the weaving process is not yet ready for liberalization, whether under GATT or regional preferential arrangements.

The rules of origin on the one hand and the great potential for increased garment production on the other hand will require enlarging the loom capacity of the weaving process. This will take some time; furthermore, cumulative rules of origin may favour imports from other countries in the region–more specifically Israel–having free-trade agreements with the EU and/or the United States.

The prices of fabrics woven in the EU, the United States or Israel are relatively higher than in other places, in particular South and East Asia and the Middle East. Liberalizing trade with any of them faster than with other countries within the Uruguay Round agreements will not necessarily divert trade to these sources unless the import prices from the EU, the United States or Israel, including preferential or no-tariff prices,

are lower than the import prices from other sources, including MFN tariffs for the same products. Neither will it necessarily create trade with Egypt, as the higher prices and quality (in particular of EU products) may not fit in with the requirements of the Egyptian garment industry. However, these fabrics will cater to the needs of more affluent Egyptians and may provide inputs to potential manufacturing of brand-name items under international labels, which would be encouraged by such preferential regional arrangements.

C. READY-MADE GARMENTS

Although garment-making is highly disadvantageous in the public sector, it seems to be quite profitable in the private sector, as witnessed by the large increase in output and exports achieved during the 1990s. This mixed performance is partly explained by the fact that public sector companies rely primarily on expensive domestic cotton fabrics, while the more flexible private sector has reduced its costs by using imported fabrics. In addition, private sector producers have increasingly succeeded in modernizing garment-making by improving designs, production techniques and accessories used (buttons, zippers). Although the local market is nominally sheltered from foreign competition by bans on clothing imports, smuggling through free zones has partially exposed domestic production to foreign competition. Tariffs on clothing items are as high as 70%, immediate removal of these tariffs would threaten this industry, particularly if they have to use relatively expensive fabrics woven domestically. Thus their liberalization should lag behind that of fabrics to allow this industry to adapt to the changing external conditions.

The prospects for growth in this area are promising in terms of production and exports. Opportunities for foreign and local private investment are available in Egypt's free zones as well as in new industrial areas (for example, Tenth of Ramadan, Sixth of October), where availability of modern industrial infrastructure, tax holidays, preferential customs duties, and access to technical vocational training for workers provide attractive incentives to producers. Foreign producers are already taking advantage of free-zone opportunities in El-Ameriya and are exporting clothing and fashion sportswear to France, Germany, the United Kingdom and even the United States.

The growing private sector activity in this domain encompasses the production of diverse manufactured products such as suits, trousers, T-shirts, knitwear, underwear and men's, women's and children's clothing, as well as carpets and curtains, in addition to various yarns, fabrics and accessories. It also includes the dyeing and finishing of cloth. Regional cooperation would enhance such activities to the extent it provided improved access to the best international fashion design and to new production techniques, accessories, patterns, dyes and finishes as well as to marketing and advertising services. Such developments would greatly improve the competitiveness of Egyptian-made products, both domestically and abroad. Moreover, regional cooperation may create niches among more affluent Egyptians and abroad for designer and brand-name items produced under licence in Egypt and marketed under international labels. The suitable course of action in this case would be to create distinct and differentiated Egyptian products which would have their own distinct market.

Public sector garment manufacturing will continue to cater to the needs of middle- and lower-income groups, although the liberalization of trade within GATT is likely to threaten its domestic monopoly by opening access to less expensive products from Central and Eastern European Countries, Turkey, and East and South Asia. However, as Egyptian labour costs are already among the lowest in the world, better improved productivity through improved supervision and better control over waste, as well as better quality control, will be necessary to enhance competitiveness. Reducing the cost of raw materials used by upgrading the weaving process as mentioned above would also increase the competitiveness of the public sector.

D. OTHER AREAS WHERE CHANGES ARE NEEDED

Changes of a more general nature have to be implemented to enable the textiles and garment sector to meet the challenges posed by Egypt's opening up to external markets. Some relate specifically to the structure of the textiles industry (and more particularly to that of the public textiles sector), while others involve reforms and restructuring of a more general nature.

1. *Changes in the structure of the public textile sector*

Over the period 1986/87 to 1991/92, in an effort to regain international competitiveness in textiles, the Government launched a number of reforms. They included measures to increase cotton yields and production, to free cotton trade and ease regulations on textile exports, to invest in new plants and to increase the profitability of State-owned factories. The use of synthetic fibres, in particular polyesters, to make modern blends is being encouraged by the Government.

Public investment directed to modernizing and upgrading this industry was heavily concentrated in spinning, leading to overcapacity in this activity and to imbalances between the various stages of production.[14] In addition, the world recession in textile markets, together with inflexibility in production and pricing decisions led to the accumulation of inventories (mostly of yarns of count 30 Ne) in many companies and hampered Egypt's competitiveness in the international market. This overstock is gradually being used up in the weaving process. Unfortunately, however, the fabric thus produced is considered overpriced by the local private garment industry, and this means that public sector garment manufacturing is compelled to use these fabrics, even though it incurs a loss in the process.

The excessive integration of the spinning and weaving processes and in many cases of the garment-manufacturing process in public sector companies reduces the ability to respond in a flexible way to rapidly changing market conditions. Decentralization of

[14] Chemonics International, "Assessment of potential for liberalization and privatization of the Egypt cotton textile subsector", study submitted to the Textile Industries Holding Company, Egypt and to USAID/Cairo, July 1993.

various production units and processes within each public sector company is warranted and requires the dismantling of these huge entities into smaller independent production units to avoid the accumulation of problems and the transfer of problems to various units within the same company.

The disintegration of these large textile mills is also important for their effective privatization.

Another acute problem within this sector relates to the overstaffing of public textile companies, which means that they cannot be modernized without creating social and economic disruption.

2. *Improving services and enhancing competitivity*

Egypt will need to modernize its economy, update its economic infrastructure, promote private investment and create jobs. More particularly, it must update and restructure industries, improve non-traded services, and adopt the basic rules of competition, in particular those dealing with competition-distorting State intervention. Egypt must take these measures if it is to gain and sustain access to external markets for textiles. These measures would considerably reduce transaction costs and improve the incentives system by raising the effective rates of protection to various activities.[15]

Transaction costs have been reported to be unusually high in Egypt. For example, it has been reported that it takes two to three times longer and may cost twice as much to land and process a container through an Egyptian port than through other ports in the Mediterranean region. A survey referred to by UNIDO indicates that, in knitwear, Egyptian manufacturers generally require a lead time of 2 to 5 months compared with only 15 to 25 days for firms from Brazil. These costs and delays impair the competitiveness of exports of textiles and garments and mean that important export orders are lost.

Removal of these obstacles would significantly improve the investment climate and would stimulate both domestic and foreign direct investment not only in textile activities but in all production activities. Furthermore, costs would be reduced and global competitivity with all trade partners in the world would be improved.

VI. CONCLUDING REMARKS

The main conclusion to be drawn from the present analysis is that Egyptian textile and clothing manufacturing and exports are constrained more by domestic factors than by external conditions.

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[15] See B. Hoekman and S. Djankov, "Egypt-EU trade agreements: issues and policy options" (ECA/MNA Technical Department, the World Bank, March 1995), p. 8. See also Chang PoYang, "Maximizing the benefits from free trade with the European Union", World Bank Resident Mission in Egypt, April 1996.

Egypt appears to have good export prospects in a wide array of products ranging from cotton yarn and fabric to ready-made garments and other made-up textiles. Furthermore, these prospects seem to be higher in EU markets than elsewhere.

Israeli participation has not significantly stimulated trade relations between Egypt and Israel, but it has–according to producers in the Egyptian private sector–enhanced access to external markets, particularly in the United States and in some EU countries. Nevertheless, it has not greatly affected production efficiency.

The Egyptian textile industry has traditionally been sheltered by ascending (and high) tariff and non-tariff barriers, which have allowed inefficiencies to develop at various stages of production in both the public and private sectors. Although the assessment of efficiency in this industry has been based on public sector data, and although there are indicators that the performance of the private sector has been better than that of the public sector, particularly in exports, high levels of protection have perpetuated these inefficiencies in all areas of the economy. Firms have not faced sufficient pressure to force them to increase their cost effectiveness.

Because of the increased trade liberalization resulting from the implementation of Uruguay Round agreements, the imminence of the establishment of a free-trade area with the EU, and the possibility of establishing a free-trade area agreement with Canada and the United States, textile and clothing manufacturing in Egypt will enjoy increased access to external markets. In return, however, it will have to face the challenge of removing quantitative restrictions on imports of fabrics and clothing and of reducing tariffs. This will require reform and restructuring within the industry as well as in the overall economic system. The main focus should be on increasing the value added of these activities by changing the product mix towards products with higher unit value. This has always been the case in South and East Asian countries, which shifted increasingly to the manufacture of higher unit value products to compensate for the quota restrictions on their exports to EU and American markets. A complementary line of action would be to reduce unit cost by improving supervision, labour standards, control over waste, and quality control.

Reductions in unit cost would allow producers to face the threat of increased domestic competition from textiles and fabrics resulting from trade liberalization, although this threat is not likely to materialize on a large scale. Unit cost reduction would further enhance Egypt's export competitiveness in external markets.

Specific reforms to be implemented in various stages of textile manufacturing include the following.

In the area of spinning, both input and output mixes have to be revised. Firms have to be allowed the freedom to choose the least-cost input mix, using imported cottons for spinning yarns of count 40 and lower and Egyptian varieties for higher-count yarns. To reduce cost further by reducing the cotton waste rate and the rate of defective output, technical assistance from EU spinners should be seriously considered. The development of blends of cotton and synthetic fibres is also an area to be investigated.

In weaving, increasing the value added by improving the dyeing, printing and finishing processes is essential. Improving quality and reducing cost is also essential, as the rules of origin will not allow preferential access for exports of clothing and other made-up textiles to the EU or the United States unless they are made of domestically produced fabric. Obtaining access to patterns, improved dyes, and know-how, either through technical assistance or through joint production or subcontracting with foreign partners, particularly from the EU, would greatly benefit this activity. Increasing capacity in weaving would also be necessary. This is only feasible in the medium term, however, and may warrant extending tariff protection to this activity beyond that given to spinning. However, it should be clear to weavers that this protection is only temporary and will be phased out over a limited time horizon.

Garment-making appears to be highly disadvantageous in the public sector, but it is quite profitable in the private sector, as witnessed by the large increase in output and exports. The more flexible private sector has reduced its costs by using low-priced imported fabrics, and has further succeeded in modernizing garment-making from knitted and other fabrics by improving designs, production techniques and accessories used. Prospects in this domain are highly promising but are constrained by the availability of low-price domestically produced fabrics. This further emphasizes the necessity of upgrading and enlarging the weaving process.

Restructuring Egypt's public sector companies is also a necessity. Dismantling these large public entities into smaller decision-making units is important for increasing their efficiency and reducing the problems associated with dis-economies of scale. This would increase the flexibility of these companies, as well as their capacity to respond to a changing internal and external environment.

These lines of action, together with more general reforms aimed at modernizing the economy, updating the economic infrastructure, promoting private investment, reducing administrative barriers and enhancing competition, will reduce transaction costs and boost industrial activities. Transparency with regard to the economic policies to be followed in liberalizing the economy is essential. Producers in both the public and private sectors should be given clear signals about the direction of economic policy.

The question should not be whether or not to liberalize or whether or not to integrate into the world economy or, transitionally, within the Middle East or with the Mediterranean region and at what pace. It is, rather, what ought to be done to help restructure and upgrade Egyptian industries, to increase their competitivity and allow them to face the challenge of increased globalization and regionalization of the world economy.

THE IMPACT OF THE PEACE PROCESS ON THE TEXTILES AND GARMENT INDUSTRY IN PALESTINE*

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I. OVERVIEW

The textiles and garment industry has been of great importance to the Palestinian economy since the turn of the century. According to the 1928 Government Census of Industries, there were 357 textile workshops and 813 clothing workshops in Palestine in 1927, representing 10.2% and 23.2% respectively of total industrial establishments in that year. Most of these establishments were small, cottage-type workshops, with an average of 4.2 employees per establishment in the textile industry and 3 employees per establishment in the clothing industry.[1]

The role of the textiles and garment industry in the Palestinian economy continued to remain important over the decades. In 1942, for example, the textiles and garment industry represented 22% of the total number of industrial establishments, ranking first in the manufacturing sector. In 1960, this industry represented 66% of the industrial establishments in Gaza Strip; in 1966, it represented 13% in the West Bank.[2]

The Israeli occupation of the West Bank and Gaza Strip in 1967 did not significantly change the picture. The textiles and garment industry continued to remain one of the most important industries in the Palestinian economy, representing around 20%-22% of the total number of industrial establishments in the West Bank and 33%-37% in the Gaza Strip during the period 1967-1987, employing around 25% and 43% of total industrial employment in the West Bank and Gaza Strip respectively during that same time period.[3] As these numbers show, the textiles and clothing industry have represented more than one fourth the number of industrial establishments and almost one third of industrial employment in Palestine, despite the Israeli occupation of the West Bank and Gaza Strip. However, there has been a gradual transformation within the industry itself, moving away

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1 Said Hamadeh, *Al Nizam al-Iqtisaadi fi Filistin* (The economic system in Palestine) (Beirut: American University of Beirut, 1939), p. 294.

2 Sami Iftaimeh, *Al Qitaa' al-Sinaa'I fi-Diffat al-Gharbiyya wa Qitaa' Ghazza: Diraasa Tahliliyya li-fatra 1968-1989* (The industrial sector of the West Bank and Gaza Strip: an analytical study for the period 1968-1989) (Amman: Dar al-Karmel, 1993), pp. 40-44.

3 Ibid., pp. 46-50.

from manufacturing and direct distribution to final customers, to subcontracting to Israeli and foreign firms.

In September 1993, the Declaration of Principles between Israel and the Palestine Liberation Organization (PLO) was signed in Washington, D.C., marking a new era for the Middle East region. For the Palestinian economy, the transition was characterized by problems, challenges and opportunities. Political uncertainty and economic instability have been the main obstacles confronting Palestinian economic development and retarding investment in the industrial sector, particularly in the textiles and garment industry. One challenge for this industry is represented by the new competition from Jordanian firms, which have entered the Palestinian and Israeli markets forcefully. The building of the necessary infrastructure in the occupied territories was a response aimed at facing this competition in an effective fashion. Finally, the opportunity that peace could bring to industry, including the garment industry, is represented by the new markets that would be open to Palestinian products.

This paper analyses the current status of the garment industry and will investigate the potential impact the peace process could have on it. Secondary data published by the Palestinian Central Bureau of Statistics (PCBS) and the Central Bureau of Statistics (CBS) of Israel were used, among other sources. However, since these data are not sufficient in terms of allowing sound conclusions to be drawn, they were supplemented by unpublished data provided by PCBS on the textiles and garment industry that showed more detail on individual groups within the establishments. Furthermore, a questionnaire was designed to collect further data, in particular data concerning the perceptions of managers on the impact of peace and the problems facing the industry. This questionnaire was used to collect data from a sample of 70 establishments in the West Bank (10 establishments in each governorate)[4] and 20 establishments in the Gaza Strip. Furthermore, industry leaders and government officials from the ministries of Industry, Economy and Trade, Finance, Planning and International Cooperation were interviewed.

The next section of this paper reviews the current situation and the structure of the textiles and garment industry. Section III assesses the performance of the industry and evaluates its productivity and competitiveness, both in the local and foreign markets. Section IV discusses the industry relations between the West Bank and Gaza Strip on the one hand and Israel and the rest of the world on the other hand. The perceptions of Palestinian managers within the garment industry concerning the impact of the peace process and the alternative strategies available to them is analysed in section V. The final section of this study, section VI, offers a summary and conclusions.

II. PRESENT SITUATION

As table 1 shows, in 1994 there were 1,842 textile and garment (wearing apparel) establishments in the West Bank and Gaza Strip, representing more than 18% of the total

[4] Jericho was not included in the calculations because of the smaller size of the sector in this governorate.

industrial establishments there, second only to the metal products industry. On the other hand, the textiles and garment industry employs around 13,600 workers, representing almost 28% of the total industrial workforce, making it the largest employer in the manufacturing sector. As table 1 also shows, the textiles and garment industry contributes around 22% of the industrial value added, second only to the non-metallic products industry; it also contributes more than 15% of the industrial gross output, the third largest, after non-metallic products and the food and beverage industries. These figures confirm the fact that the textiles and garment industry is still one of the most, if not the most important, industry in the Palestinian economy in terms of employment, output and number of establishments.

A. STRUCTURE OF THE INDUSTRY

Although textiles and garments are closely related, often being grouped as one industry, they are different in many aspects, and this means that they are classified under two industries: the garment (wearing apparel) industry, which is included under International Standard Industrial Classification (ISIC) 18, and the textile industry, which is listed under ISIC 17. This latter industry is, in turn, divided into subsectors which include factories and workshops engaged in the spinning, weaving, knitting and finishing of textiles. It also includes made-up textile articles, carpets and rugs, knitted articles, and other textiles. Table 2 gives a brief description and summarized data on the subsectors of the garment and textile industries. As this table shows, the textiles industry consists of 309 establishments employing 1,338 workers (according to figures from the PCBS 1994 *Industrial Survey*), with manufacturing of made-up textile articles representing two-thirds of the number of establishments and around half of the number of workers. In contrast, the garment industry consists of 1,533 establishments, employing more than 12,000 workers.

This study includes both the textile and garment sectors, which will be treated as one industry; the focus, however, will be on garments, simply because this sector is very important to the Palestinian economy and has a greater potential for expansion as well as greater competitiveness in the post-peace process era. However, when data are available and comparison is of any significance, both the textile and garment sectors will be examined.

In keeping with this statement, table 3 represents a comparison of the two industries by size distribution. The textiles and garment industry, in general, consists of a large number of small workshops. The average number of employees per establishment is 4.3 workers in the textiles industry and 8 workers in the garment industry. As table 3 also shows, more than 80% of the establishments in the textile industry and 50% in the garment industry employ fewer than 5 workers, while 93% of the establishments in the textile industry and 77% in the garment industry employ fewer than 10 workers per establishment. Within these two industries, it is only the garment industry (four establishments) that employs 100 or more employees. Furthermore, around 22% of the workers in the garment industry and 40% of the workers in the textiles industry are owners and family members. More than 70% of the textile and garment firms are sole

proprietorships and most of the remaining firms are personal joint ventures. All these figures reflect the craft- and family-type business that dominates the industry. In fact, most of these workshops are run by the owners and/or their spouses, children, and brothers and sisters.

Most of the firms in the garment industry are subcontractors to Israeli firms. Some sources estimate that 80%-90% of the garment workshops in the West Bank and Gaza Strip operate as subcontractors.[5] This high ratio has been a result of political realities in the area. After the Israeli occupation of the West Bank and Gaza Strip in 1967, Jordan and other Arab markets were virtually closed off to Palestinian exporters, and subcontracting was an avenue for gaining access to the Israeli market and to Israeli technology. Many subcontractors started as independent producers for the local market and formerly covered all stages of production, including selection of material, design, sewing, finishing, packaging and marketing. Some of these producers studied fashion design or had run their own businesses elsewhere before returning to the West Bank and Gaza Strip, and some inherited the business from their parents. During the intifadah (1987-1992), there was reduced demand in the local market, and many of these producers therefore turned to subcontracting for Israeli firms. However, other subcontractors started as workers in Israel or in local factories while still others began as tailors, salesmen, dry-cleaners, or even as pharmacists. They were attracted by the high returns in this business, the relatively small amount of investment and working capital needed to start up a garment workshop, and the unsophisticated skills and experience required. Most subcontractors carry out only the sewing, but others carry out more than one stage of production. As table 4 shows, more than half of the firms which responded to the relevant question in the sample carry out sewing only. In many cases, an Israeli contractor provides the Palestinian subcontractors with the design and the raw materials to do the cutting and sewing. However, there are cases–but only a few–of large subcontractors who do all stages except the design and marketing. In other cases, the design is provided by foreign customers (in the United States or Europe), and the local company does the rest, including preparing the pattern, cutting the fabric, sewing the garment and ironing and packaging; the Israeli agent, in this case, arranges for some of the logistics, such as opening letters of credit and making transportation and shipping arrangements for the final products. Subcontracting will be discussed in more detail in the section of this paper on industry relations.

On the other hand, there are many small independent Palestinian factories, which produce various garment products for the local market. They cover all production stages from selection of raw materials to design, cutting, sewing, trimming, packaging and marketing. Some of these producers subcontract sewing out to smaller workshops in the area. Many of the independent garment producers surveyed–in particular in the Hebron

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[5] Textile and Garment Association (in the West Bank) and Development Resource Center (DRC) (in the Gaza Strip).

TABLE 1. THE IMPORTANCE OF TEXTILE AND GARMENT INDUSTRIES, 1994*

ISIC	Industry	Establishment		Employees		Gross output		Value added	
		Number	Percent	Number	Percent	(thousands of US$)	Percent	(thousands of US$)	Percent
15	Food and beverage	1593	15.73	7972	16.25	198087	19.52	87540	20.70
16	Tobacco products	8	0.08	203	0.41	44507	4.39	38687	9.15
17	**Textiles**	**309**	**3.05**	**1338**	**2.73**	**26331**	**2.59**	**9099**	**2.15**
18	**Wearing apparel**	**1533**	**15.14**	**12269**	**25.01**	**107186**	**10.56**	**65562**	**15.51**
19	Leather, bags and footwear	576	5.69	3116	6.35	40203	3.96	17884	4.23
20	Wood and wood products	684	6.75	1860	3.79	26847	2.65	12520	2.96
21	Paper and paper products	33	0.33	589	1.20	24092	2.37	7905	1.87
22	Publishing and printing	115	1.14	628	1.28	12415	1.22	5252	1.24
24	Chemicals and chemical products	109	1.08	1665	3.39	70350	6.93	366-	0.09-
25	Rubber and plastics	111	1.10	851	1.74	42139	4.15	20097	4.75
26	Non-metallic products	1323	13.06	8735	17.81	249816	24.62	86403	20.44
27	Basic metals	13	0.13	67	0.14	688	0.07	356	0.08
28	Metal products	2120	20.93	4966	10.12	78436	7.73	35035	8.29
29	Machinery and equipment	165	1.63	528	1.08	8824	0.87	4305	1.02
31&32	Electrical machinery and equipment	71	0.70	225	0.46	2938	0.29	1115	0.26
33	Medical and optical equipment	65	0.64	159	0.32	879	0.09	335	0.08
34	Motor vehicles and trailers	16	0.16	119	0.24	3176	0.31	1449	0.34
35	Other transport equipment	10	0.10	55	0.11	347	0.03	176	0.04
36	Furniture	1251	12.35	3586	7.31	65156	6.42	26540	6.28
37	Recycling	23	0.23	116	0.24	12290	1.21	2914	0.69
D	Total manufacturing	10128	100.00	49047	100.00	1014707	100.00	422808	100.00

Source: Palestinian Central Bureau of Statistics, *Industrial Survey, 1994: Main Results, Reports Nos. 1 and 2* (Ramallah, 1996).
* Including East Jerusalem.

TABLE 2. MAIN ECONOMIC INDICATORS OF TEXTILE AND GARMENT INDUSTRIES, 1994*

ISIC	Economic activity	Number of establishments	Number of employees	Gross output (thousands of US$)	Value added (thousands of US$)
17	Manufacture of textiles	309	1338	26331	9099
1711	Spinning of textile fibres	32	353	14592	4945
1712	Finishing of textiles	12	47	251	123
1721	Made-up textile articles	210	599	6668	2669
1722	Carpets and rugs	7	44	702	248
1729	Other textiles n.e.c.	13	54	1052	367
1730	Manufacture of knitted articles	35	241	3066	747
18	Manufacture of wearing apparel	1533	12269	107186	65562
1810	Wearing apparel	1533	12269	107186	65562

Source: Palestinian Central Bureau of Statistics, *Industrial Survey, 1994: Main Results, Reports Nos. 1 and 2* (Ramallah, 1996).

* Including East Jerusalem.

TABLE 3. SIZE DISTRIBUTION OF TEXTILE AND GARMENT INDUSTRIES

	Textiles		Garments		Manufacturing	
Average number of workers per establishment	4.3		8		4.8	
Firms employing:	Number	Percentage	Number	Percentage	Number	Percentage
1-4 workers	382	81	852	50	8392	73
5-9 workers	59	12	456	27	2050	18
10-19 workers	22	5	280	17	802	7
20-49 workers	10	2	83	5	252	2
50-99 workers	1	0	12	1	34	0
100+ workers	0	0	4	0	14	0

Source: Palestinian Central Bureau of Statistics, *Establishment Census: 1994, Final Results* (Ramallah, 1995).

and Bethlehem districts–claim they started their businesses as subcontractors, but that owing to political restrictions and closures, they could not obtain orders from Israeli contractors or deliver products to them. Therefore, they opted to produce for the local market. In general, these are small producers.

The foregoing indicates that entry into, and exit from, this business (garments in particular, and subcontracting in general) has been very easy, as many families own four or five sewing machines that are operated by family members, and since the families experience no legal barriers, and there are no significant economies of scale and no huge capital requirements. This structure is close to the classic case of perfect competition, where each firm is a price taker, and the products of firms in the industry are standardized. As will be discussed below, this is one of the main obstacles to developing the industry in the post-peace process era.

Most of the garment industry is concentrated in Gaza Strip and the northern governorates of the West Bank (Nablus, Tulkarm, Jenin and Qalqelia). In fact, 42% of the establishments and employment of the garment industry is located in the Gaza Strip, with a similar percentage for the northern governorates. Most of the workshops are in the border cities of Tulkarm, Jenin and Qalqelia; subcontractors in these locales benefit from their proximity to Israeli factories, which results in savings in transportation costs, and which in addition facilitates communications and deliveries of raw materials and products.

The garment industry is labour-intensive. As table 5 shows, the capital-to-labour ratio is $1,773 in the garment industry compared with $7,672 in the textile industry. The manufacturing sector in general has an average of $5,577 of capital per worker. In fact, the capital-to-labour ratio in the garment industry is one of the lowest in the manufacturing sector. This low figure reflects the small amount of investment in subcontracting, which represents the major production activity in this sector.

Table 6, analyses the components of the textile and garment output. As the table shows, the ratio of value added to gross output is 60% in the garment industry. This is a relatively high ratio, compared with around 35% in the textile industry and an average of 38.5% of the manufacturing sector as a whole. The ratio of value added to gross output is usually taken as a measure of vertical integration, but it can be misleading in the case of the garment industry in Palestine, which involves minimum integration because of the widespread subcontracting arrangements in the industry. It only reflects the large amount of labour content in the value of final products.

As this table also shows, raw materials represent more than 50% of the value of gross output in the textile industry and close to 30% in the garment industry. This is reflected in the gross value added, which is much higher in the garment industry than in the textile industry. Furthermore, the table shows that around one third of the value added in the textile industry and almost one half of the value added in the garment industry goes to workers as wages (compensation to employees).

These figures reflect the labour-intensive technology used in the industry, which is also confirmed by the low share of depreciation (around 4%) in the garment industry, compared with the higher depreciation ratio of 14% for the textile industry and 10% for manufacturing in general. These facts expose another problem that jeopardizes the garment sector's ability to compete in foreign markets, especially the United States. The free trade area agreement signed between the Palestinian Authority and the United States Government allows Palestinian products to enter the American market without customs duties, which is not applicable to products from other countries such as those in the Far East and South-East Asia (as well as Egypt and Jordan). If labour content represents a large proportion of the value added, while at the same time the price of raw materials (fabric) is competitive in the world market, Palestinian products will not be able to compete with products from countries where labour is cheap, since the savings in labour costs (which are great if labour content is large) will outweigh the additional custom duties that these countries have to pay and from which the Palestinian products are exempt[6].

Finally, the operating surplus represents around 46% for both the textiles industry and the garment industry. This item includes the opportunity costs of the unpaid workers and the income of the owners of the business. In fact, the opportunity costs of these unpaid workers are estimated on the basis of paid workers, and that amount is subtracted from the operating surplus; the result would be an approximation of the owners' gross income.[7]

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[6] To explain this point with an example, let it be assumed that raw materials cost $10 per unit and that labour costs $10 for Palestine and $1 for Country B (such that labour costs in that country are 10% of that in Palestine). Assume that customs duties on garments and textiles in the United States are 40% and, for the sake of simplicity, that freight, insurance and other costs are zero. In this case, cost per unit is:

	Palestine	***Country B***
Raw materials	$10.00	$10.00
Labour costs	10.00	1.00
Customs duties	0.00	4.40
Total cost per unit	$ 20.00	$ 15.40

It costs less for Country B to export to the United States even though it pays 40% customs duties because labour represents a large proportion (50%) of total costs for Palestine. However, if labour costs represent a small proportion of total costs, say 10%, then the costs will be:

	Palestine	***Country B***
Raw materials	$10.00	$10.00
Labour costs	1.00	0.10
Customs duties	0.00	4.00
Total cost per unit	$ 11.00	$ 14.10

This means that Palestinian ability to compete with cheap-labour countries will be greater as long as labour costs represent a small proportion of total costs.

[7] According to the PCBS *Industrial Survey, 1994*, the total compensations of employees were $2.8 million for the textiles industry and $27.8 million for the garments industry. If the opportunity costs for the unpaid workers were included, this compensation would amount to $4.6 million and $34.7 million respectively. This would reduce the operating surplus to $2.4 million for the textiles industry and $19.9 million for the garment industry, representing 10.3% and 38.8% of sales revenue in the two industries respectively, which roughly amounts to the average gross margins in these industries. If net "payments and transfers" such as interest, insurance premiums, royalties, etc., are also included, the above ratios will drop to around 2.7% and 18.7% in the textiles industry and garment industry respectively, which are rough approximations of the net income of owners. However, these numbers are very rough estimates since much of the net payments and transfers goes to owners as withdrawals and dividends, which implies that actual net income tends to be higher than these figures.

B. LABOUR

As explained above, labour costs represent a significant proportion of total production costs in the garment industry. The Palestinian garment industry depends largely on skilled labour, yet there is a shortage of skilled workers in the West Bank and Gaza Strip as most of such workers work for Israeli factories, which pay higher wages. Typically, Palestinian workers in the textiles and garment industry start out as unskilled labourers in local or Israeli factories where they gain skills and experience. Generally speaking, there are no training programmes in the local factories, although some factories provide short training courses for their workers at the factory, to train them on new machines. Some workers take short training courses from the manufacturers of the machines or their agents, to learn how to operate the machines.

As mentioned above, skilled workers are generally paid higher wages by Israeli firms or by firms owned by Israeli Arabs, especially those who have moved to Palestinian border areas such as Tulkarm, Jenin and Qalqelia. This increasing demand for skilled workers has pushed up wages, thus increasing the costs and decreasing the competitiveness of the Palestinian producers. The wage rate ranges from 2,000-3,000 Israeli new shekels (NIS) for skilled workers to NIS 1,000-1,500 for semiskilled workers and NIS 700-1,200 for unskilled workers,[8] with wages being higher in border areas, for the reasons mentioned above. On the other hand, the survey shows a huge difference in the wage rates between males and females. In some cases, the wage rates of males amount to almost twice those of females. This wage discrimination is justified by the high turnover rate for females, who usually leave work when they marry, and by the ability of male workers to work longer hours. However, a more realistic but economic explanation is based on differences between the two groups in the elasticity of labour supply owing to the limited opportunities available to female workers to work in Israel or in places that are far from where they live, compared with male workers.

C. RAW MATERIALS

Almost all the raw materials used by Palestinian producers are purchased either from Israel or from the local market. Originally, the raw materials are either produced by one of the large Israeli textile manufacturers (such as Polgat) or imported by them. A very small amount of raw materials is imported by Palestinians, but what is imported is usually through an Israeli agent to avoid the restrictions imposed by the Israeli authorities on such imports.

In many cases, the fabric is purchased in small quantities of 400-500 metres, which means that it is difficult and costly to import them. In these cases, the fabric is purchased locally, especially during border closures, when the Palestinian producers cannot go to the Israeli market to buy their requirements of raw materials. This clearly

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[8] Survey results.

means that the prices of raw materials will be much higher for small firms than for their larger counterparts, thus reducing the small firm's effectiveness, in addition to limiting the selection of raw materials. This same situation applies to accessories and packaging materials (nylon and cardboard).

In the case of subcontracting, the raw materials are usually provided by the Israeli contractors, who buy them from the Israeli manufacturers or wholesalers. In these cases, the subcontractors do not have to worry about the availability, the cost or the selection of the raw materials. Clearly this reduces costs, as well as the need for working capital and the risks associated with closures.

D. MACHINES

Owing to the restrictions and problems in importing machinery to the West Bank and Gaza Strip, most of the machines used in the textile and garment industry are purchased from Israeli firms or from local dealers who buy them from Israeli firms. Very few machines are imported directly (and this is through an Israeli agent). According to the survey, more than 90% of the Palestinian workshops buy their machines from Israeli firms, either directly or through local dealers in the West Bank and Gaza Strip, while only 8% of those workshops imported their machines, through Israeli agents, from Germany, Italy, the United Kingdom or Greece. As table 7 shows, 85% of these machines are bought new, and 94% of them are electrical. Only a few large factories in the occupied territories use more advanced, computerized machines.

The purchasing of machines is usually (85% of the time) financed by owners of the workshops through their personal savings. Loans from banks are not a major source of financing for this kind of investment, which can be attributed to the absence of formal financial institutions at the time that these machines were purchased (during the Israeli occupation). The present situation may have slightly improved as more banks have entered the Palestinian market, but according to many industrialists, the situation is far from satisfactory.

The majority of the machines are maintained by the owners or their workers. Only 15% of the workshops depend on Israeli firms for maintenance of their machines, and this is usually when there is a serious problem or in the case of the computerized (and very expensive) machines that local technicians cannot repair; in such cases, the machines are usually sent to Israel. Around 60% of the respondents to the question stated that they maintain their machines, on a periodic basis, while the remaining do so only when the machines break down.

E. PROBLEMS FACING THE INDUSTRY

As can be seen from the above description, the textiles and garment industry faces many problems and challenges during this period of transition; a number of these are related to the current situation of political uncertainty and economic instability, which may be resolved if–or once–genuine peace is achieved.

TABLE 4. PRODUCTION STAGES CARRIED OUT BY PALESTINIAN GARMENT SUBCONTRACTORS

Stages	Number*	Percentage
Sewing only	27	54
Sewing and finishing/packaging	11	22
Cutting, sewing and packaging	8	16
Design, cutting, sewing and packaging	4	8
Total	50	100

Source: Survey data.

* The number here does not represent the entire sample, but only those workshops that responded to the relevant question.

TABLE 5. IMPORTANT RATIOS FOR THE TEXTILE AND GARMENT INDUSTRIES, 1994*

	Textiles	Garments	Manufacturing
Annual compensation/paid employees (thousands of US$)	3588	2866	3474
Gross output/employee (thousands of US$)	20297	8295	17710
Value added/person engaged (thousands of US$)	7019	4991	6815
Value added/gross output (percentage)	34.6	60.2	38.5
Compensation of employees to value Added (percentage)	31.8	44.7	26.6
Depreciation to gross output (percentage)	4.9	2.5	3.7
Capital to labour (thousands of US$)	7672	1773	5577

Source: Palestinian Central Bureau of Statistics, *The Industrial Survey, 1994: Main Results, Report No. 1* (Ramallah, 1996).

* Including East Jerusalem.

TABLE 6. ANATOMY OF GROSS OUTPUT AND VALUE ADDED IN THE TEXTILE AND GARMENT INDUSTRIES, 1994*

	Textile		Garments		Manufacturing	
	Thousands of US$	Percent	Thousands of US$	Percent	Thousands of US$	Percent
Raw material	13534	52.4	27260	27.1	381922	46.3
Other inputs	1547	6.0	5904	5.9	79317	9.6
Total inputs of goods	15081	58.4	33164	33.0	461239	55.9
Industrial services	1028	4.0	2726	2.7	10332	1.3
Non-industrial services	794	3.0	4137	4.1	35551	4.3
Intermediate consumption	16903	65.4	40027	39.8	507122	61.5
Gross value added	8935	34.6	60461	60.2	317222	38.5
Gross output	25838	100.0	100488	100.0	824344	100.0
Compensation to Employees	2845	31.8	27046	44.7	107124	33.8
Depreciation	1254	14.0	2554	4.2	30639	9.7
Fees and taxes	735	8.2	3235	5.4	20617	6.5
Operation surplus	4101	46.0	27626	45.7	158842	50.0
Gross value added	8935	100.0	60461	100.0	317222	100.0

Source: Palestinian Central Bureau of Statistics, *The Industrial Survey, 1994: Main Results, Report No. 1* (Ramallah, 1996) (ratios calculated by the author).

* Including East Jerusalem.

Undoubtedly, the most serious problem facing the sector is the frequent border and internal closures of the occupied territories. During the last four years, the number of closure days amounted to a total of 342 days in the Gaza Strip and 291 days in the West Bank. In 1996 alone, there were 138 days of closure in the Gaza Strip and 132 days in the West Bank.[9] The impact of these closures on the textile and garment industry has been devastating. In addition to their impact on investment opportunities, they lead to higher risks and, therefore, higher costs of moving goods and raw materials from one place to another, and to fragmentation of the local market, loss of orders from local, Israeli and foreign customers, and shortages of raw materials and/or spare parts for machines; in addition, under such conditions, Israeli technicians refuse to visit Palestinian workshops to repair and maintain their machines. Together with low demand and the invasion of Jordanian and other competitors, these closures have caused many firms to go under or to produce at much less than their full capacity, as will be discussed below.

The survey shows that another main problem facing the industry is the difficulty in obtaining permits to go to Israel (owing to restrictions by the Israeli authorities) to purchase raw materials and accessories, to obtain orders from Israeli contractors, to sell final products directly to wholesalers or retailers, or to collect debts and bad checks from Israeli businessmen.

Another problem, which is also related to the political situation, is represented by the extra costs paid to Israeli middlemen to ensure the arrival of raw materials and the distribution of output. Many Palestinian producers argue that these costs, which are not borne by other competitors, reduce the competitiveness of Palestinian products in foreign markets.

The Palestinian textiles and garment industry suffers from other types of problems as well, which although they are not directly related to the current political situation, are nevertheless the result of the Israeli occupation of the West Bank and Gaza Strip for the last three decades. One of these problems is the inadequate physical infrastructure: roads are far from being satisfactory, airports and seaports do not really exist (for the time being), safe passage between the West Bank and Gaza Strip has not yet been implemented, and although facilities such as electricity, water, telephone and fax are generally available, they are expensive and largely controlled by the Israeli authorities. The rate charged for these inputs increases as higher levels are consumed, which discourages industrial firms from expanding their production. Electrical power failures sometimes cause workshops to close. Telecommunications are inadequate yet expensive. In general, the conditions and costs of making business transactions severely reduce the ability of Palestinian producers to compete in the local and world markets.

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[9] Palestine Economic Policy Research Institute, *MAS Economic Monitor* (Jerusalem), No. 1 (1997), p. 8.

TABLE 7. MACHINERY USED IN THE PALESTINIAN TEXTILES AND GARMENT INDUSTRY

Origin of machines	Number*	Percentage
a. Japan	58	82%
b. Italy	6	8%
c. Germany	4	6%
d. Other	3	4%
Machines are bought from		
a. Israel	57	53%
b. Locally (occupied territories)	42	39%
c. Imported through Israeli agents	9	8%
Machines bought are		
a. New	78	85%
b. Used	14	15%
Machines bought are		
a. Electrical	73	94%
b. Computerized	5	6%
Purchase of machines is financed through		
a. Personal savings	68	85%
b. Loans from banks	5	6%
c. Loans from relatives	5	6%
d. Other	2	3%
Maintenance of machines is done		
a. Periodically	37	59%
b. Only when machines break down	26	41%
Maintenance is carried out by		
a. Owners or their employees	51	59%
b. Local technician	23	26%
c. Israeli firm	13	15%

Source: Survey data.

* The number does not represent the entire sample. It represents only those workshops that responded to the relevant question in the survey questionnaire.

A shortage of skilled workers is also cited as a serious problem facing the textiles and garment industry, especially in the areas of fashion design, the operation and maintenance of machines, quality control, marketing and managerial skills. Indeed, as it currently exists, the educational system does not provide the necessary qualified workers, since there are very few training and vocational centres. Currently, the emphasis in education is on academics rather than on vocational fields. There are a few fashion centres (such as the Fashion and Textile Institute in Beit Sahour, which was established in 1994 to train students in pattern-making and fashion design) and a few vocational training centres run by the United Nations Relief and Works Agency for Palestine Refugees in the

Near East (UNRWA), charity groups and non-governmental organizations (NGOs); however, these institutions are limited in size and capability.

Difficulties in accessing financing are another problem facing the sector. Two thirds of the workshops covered by the survey cited 'availability of financial resources' as a main problem. They argue that commercial banks are not responsive to the financial needs of the industrial sector in general, including the textiles and garment industry. Some have suggested the establishment of an industrial development bank or similar industrial credit institutions to enable industrialists in the sector to obtain the necessary funds to purchase new, computerized machines, to buy raw materials and to finance exports. Others have suggested that the Government provide loan guarantees or that banks accept machinery and letters of credit as collateral.

Another problem cited by many of the surveyed producers is the lack of adequate supporting and related industries (such as spinning mills, weaving mills, dyeing facilities, machinery plants, accessory factories) and services (design centres, research and development institutions, marketing capabilities) which are needed to support a strong garment industry and which would give more flexibility to producers in the sense that they would be able to produce a variety of models, change the model quickly and produce small quantities of each model. Around 45% of the respondents in the survey claim that there is a need for local factories producing raw materials, such as thread and textile factories. A similar percentage claim that there is a need for supporting institutions, in particular marketing and export centres and, to a lesser extent, design, research and training centres. Many of the respondents argue that Israel has superiority over them because the Israelis own such facilities and because they also control the most important links of the industrial chain, mainly dyeing, design, machinery, and production engineering.

Finally, many industry leaders have complained about the lack of sector-friendly government policy that would promote private investment in this vital sector.

F. PUBLIC POLICY TOWARDS THE INDUSTRY

Government policy towards an industry, as well as the regulatory, trade and incentive systems in a country or area, including Palestine, has various effects on that industry's structure, behaviour and performance. It also affects managers' perceptions about the potential investment opportunities in the long run. This applies to the industrial sector in general, and particularly to the textile and garment industry. Indeed, the Israeli policies and procedures of the last three decades have resulted in the fragmentation of the market, the distortion of its structure towards subcontracting, and over-dependence on the Israeli economy for the imports of raw materials, machinery and accessories and for the marketing of final products; this is a situation that the textiles and garment industry in the West Bank and Gaza Strip has been suffering from until recently.

The Palestinian Authority, which has taken control over most economic activities in the West Bank and Gaza Strip, has not done much to alleviate the problems facing the textile and garment industry, although it has taken considerable steps to improve the

economic environment within which the industrial sector operates. These steps include the gradual rehabilitation of infrastructure, building up the necessary institutional framework and the making of legislative reforms, among other things. However, according to leaders of the industrial sector these actions are not enough. And besides, political uncertainty and economic instability remain at extreme levels as the frequency of border closures accelerates.

There are no special incentives specifically geared to stimulate investment in the garment industry. On the contrary, there are disincentives that serve to retard investment, especially during the transition period now being experienced. For example, business firms are required to abide by the provisions of the current labour laws in terms of compensations, pensions, insurance of workers, indemnities, sick leaves, overtime, and so on, many of which were not previously enforced. This will significantly increase the cost of production, especially since labour costs represent a high proportion of total manufacturing costs. Some industrialists estimate that these newly enforced requirements will increase labour costs by around 15%.[10] What makes things worse, as one industrialist says, is that these arrangements are retroactive. This will cause losses for most of the garment producers and may force some of them out of the market entirely. The prices (rates) charged to the contractors (Israelis or others) for subcontracting services in the past and the revenues received from them were based on the wage rate prevailing at the time the job was executed. That wage rate itself was based on the actual amount paid to workers; no allowances were made for additional payments or compensations. If workshops are required to pay these compensations with retroactive effect, many workshops will not be able to survive.

On the other hand, Palestinian garment producers have received no tax exemptions or incentives like those given to producers in other countries. Israel, for example, gives tax exemptions to garment producers for specific periods of time, in addition to grants that can amount to 38% of the investment in fixed assets, for factories that are located in certain development zones.[11] The proposed Palestinian investment law does not provide incentives for Palestinian garment producers that would encourage them to export. Furthermore, the exports to Israel, which represent almost 80%-90% of garment production in the West Bank and Gaza Strip, are not considered "exports" and are therefore not eligible for the tax exemptions and incentives given to "exporters" under any particular investment law. By contrast, the exports to Jordan and other Arab countries are considered "exports", but they represent only a small portion of garment production.

III. INDUSTRY PERFORMANCE

As mentioned above, the structure and performance of the textiles and garment industry have been to a large extent the result of Israeli policies and procedures during its

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[10] DRC Study Day, Ramallah, 7 July 1997.

[11] Antoine Mansour and Blandine Destremau, "Palestine and Israel: subcontracting relations in the garment industry" (Jerusalem: Palestine Economic Policy Research Institute [MAS]), 1997.

occupation of the West Bank and Gaza Strip for the last three decades. Economic factors (such as the small size of the market and the lack of natural resources) are undoubtedly important, but political factors were more profound, especially the restrictions by the Israeli authorities on the granting of permits to establish competing industrial projects, the unfair tax regime including tax rates, tax assessment and tax enforcement, the negligence of physical infrastructure in the West Bank and Gaza Strip, the restrictions on the imports of machines and raw materials, the restrictions on the exports of final products to countries other than Israel, and the lack of financial institutions to finance large investments, in addition to political and economic uncertainty. These policies and procedures have increased the cost of production, imposed barriers to entry, reduced competition, distorted the allocation of resources, engendered overdependence on the Israeli economy and adversely shaped the structure and performance of the Palestinian industrial sector, in particular the textiles and garment industry.

Indeed, an understanding of the trends in the structure and performance of the Palestinian textiles and garment industry can be gained by tracing developments in the Israeli economy.[12] During the 1970s, the Israeli economy began to open up to international competition through new liberalization measures and policies which led to the conclusion of several trade agreements, among them a free-trade agreement in 1975 with the then European Common Market and a free-trade agreement in 1985 with the United States. These agreements permitted Israeli products to enter the European Economic Community (EEC) and the United States markets free of custom duties and quotas and, together with other factors, resulted in the considerable growth of Israeli production and exports of textiles and garments. In 1995, the overall sales revenues earned by the industry amounted to $3.4 billion. Its exports rose from $58 million in 1987 to $1,081 million in 1995, of which 52% went to countries of the European Union (EU) and 37% to the United States.[13] In response to this rapid growth, Israeli textile and garment firms moved to labour-rich, cheaper locations, including Israeli development zones and Arab/Druse areas in the north of Israel, benefiting from the government support to these areas in terms of investment grants, tax exemptions and reductions, State guarantees for loans and the like. The occupied territories represented another important source of cheap, skilled labour that enabled the Israeli industry to expand its production and at the same time to face the increasing international competition, especially from the inexpensive labour countries. Israeli firms first started subcontracting with large Palestinian producers for sewing, but with time, they subcontracted for cutting, finishing and other stages of production. Since the early 1990s, international competition in the Israeli and world markets has increased, as customs barriers in Israel are gradually lowered and as other countries, in particular East Asian countries, gain greater access to the markets in Europe and North America. In addition, labour costs in Israel kept rising, environmental regulations were becoming more restrictive, and governmental support to the industry declined. The Israeli industry responded to this by transferring part of its

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[12] For an excellent exposition of this issue, see Mansour and Destremau, op. cit.

[13] Israel Export Institute, *Israel's Textile and Apparel Industry*, Israel Export Briefing (Tel Aviv, June 1996), p. 2.

manufacturing activities to neighbouring countries where labour was relatively inexpensive.[14] However, many business leaders, scholars and observers have concluded that the Israeli textile and garment industry is facing a deep crisis and that the current trend observed in the Israeli transfer of garment production to neighbouring countries can be considered a survival measure, aimed at avoiding the loss of the country's accumulated competitive advantage gained earlier in American and European markets.[15]

The above developments in the Israeli economy have been reflected in the Palestinian textiles and garment industry. As table 8 shows, the index of gross revenue for this industry fluctuated significantly in the West Bank and Gaza Strip during the period 1984-1990; this reflected sluggish local demand for domestic products as well as fluctuations in demand by Israeli firms for the subcontracting services of Palestinian garment producers.[16] The current crisis facing the Israeli textiles and garment industry has been translated into the closure of many garment workshops in the Gaza Strip and in the West Bank, especially those who depended on subcontracting work from Israeli firms. This raises the question of whether the Palestinian garment industry can survive in the post-peace process period. In order to provide an answer to this question, the performance of the Palestinian textiles and garment industry in terms of productivity, efficiency and competitiveness will now be investigated and evaluated.

TABLE 8. INDEX OF GROSS REVENUE FOR THE TEXTILES AND GARMENT INDUSTRY IN PALESTINE (BASE: I-III 1984)*

	West Bank	Gaza
1984	93	..
1985	49	118
1986	94	225
1987	175	278
1988	159	151
1989	198	136
1990	245	173

Source: Israel, Central Bureau of Statistics, *Statistical Abstract of Israel* (Jerusalem, 1991).

Note: Two dots (..) indicate that data are not available.

* Revenues were in US dollars.

A. PRODUCTIVITY

As noted in table 9, the productivity of labour (measured by the value added per worker) is low in the garment industry in the West Bank and Gaza Strip, compared with

[14] Ibid.

[15] ESCWA, *Study on the Impact of the Peace Process on Selected Sectors (Textiles and Electronics Industries)* (E/ESCWA/ID/1997/14). See the chapter "Conclusions and recommendations".

[16] Because data on output were lacking, gross revenues were used as an indicator of performance.

average productivity in the manufacturing industry in general and with the productivity of labour in the Israeli garment industry. The table also shows that the productivity in the garment industry in the West Bank and Gaza Strip is around 75% of the average productivity of the manufacturing sector but only one third of the productivity in the garment industry in Israel. This explains to a great extent the large wage differentials between the garment industry in the West Bank and Gaza Strip on the one hand and on the other hand both the Palestinian manufacturing sector and the Israeli garment industry.

However, productivity varies from one area to another and from one firm to another. For example, productivity in the garment industry exceeded $17,000 in the Bethlehem district but was around $2,000 in Jenin. In the textile industry it ranged between $13,300 in Hebron and less than $4,000 in Qalqelia. In terms of individual firms, productivity has amounted to around $26,000 per worker for some firms in Hebron (spinning of textile fibres) and $23,000 in Qalandia (finishing of textiles), or even $38,000 in some garment firms in Beit Jala and $57,000 in Al-Eizariyah. In other cases, productivity is very low with some firms even having negative value added. Owing to the lack of data on output, gross revenues were used as an indicator of performance.[17].

This, of course, raises the questions of what factors determine productivity and why productivity is so low in the garment industry in the West Bank and Gaza Strip. Why does productivity differ from one firm to another? What can be done to improve productivity in the Palestinian garment industry?

The survey revealed that the frequent closure of the West Bank and Gaza Strip is one of the main factors that negatively affect production and productivity. There are many cases where workers cannot reach their place of work, where raw materials cannot be delivered by main contractors to subcontractors, where machines cannot be repaired because of the lack of spare parts, or where the factory is closed because of electrical power outages. Soft demand by main contractors (for subcontractors) or by local customers was cited as another reason for lower production.

The survey also revealed that many of the surveyed workshops are operating at much less than their full capacity. In fact, table 10 shows that almost half of the workshops are operating at less than 60% of capacity, whereas the proportion of workshops operating at more than 80% of capacity does not exceed one third of the total number of workshops in the industry. Four main reasons were cited by the surveyed workshops for not producing at full capacity:

(a) Political restrictions (restrictions on the movement of people and goods, restrictions on the granting of entry permits to Israel and border closures);

(b) New competition from Jordanian firms;

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[17] Palestinian Central Bureau of Statistics , unpublished data.

(c) Low demand by Israeli contractors;

(d) Lack of adequate infrastructure, especially transportation and electricity.

As for the last-named factor, the survey showed that there were many garment workshops located in residential areas, especially those in Gaza, Qalqelia, Tulkarm, Hebron and Bethlehem, and that most of the machines in use were electrical; therefore, the plants would close in case of electrical power failure. Very few workshops have their own generators that could be used in the case of power outages.

Other factors, as well, may explain the low productivity of garment workers in the West Bank and Gaza Strip, such as the lack of advanced, computerized machines in the industry and the low capital/labour ratio that was discussed earlier. No solid, sufficient data were available to the author to investigate the impact of all these factors on productivity, but some unpublished data provided by the Palestinian Central Bureau of Statistics for 1994 were used to reach tentative conclusions.[18]

First, the impact of capital/labour ratio on productivity was investigated. Based on the available data, the calculations show that this ratio ranged from $35,400 to less than $100 per worker, with an average of $2,267 per worker. For establishments whose capital/labour ratio was above this number, average productivity was found to be around $8,385 per worker, compared with $4,420 per worker for establishments whose capital/labour ratio is below the industry's average. This result clearly indicates that the capital/labour ratio is an important determinant of productivity in the Palestinian textile and garment industry, such that a higher capital/labour ratio implies higher productivity. This result is economically sound since workers are expected to be more productive if they have modern machines (of higher value) to work with. This also explains, in part, the high productivity of the Israeli textile and garment industry.

As indicated earlier, the ratio of added value to gross output usually represents the degree of vertical integration, which indicates the number of different activities undertaken by the firm. For the textiles and garment industry in Palestine, this ratio was 0.56, which means that more than half of the total value of the product is executed by the firms in the industry. The calculations show that for establishments whose ratio of value added to output is above that average, productivity was around $6,220 per worker, compared with $4,260 per worker for establishments with a lower ratio of value added to output. This implies that firms carrying out more than one stage of production (for example cutting, sewing and finishing) are likely to be more productive than firms performing only one stage (sewing).

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[18] Regression analysis could not be USED, since in many cases data for each area were aggregated.

TABLE 9. PRODUCTIVITY AND WAGES IN THE PALESTINIAN TEXTILES AND GARMENT INDUSTRY, 1994
(Thousands of US$)

Governorate	Textile		Garments		Manufacturing	
	Productivity	Wages	Productivity	Wages	Productivity	Wages
Jenin	6100	3256	2175	1631	4108	3372
Tulkarm	4938	2860	3160	2469	3699	2358
Qalqelia	3829	2002	3848	2469	3969	2452
Nablus	5484	2034	3274	2567	5798	3000
Ramallah	8203	2691	5022	3632	8677	4402
Jericho	4038	..	3484	3021	5529	3639
Bethlehem	4123	4215	17137	3534	10427	4930
Hebron	13306	3746	4161	2231	7243	3807
Gaza Strip	7651	3844	4946	3080	6870	3119
West Bank and Gaza Strip	7019	3588	4991	2866	6815	3474
Israel	30532	13269	14084	9308	..	..

Sources: Palestinian Central Bureau of Statistics, *The Industrial Survey, 1994: Main Results, Report No. 2* (Ramallah, 1996) and Israel, Central Bureau of Statistics, *Statistical Abstract of Israel* (Jerusalem, 1996).

Note: Two dots (..) indicate that data are not available.

TABLE 10. CAPACITY UTILIZATION OF TEXTILE AND GARMENT WORKSHOPS (WEST BANK)

	Subcontractors		Independent Producers	
Capacity used	Number a/	Percentage	Number a/	Percentage
Less then 20%	3	8%	1	5%
20% - 39%	1	3%	7	37%
40% - 59%	16	43%	1	5%
60% - 79%	6	16%	4	21%
80% - 100%	11	30%	6	32%
Total	37	100%	19	100%

Source: Survey data.

a/ The number does not represent the entire sample, but only those workshops that responded to the relevant question.

Finally, consideration was given to the location of the factory or workshop. A distinction was made between establishments in cities or densely populated areas and those in villages and refugee camps. For the first group, average productivity was around $6,075 per worker, compared with $4,420 per worker for the second group, indicating higher productivity for establishments located in cities than for those in villages and camps. This can be explained in terms of the differential impact of closures and variations in the conditions of infrastructure, especially with regard to transportation, roads, communications and electricity.

The above analysis shows that the more productive factories are relatively large in size, are equipped with sophisticated machines and high technology, carry out more than one stage of production, and are located in urban areas. However, it should be remembered that these results are tentative and that the list of factors that could affect productivity should include other variables such as the political circumstances (closure, etc.) as well as economic and technological conditions which could include the lack of skilled workers, infrastructure and technology, among other things.

B. COMPETITIVENESS

Productivity has a direct impact on efficiency and competitiveness; higher productivity implies lower cost and, therefore, higher competitiveness. However, cost is not the only factor that determines competitiveness. Design, product differentiation and delivery time are also important. The survey showed that the Palestinian textile and garment firms can be competitive in the world market (including Europe and the United States) if they focus on more than keeping costs down and offering lower prices. According to industry leaders, the ability of Palestinian producers to compete in the export markets depends on five factors:

(a) Price: This is relatively more important in a case of standardized garments that are produced in very large quantities and where cheap, unskilled labour and high levels of automation are used;

(b) Quality: Final products must meet the standards and specifications set by customers, with minimal deviations;

(c) Product differentiation: This includes diversification of models, styles and products;

(d) Time: This factor is generally critical, in particular for fashion dresses or seasonal items. Delays can result in lost customers and shipments. For the Palestinians, this factor is extremely critical owing to frequent border closures;

(e) Quantities: Large customers in the export market are usually interested only in large quantities, since they have to have an optimal size of shipments, inventories or shelve space to make carrying the item economically meaningful.

Some Palestinian producers have succeeded in reaching very high levels of international standards efficiency and are making good profits. As one of the industry leaders stated, this was done through a "very efficient administrative system that depends on production engineering, providing more incentives to workers and using high technology and computerized machines."[19] According to this industrialist, this saves time and yields a savings in production time that amounts to around 20% on average. Furthermore, using high technology and competent management leads to better quality and highly differentiated products. Improved technology also gives the firm the flexibility to produce different models using the same machines, especially models with exacting specifications and requiring special attention.

However, many firms do not have management that is highly qualified or technology that is state-of-the-art. The owners are simply "technical" entrepreneurs who are over concerned with costs and ignore the other dimensions of competition. Most of these producers focus on the production of standardized items, where competition from the less developed countries is very strong, in the form of low labour costs and low prices.

C. MARKETING

For subcontractors, marketing is not of any concern. Their main concern is to obtain contracts from Israeli firms and to execute the jobs as quickly and as profitably as possible. They compete with each other as well as with Jordanian subcontractors, who can offer lower prices because of cheaper labour. The competition among subcontractors is stiff, especially during bad seasons, when many of them fight for the same business. Personal relationships, trust and a subcontractor's previous record are all important in obtaining business, but price, quality and delivery time are more important. Some of the small shops cannot obtain business directly from Israeli firms (or may not want to), and they seek to subcontract some of the business that is obtained by the large subcontractors.

In contrast to the subcontractors, 100% of whose production goes to Israel, there are cases where 100% of the production ends up in the local market, either placed there directly by the producer or indirectly through local wholesalers and retailers. Because of frequent closures of the West Bank and Gaza Strip, the products of one area have difficulty in reaching other areas, which reduces the market size for textile and garment producers in both areas.

Finally, there are cases where local producers distribute part of their production in the West Bank or Gaza Strip and the rest to Israel, Jordan or other markets such as the United States and Europe. However, selling to foreign markets is usually done through an Israeli agent, whose task includes, but is not necessarily limited to, the facilitation of transportation, shipping, and delivery of the final products and raw materials.

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[19] Bassam Badran, personal communication, 20 April 1997.

Competition in the local market has been viewed by many respondents as strong; price and quality are quoted as the main bases of competition. As table 11 shows, more than 40% of the respondents view Jordanian products as their main competitors, because of their lower costs. Israeli products are also viewed as rivals, especially in the higher quality segments of the market. Some firms view Syrian and European products as potential rivals, the former in terms of price and the latter in terms of quality.

Competition in the Israeli market has been viewed as very strong or strong, and focuses mainly on quality and design. This has been explained in terms of higher per capita income and more sophisticated consumers in the Israeli market, compared with the market in the West Bank and Gaza Strip.

IV. INDUSTRIAL RELATIONS

There are no accurate data on the trade of textiles and garments between the West Bank and Gaza Strip on the one hand, and Israel and the rest of the world on the other hand. According to the PCBS *Industrial Survey 1994*, the textile and garment industries export 13.5% and 20.2% of their total sales respectively; these numbers, however, do not include subcontracting or sales to foreign customers through Israeli contractors.

According to the Textile and Garment Association in the West Bank, the production of garments in the West Bank is distributed as follows:

- To Israel under subcontracting arrangements
- To the local market
- Direct exports

In the Gaza Strip, approximately 90% of the garment producers operate either principally or entirely as subcontractors to Israeli firms, while the remaining produce for the local market. Direct exports from the Gaza Strip are negligible.

Thus, the relations between Palestinian producers and Israeli (and foreign) producers may involve subcontracting, direct exports or joint ventures.

A. SUBCONTRACTING

As explained above, subcontracting arrangements account for around 80% of garment production in the West Bank and almost 90% of garment production in the Gaza Strip. In general, Palestinian subcontractors work for three groups of contractors:

TABLE 11. MARKETING AND COMPETITION IN THE PALESTINIAN TEXTILE AND GARMENT INDUSTRY

	Independent producers		Subcontracting	
	Number a/	Percent	Number a/	Percent
Producer sells in				
a. West Bank and Gaza Strip	20	50	0	0
b. Israel only	2	5	43	81
c. Both markets	18	45	10	19
Firms market through				
a. Wholesalers	17	38	3	7
b. Own store	11	24	3	7
c. Directly/sales force	7	16	0	0
d. Agent	10	22	40	86
Competition is viewed as				
a. Very strong	5	31	2	20
b. Strong	9	56	7	70
c. Weak	2	13	1	10
Competition is considered to come mainly from				
a. Local producers	2	12	2	12
b. Jordanian firms	7	44	9	53
c. Israeli firms	3	19	6	35
d. Other	4	25	0	0
Competition is focused on				
a. Price	23	62	12	55
b. Quality	11	30	8	36
c. Design	2	5	0	0
d. Other	1	3	2	9

Source: Survey data.

* The number does not represent the entire sample, but only workshops that responded to the relevant question in the survey questionnaire.

- The first group includes small Israeli producers who normally subcontract to small Palestinian workshops (each with 20-30 machines), but who sometimes subcontract to bigger workshops. The large number of small producers in the Israeli market usually produce for the local market in Israel but sometimes produce for the Palestinian market. They usually produce under unknown brand names, and yet there is imitation of these brand names in the local market. Here, the Israeli contractors usually provide the raw materials already cut and ask the Palestinian subcontractors to do the sewing only. Sometimes, however, they supply them with the materials and the design and ask them to do the cutting and sewing. Most of the Palestinian workshops in

this group have not been affected by the Israeli agreements with Jordan because the quantities are small and there are many models involved.

- The second group includes the large contractors who represent well-known international brand names, such as Crocker and Levi. These producers usually subcontract with many local workshops and produce large quantities, mostly for the local Israeli and Palestinian markets. Crocker, for example, distributes its work among many factories since there is no single factory that can produce all styles and in great enough quantity. There are also imitations of these famous brand names in the local market. Many of the factories in this group moved to Jordan and Egypt seeking cheaper labour.

- The third group of contractors produces for export. The firms in this group produce very large quantities and usually distribute them to various subcontracting workshops in the West Bank and Gaza Strip (and sometimes to workshops in Jordan). However, unlike the second group, most of the garments produced by this group are targeted for export. Some of the firms in this group have moved or are planning to move to Egypt or Jordan, directly or through joint ventures.

Thus, the quantities produced by Palestinian subcontractors can be divided into three parts, which according to local industry experts have roughly equal shares of the market.

- One part is marketed inside Israel through Israeli contractors. For the Palestinians, the Israeli market is important because it is very close to the occupied territories, and because of the experience that can be gained and the greater possibility for flexibility in dealing with that market. During the last three decades, it was not possible to separate the Palestinian and Israeli markets. The Palestinian subcontractors have been dealing with the Israelis on a personal basis: no letters of credit are opened, no guarantees are provided, and transactions worth thousands of NIS are executed daily.

- A second part is exported to foreign markets through Israeli agents. In this case, most of the production activities are usually completed in the West Bank or Gaza Strip while Israeli contractors (or agents) undertake the shipping and logistic arrangements. This type of arrangement is important for many large Palestinian producers because it gives them the opportunity to develop their own links with export markets and to sell their products directly to large foreign customers who generally have their own collections. When the foreign customers place orders with Palestinian subcontractors, they inform them of the styles they want produced, as well as the sizes, the type of fabric, the colours and all other details. The subcontractors then prepare the garments according to the style and design submitted by the customer, and do the entire process including sewing, finishing, ironing and packaging. The goods are then shipped by the Israeli agents who are able to

bring their trucks to the West Bank and Gaza Strip to transport the final products, even during border closures. Some of the international brand names produced for foreign customers include Calvin Klein, Jordache, C&A, Chaus, Arrow shirts, Liz Claiborne and Marks & Spencer.

- The third part of the subcontracted goods is marketed back in the West Bank and Gaza Strip by the Israeli producers. This part usually includes the marketing of high-quality, well-designed, internationally known brands such as Crocker and Levi. The design and fabrics are provided by the Israeli contractors, while production takes place inside the West Bank and Gaza Strip.

The peace process has raised doubts about the future of subcontracting activities. It has been noted that many Israeli firms have begun to withdraw from the West Bank and Gaza Strip and to relocate, mainly to Jordan and Egypt. According to industry experts, the main reasons for this are the following:

(a) Economic reasons, such as the search for new sources of cheap labour to reduce cost, or strategic reasons such as the desire to search for alternative choices, avoiding over-dependence on the Palestinians.

(b) Security reasons: Some Israeli businessmen find business in the West Bank and Gaza Strip to be very risky personally.

(c) Closures: Frequent closures often result in late delivery of products. Millions of dollars have been lost by Israeli firms because of sudden closures of the Gaza Strip. Compounding this risk higher is the fact that no one can predict when the occupied territories will close again.

(d) Some Palestinian businessmen believe that the Israeli authorities encourage Israeli firms to move to Jordan and Egypt for political purposes, namely to put pressure on the Palestinian Authority to make political concessions.

Nevertheless, industry experts believe that Jordan and Egypt do not represent perfect substitutes or better alternatives as subcontractors to many Israeli firms. The reasons cited for this belief were the following:

(a) Since Jordan and Egypt do not have free-trade area agreements with the United States, the final goods produced in these countries should be returned to and shipped from Israel to benefit from the free-trade area agreement between Israel and the United States.[20] In addition, raw materials should also be shipped from Israel to Jordan to

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[20] According to the free-trade area agreement between Israel and the United States, a product is considered to be of Israeli origin if: (a) its raw materials have undergone a material alteration, (b) it passes the 35% test, and (c) it is dispatched directly from Israel to the United States. For Israel (only),

ensure the minimum content of value added (the 35% test). This increases the costs of production considerably. On the opposite side, the West Bank and Gaza Strip have such an agreement with the United States, which means that the garments produced in the West Bank and Gaza Strip benefit from the free-trade area arrangement.

(b) Regarding the free-trade agreement with the EU, proposed changes to the European Communities (EC) rules of origin treat Israel and the West Bank and Gaza Strip as separate entities, and regard the product as originating in the country where the final processing takes place, provided the value added there exceeds the value of the material originating in the other country.[21] This means that unless the value added in the West Bank and Gaza Strip exceeds the value of the Israeli fabric, then garments made from Israeli fabric will have Israeli origin if exported to the EC. According to the proposed changes, the West Bank and Gaza Strip would be treated equally to Israel, Jordan, Egypt, the Syrian Arab Republic and Lebanon.

(c) For Israeli firms who order small quantities, the Jordanian option is not at all attractive. According to some estimates, the shipment of 1,000 pieces from Jordan to Israel would cost NIS 1,000, which is very high. These costs would also be increased by additional costs of supervisors, experts and quality inspectors who would need to spend extended periods of time in Jordan (or Egypt) to guarantee quality. The Israeli contractors, especially the many Israeli firms who demand small quantities, could save much of these additional costs by keeping their business with Palestinian subcontractors (however, for large-scale firms, Jordan and Egypt may be attractive alternatives).

(d) The proximity of the Palestinian subcontractors to Israel adds an element of flexibility to the Palestinian option that is not the case with the Jordanian or Egyptian subcontractors. In addition to the savings in shipping costs, Israeli contractors can supply designs to Palestinian subcontractors and receive models from the Palestinians in less than 24 hours. Any changes or modifications that need to be made before starting production can be carried out and conveyed to the other side within a few hours. The final products can be delivered to the Israeli contractors as soon as they are completed, and sometimes in small quantities of 100-200 pieces, two or three times daily. Such flexibility is not a possibility for the Jordanian or Egyptian subcontractors.

It is therefore expected that subcontracting will continue to be an important part of the textiles and garment industry for some time to come, at least to serve the many small Israeli firms as long as they remain in the textile and garment business.

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material alteration is considered to take place at the stage of cutting the fabric, so that sewing can be done outside Israel and yet the producer can still benefit from the rule of origin.

[21] Allan Waight, *Principle Features of EU Rules of Origin.* Economic Policy Programme, an initiative of the European Union. Background Brief 3 (February 1997), p. 4.

B. DIRECT EXPORTS

Palestinian producers in general do not export directly to overseas customers. Lack of experience is cited as one of the reasons for this, but difficult security and delivery conditions were cited as the most important reason. In the current circumstances, Palestinian producers would prefer to deal with foreign export markets through Israeli firms because of the high risk of delays and non-delivery owing to the frequent closures of the West Bank and Gaza Strip. For many Palestinian firms, the Israeli "agent" represents a guarantee to minimize such risks and to ensure that products will be shipped on time, a crucial element of the competitiveness of firms in this business where time, season and fashion are very important. The Israeli agent can bring his trucks in and ship the garments even during closures. Thus, for the Palestinian producers, the commission paid to the Israeli agent is like an insurance premium that must be paid to avoid serious calculated risks. Naturally, if the services of such Israeli middlemen could be eliminated, costs could be reduced and Palestinian products would be more competitive in the world market.

In a small number of cases, exports are made directly by Palestinian producers (especially those in the Jerusalem area) or by Arab Israelis who have established their businesses in the occupied territories, or by Palestinian producers to or through Jordan. However, the value of these exports amounts to no more than 5% of the value of gross output.

C. JOINT VENTURES

There are a few joint projects between Palestinians and Israelis or other nationals. These projects are usually small in size and typically involve a Palestinian party who provides the site, and an Israeli party who provides the machines, the design and the management. The factory is usually in the West Bank or Gaza Strip, where cheap labour is available, and in most cases the Israeli partner is an Israeli Arab (1948 Arab). This arrangement is usually made in response to the frequent closure of the West Bank and Gaza Strip when Palestinian workers are not allowed to enter Israel. In such circumstances, some of the producers in Israel have moved their businesses to the West Bank or the Gaza Strip while others have established joint ventures with Palestinians, usually in the border cities and villages, to save on transportation costs while at the same time ensuring the continuous supply of cheap labour to keep their factories running.

On the other hand, there have been attempts to establish large joint ventures with foreign partners for economic reasons that have to do with the division of labour. Currently, for example, there is a joint venture between a Palestinian firm (Badran of Tulkarm), an American firm, and an Israeli firm (New Horizon) to produce sweaters. The American company, which is one of the world's leading firms for this product, will be responsible for the design and marketing; the Israeli firm will supply the raw material (knitting), and the Palestinian side will undertake the cutting, sewing and trimming (CMT). Gradually, the knitting and design will be done by the new joint venture, which will also participate in the marketing activities, according to the Palestinian partner, Bassam Badran. The Israelis and Americans will invest in the capital and transfer the

relevant technology to the new project, which is expected to export around $15 million worth of goods in the first year, with substantial growth in the years thereafter.

More joint ventures with partners from other countries are expected by industry leaders, especially in the light of the preferential trade agreements between the Palestinian Authority and the United States, the European Union, Canada and the European Free Trade Association (EFTA). These agreements give the Palestinian industry a competitive advantage in the markets of the aforementioned countries and areas by offering an enticing incentive for foreign firms to establish joint ventures with the Palestinians to benefit from the preferential treatments given to Palestinian products. Some of the garment business leaders expressed high expectations about establishing joint ventures with European firms attracted to these projects and who may provide the European designs, the European raw materials, and the international trade names. The products can then be exported to the United States under these international brand names and benefit from the free-trade agreement in the American market. The Palestinians have excellent experience in the production of high-quality garments under international brand names such as Calvin Klein and Arrow, and they have shown great interest in Palestinian-European partnerships in the textiles and garment industry which would enable them to enter new international markets.

Businessmen from other countries are also expected to seek joint ventures with Palestinian producers. Some have already made inquiries. These foreign firms also seek to benefit from the free-trade area agreement between the Palestinian Authority and the United States. Currently, Palestine is one of only four countries granted this status .[22] As mentioned above, even if labour costs are very low in the East Asian countries, Palestinian products can still be competitive in the American market as long as the cost of labour is not very high relative to total cost, since the exemption of Palestinian products from custom duties in the American market could overweigh the differences in labour cost. This could happen if Palestinian producers use advanced technology, modern machines, and highly skilled labour, which would decrease the share of labour cost to the total value of the product.

V. PERCEPTIONS OF MANAGERS

The perception of garment producers with respect to the impact of peace on the industry is mixed. Some think that peace will encourage new rivals to enter the market, which represents a threat to them. On the other hand, others believe that peace will represent an opportunity for them to build a strong industrial sector and make inroads into new markets.

To understand these perceptions, it is necessary to distinguish among various groups of producers with regard to production activity and size of operation. In general, a distinction can be made between subcontractors who view their main rivals to be other local subcontractors, the Israeli subcontractors who only recently moved to the occupied

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[22] The other three countries are Canada, Mexico and Israel.

territories, and the Jordanians and the Egyptians on the one hand, and the independent (or semi-independent) Palestinian producers who view their rivals to be other local producers, Israelis, Jordanians, Syrians and sometimes Europeans on the other hand.

Table 11 shows that more than half of the surveyed Palestinian subcontracting firms consider competition to be mainly from Jordanian firms; these are generally small subcontractors. More than one third of the firms consider competition to be mainly from firms owned by Israelis, especially Israeli Arabs who have moved to the occupied territories. Ninety per cent of the surveyed subcontractors view competition to be very strong or strong, while 55% of them believe that competition is focused mainly on price.

A distinction should be made, however, between producers who subcontract for small Israeli firms and those who subcontract for large firms. It is estimated that at least 50% of Palestinian workshops work for small Israeli factories. As explained in the above section, for local producers who subcontract for small Israeli firms, the competition by Jordanian subcontractors is not as severe as it seems. Despite the fact that labour costs in the Palestinian garment industry are twice those in Jordan,[23] the productivity of the Palestinian workers, the proximity to Israeli producers, the flexibility in meeting delivery schedules and responding to changes, and the significant savings in transportation, communications, supervision and delivery times will outweigh the additional costs that are paid to Palestinian subcontractors.

For large Israeli contractors, the quantities are generally huge, and the savings from moving abroad are therefore great. Many of these large firms have already moved to Egypt and Jordan to benefit from the cheap labour there. This move has reduced the demand for Palestinian subcontractors' services, causing many of the small ones to close down; this is especially true in the Gaza Strip. The subcontractors remaining in the market now have to compete for a smaller share of the pie, which results in lower subcontracting prices, at the same time that wages are being driven up by Israeli contractors who have moved to the occupied territories to avoid the problems resulting from border closures by the Israeli authorities.

However, some of the larger Palestinian subcontractors have already started doing business directly with large foreign firms in either the United States or Europe. Israeli agents are usually used to guarantee the financial, shipping, customs clearance and other logistic arrangements which are necessary because of the political realties, but these agents take a large share of the pie. It is estimated that the Israeli companies make a 25% profit on the $750 million worth of garments produced in the Palestinian factories, while the Palestinians themselves make only the manufacturing costs, estimated to be around 30% of the value of the product.[24] To the extent that the peace process will allow Palestinian

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[23] Basem Makhoul, *Al-Qudrat al-Tanaafusiya li-Sinaa'aat al-Filistiniya muqaarina bil-Sinaa't al-Urduniya* (The competitiveness of Palestinian industries in comparison with Jordanian industry) (Jerusalem: Palestine Economic Policy Research Institute [MAS], 1996), p. 36.

[24] Bassam Badran, DRC Study Day, Ramallah, 7 July, 1997.

producers to export freely and directly, without Israeli middlemen, the costs would be lower and Palestinian products would become more competitive in the world market.

For local independent producers who cover all stages of production, the peace process represents a threat of increased competition from lower-cost products from Egypt, Jordan, the Syrian Arab Republic and East Asian countries. Some products from these producers have already started entering the local market through individuals and small traders who cross the Jordanian-Palestinian and the Egyptian-Palestinian borders on a regular basis, carrying with them a variety of items, mainly low-cost garments. Indeed, Syrian products available at cheap prices in the local market have been noted. Some Israeli firms also import ready-made articles from East Asia (China, for example) and market them in local Palestinian and Israeli markets, as it is cheaper to import them than to produce them. Alternatively, Palestinian producers compete with Israeli and European producers in high-quality products in both local and Israeli markets. The survey showed that for some products, such as men's suits, there is strong competition from Israeli and European products. In general, Israeli firms are vigorous competitors in high-quality products, which represent 30% of the local garment market. This is because they are supported by good infrastructure, high technology, and a diversified cluster of garment-related industries and supporting services such as design centres, textile and accessories industries, and training institutions.

However, the peace process could enable the Palestinian producers to purchase raw materials and accessories from sources other than Israel, which would reduce their costs considerably. A study by Basem Makhoul shows that 37% of the current cost of raw materials and machines could be eliminated if these could be imported directly from the same sources now used, but without Israeli restrictions and obstacles on imports. In addition, the cost of intermediate goods could be reduced by 60% if the Palestinian producers were allowed to import them from the best international sources.[25]

On the other hand, many Palestinian firms recognize that the successful outcome of the peace process would require them to reconsider their production and marketing strategies. Of great importance is the switch to high-quality, differentiated products with high value added content. The Palestinians are now producing relatively standardized, low-cost products based on labour that is cheap *vis-à-vis* Israeli labour. However, although this strategy might have been acceptable under the previous situation and perhaps under the current situation, if real peace is achieved and local and Israeli markets are opened up to competition from producers all over the world, the above strategy may not be appropriate. One reason is the dependence on cheap labour: this could be eventually self-defeating in the event that producers succeed in achieving higher productivity of labour by providing better training of workers, purchasing more machines, and improving technology, as wages would have to be increased accordingly. Higher wages, however, would result in higher costs, which would reduce the competitiveness of Palestinian products. In other words, this growth cannot be sustained in the long run. On the other

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[25] Makhoul, op. cit.

hand, if borders were open to products from Egypt, Jordan, the Syrian Arabic Republic, China, and other East Asian countries, the Palestinian producers could not compete in terms of cheap labour, as labour costs in some of these countries do not exceed 10%-15% of Palestinian labour costs.

Given these facts, the strategy that Palestinian producers should probably follow is to move from subcontracting from Israeli firms to engaging in export-oriented full production, and to producing high-quality, differentiated garments which focus on design, style and quality rather than on price, and which utilize modern machines and skilled workers. This would enable these producers to target certain segments of the Palestinian, Israeli and world markets. These views were expressed by some large producers who believe variously that peace represents a threat, a challenge, or an opportunity that should be taken. Some industry leaders believe that Israel is phasing out its participation in labour-intensive industries such as garments and moving towards the high-tech industries. These industry leaders believe they will benefit from Israeli technology used in the garment industry. According to one industrialist, "We can expect more of the technology in the textiles and garment industry to be transferred to the Palestinians, because the Israelis seem to be moving away from this industry towards high-tech. The Palestinians could replace them. The Jordanians will also try, but we have an edge."[26] This edge is the result of the Palestinians' lengthy and rich experience in dealing with the Israelis, working with them as employees and subcontractors, buying machines and raw materials from them, visiting their factories, and learning many technical and managerial skills from them. A great deal of the industry's know-how was gained or transferred during the last three decades, giving the Palestinians a valuable advantage.

On the other hand, a restructuring of the relations between Palestinian industry and the rest of the world should consider the political, economic and commercial transformations that have occurred in the region as a result of the peace process. More emphasis, therefore, should be given to regional cooperation, especially between the Palestinians and the neighbouring Arab countries, such as Egypt and the Syrian Arab Republic, which produce various qualities of cotton, as well as Jordan and Lebanon, to form a regional competitive textiles and garment cluster.

However, many prerequisites must be in place if this strategy is to be adopted. Some of these prerequisites are related to the peace process itself, in particular the political and economic stability. This implies full control over borders, the end of the policy of closure, and full independence in political and economic decision-making. This factor is crucial and has a tremendous impact on investment opportunities, costs, prices, delivery times, and other elements of competitiveness.

Another prerequisite is adequate infrastructure, which has to be completed before such a strategy can be successfully launched. Airports, seaports and telecommunications facilities will make possible contact and trade with the rest of the world, in addition to the

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[26] Bassam Badran, personal communication, 20 April 1997.

impact they would have on lowering transaction costs. The rehabilitation of roads, the installation of railroads, and the completion of the safe passage between the West Bank and the Gaza Strip would enable the cheap and safe transportation of products and raw materials. The availability of a cheap supply of electricity would allow the textile and garment workshops to operate without interruption and with reasonable overheads. The establishment of industrial zones could help in providing some of these factors at reasonable prices.

Institution-building is another prerequisite, and one which the Palestinian Authority has started; its efforts in this regard should be continued. This includes the design, training and educational centres that provide the industry with the skills it needs. Some industry leaders have suggested the establishment of specialized institutions (universities, colleges, etc.) to provide professional and technical skills to a number of students each year. This factor of institution-building also includes the financial institutions that provide the textiles and garment industry with the financing needed for investment in machines and for working capital, in addition to financial services needed to conclude various business transactions. This may include loan-guarantee funds and export-promotion banks. Also of great significance is the establishment and development of export and marketing capacity, which may include the establishment of export centres and marketing institutions, the search for new markets and the identification of suitable market niches.

Another prerequisite for the success of the strategy described above is a favourable public policy, one that would provide the industry with the legislative and incentive regimes needed to encourage the private sector to adopt and develop modern technology and to invest in machinery, research and development, design, training and other activities that would improve the competitiveness of the textiles and garment industry. This regime could include tax exemptions for limited periods of time on products for export, and incentives to banks to finance export transactions and investments in machinery. The Palestinian Authority could also help the industry by providing Palestinian entrepreneurs with information about other markets, by concluding trade agreements with other countries, and by facilitating the participation of industrialists in trade fairs. This latter would give Palestinian producers the opportunity to meet business people from all over the world with whom they could possibly do business and enter into joint ventures.

VI. SUMMARY AND CONCLUSIONS

The textiles and garment industry is one of the most, if not the most, important industry in the Palestinian economy in terms of employment, output and number of establishments. However, it consists of a large number of small family-owned and family-run workshops, most of which are subcontractors to Israeli firms. The garment industry is labour-intensive with the capital/labour ratio being the lowest in the entire manufacturing sector. There is a shortage of skilled workers in the West Bank and Gaza Strip since many of these work in Israeli factories for the very high wages available there.

Raw materials are either provided by Israeli contractors, in the case of subcontracting, or are purchased from large Israeli producers or importers. Machines are also purchased from Israeli agents or local dealers and are usually financed by owners, out of their personal savings.

This industry structure is a result of Israeli policies and procedures applied over the last three decades of occupation. The prevailing political uncertainty and economic instability–especially the frequent closures of borders, the restrictions on the movement of people and goods, and the restrictions on exports and imports–help to maintain this situation.

These conditions are reflected in the performance of the textile and garment industry. Comparative data show that productivity is generally low in this industry, although it varies from one area to another and from one firm to another. Data also show that many workshops operate at far below their full capacity. The survey conducted for the present study indicated that political restrictions, competition from Jordanian firms, low demand by Israeli contractors, and the lack of an adequate infrastructure are among the factors to be blamed for this low productivity. In addition, the low capital/labour ratio, the small size of firms and the weak degree of integration also play a role.

However, the survey revealed that some Palestinian producers are nevertheless meeting international standards of efficiency and competitiveness. These are generally the large subcontractors who produce for large foreign customers.

The success or failure of these producers was subject to a set of conditions that began to change with the beginning of the peace process and the Palestinian Authority's assumption of its responsibilities over most of the West Bank and Gaza Strip. Some of the main features of such changes include the increased competition in world markets, the crisis facing the Israeli textiles and garment industry, the free-trade area agreements between the Palestinian Authority and the United States and the European Union, and the entry of the Jordanians into both the local markets and the subcontracting business.

Subcontracting from Israeli firms covers 80%-90% of total garment production in the West Bank and Gaza Strip. Production for the local market and for direct exports amounts to no more then 15% and 5% respectively. Therefore, subcontracting activities dominate this industry. The quantities produced by Palestinian subcontractors can be divided into roughly three equal parts: production marketed inside Israel, production exported to foreign markets through Israeli agents, and production marketed in the West Bank and Gaza Strip.

The future of subcontracting activities is doubtful in the aftermath of the peace process. Many Israeli firms have already started withdrawing from the West Bank and Gaza Strip for security, political and economic reasons, among others. However, for small Israeli firms this option may not be satisfactory because of the flexibility and savings that the Palestinian option offers. Therefore, it is expected that subcontracting will remain a major activity in the textiles and garment industry even after a real peace is achieved, at

least for some time. It is expected, however, that some of the large Israeli producers will move their main activities to Egypt and Jordan to take advantage of the cheaper labour in these countries. Alternatively, it is expected that large Palestinian producers will be able to export directly and competitively to foreign customers after the Israeli middleman is removed. Some European and East Asian firms are also expected to seek joint ventures with the Palestinians to benefit from the free-trade agreement between the Palestinian Authority and the United States, and from other similar preferential trade agreements between the Palestinian Authority and other countries.

Thus, the peace process represents a challenge and an opportunity, but also a threat for the Palestinian economy in general, and in particular for the textile and garment producers. The perception of these producers toward the peace process is therefore mixed. Some of them view the peace process as a threat because it will allow competition from low-cost countries such as Egypt, Jordan or East Asian countries. Others view the peace process as an opportunity to gain access to new markets and to find cheaper sources of raw materials and machinery.

The main challenge for the industry involves a strategic move: switching from the relatively standardized, low-cost products which depend on cheap labour to the high-quality, differentiated high-fashion products with a high value added content and which depend on modern machines and skilled labour. This transformation is crucial if the textiles and garment industry is to survive the severe competition from the cheap labour countries. However, many prerequisites must be in place for this strategy to succeed. Some of these prerequisites are related to the peace process itself, such as political certainty and stability. Other prerequisites include an adequate infrastructure, the availability of supporting institutions and services, and an industry-friendly public policy.

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THE TEXTILES AND GARMENT SECTOR IN JORDAN, LEBANON AND THE SYRIAN ARAB REPUBLIC: CHANGES IN THE LIGHT OF PEACE AND OTHER REGIONAL AND INTERNATIONAL DEVELOPMENTS*

I. COUNTRY POLICY

In general, public policy towards a given industry, including trade, promotional and regulatory policy, has various effects on that industry's structure and performance. Such policy also influences industrial managers' long-term perceptions of investment prospects in the concerned sector. This applies to the industrial sector in general and to the textiles and garment industry in particular. Public policies in most ESCWA member countries are currently under revision; the aim of this section is to analyse what these policies imply for the textiles and garment industry in selected ESCWA member countries: Jordan, Lebanon and the Syrian Arab Republic.

A. REGULATION OF PRIVATE INVESTMENT

The most important instruments for regulating private investment in industry in the countries under review are licensing and financing.

1. *Licensing*

Among the countries under study, only the Syrian Arab Republic imposes licensing, to monitor private sector investments in industry. The setting up of industrial projects is monitored through industrial licensing, either according to long-established Law No. 103 of 1953 or the more recently introduced Law No. 10 of 1991.[1] Although both laws provide for a grace period involving tax exemption once production begins, licensing means that a private sector firm is later subject to government taxes and various forms of scrutiny. This has affected the mode of operation of the country's very small firms (many of which are in private sector garment production). These firms sometimes do not apply for a licence, thus depriving themselves of the many benefits provided by these laws and losing the opportunity to reduce their production costs.

In Jordan and Lebanon, licensing of new industrial projects is not required. However, there are exceptions; for instance, in Lebanon a manufacturing facility may be

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* This paper is based heavily on country reports prepared by Mr. Riad Khoury and others on textiles and garments in Jordan, Lebanon and the Syrian Arab Republic.

[1] ESCWA, *Review of Recent Development of Manufacturing Activities and Prospects in the ESCWA Region, 1993* (E/ESCWA/ID/1993/11).

asked to adjust its methods of production or even—for a new facility—to relocate elsewhere in the country, depending on pollution and other environmental factors.

In general in the countries under review, restrictions on the operation of industrial firms are being scaled back, in particular with regard to the setting up of new industrial projects. In Jordan, for example, the requirement to produce "No objection" certificates from ministries has been eliminated, in order to facilitate the process of company registration. It is noteworthy, however, that garment companies recently interviewed were largely unaware of this important measure. In the Syrian Arab Republic, the public sector dominates the textiles and garment industry, but the Government has been giving up its monopoly in several sectors of this industry. For example, it has relinquished its monopoly on the weaving and carpet industries. In 1994, the State also allowed the private sector to manufacture cotton thread, an activity which had been a government monopoly for three decades.

2. *Financing*

In general, in the countries under review, both medium- and long-term financing are hard to secure, and in any case require high levels of collateral. In the Syrian Arab Republic, the absence of private financial institutions has resulted in a lack of liquidity. The situation in the countries under study, in particular the Syrian Arab Republic, has forced most producers to carry out their business deals in cash. In Jordan and Lebanon, where the economy is relatively more market-oriented, the textiles and garment sector is in great need of medium- and long-term financing in order to replace or upgrade outdated equipment. However, the high levels of collateral required by the banking system make it very difficult for the sector to secure the required funds, in particular since banks do not yet accept equipment as collateral.

In the Syrian Arab Republic, the banking system is underdeveloped; private banks are prohibited. Most business deals are carried out on a cash basis and rely on self-financing. The public sector faces financial difficulties, such as insufficient allowances of hard currency for imports of raw materials and spare parts, a situation which often results in stoppages of production. Other problems involve lack of liquidity, high levels of indebtedness and lack of financial independence. Public companies are forced to transfer their profits and excess cash to the Ministry of Finance in order to receive investment allocations. This centralization strips the company of control of a key management tool. Additionally, in this situation, debt accumulates, further increasing the enterprise's cost of production. One State company stopped its production for almost 10 years because of deficits and lack of liquidity.

B. ECONOMIC AND TRADE POLICIES

None of the countries under consideration has a specific promotional policy towards the textiles and garment sector as such; the only relevant policies govern the manufacturing sector in general. In these countries, incentive and trade policies greatly affect the performance and profitability of the textiles and garment sector.

1. *Incentives*

Although there are no specific incentives directed at the textiles and garment sector, in Jordan and the Syrian Arab Republic, the Government provides manufacturing activities in general with promotional incentives. A number of these incentives (such as tax exemptions) are granted under investment promotion laws. In Jordan these are granted under the investment promotion law of 1995 (Law No. 16), and in the Syrian Arab Republic, under the provisions of Law No. 10 of 1991. In the Syrian Arab Republic, investors are offered incentives such as exemptions from customs duties and foreign-exchange regulations, as well as tax holidays of up to seven years. However, neither the law in the Syrian Arab Republic nor that in Jordan distinguishes between a firm that engages in a high value added manufacturing activity and a company that imports ready-made materials and simply assembles them. This encourages the diversion of investment from the production of higher value added textiles and garments to lower value added products that involve simpler production processes.

2. *Trade policy*

In most countries, trade policies are pursued to protect the domestic textiles and garment industry and to promote the country's exports, with such protection policy in general having a considerable impact on the industry of the country in question. Relatively high tariff rates are imposed on imports of products—and in the Syrian Arab Republic quantitative restrictions are also imposed on such imports. However, sometimes the policies in effect serve to damage the local industry. In this connection, whereas national policies generally promote exports, in some cases (the Syrian Arab Republic) taxes are imposed on exports, and customs duties are imposed on raw materials and other inputs, adding to production costs.

The policies aimed at promoting the exports of the countries under consideration involve the application of tax breaks and/or provisions for the temporary entry of raw materials into the country (that is, the duty drawback system). However, many exporters do not take advantage of the drawback system, because of the complicated bureaucratic procedures involved.

(a) *Import protection*

Although tariff restrictions are commonly used in Jordan, Lebanon and the Syrian Arab Republic to protect their textiles and garment industries, non-tariff barriers are applied only by the Syrian Arab Republic.

In Jordan and Lebanon, non-tariff barriers are not commonly used as a means of protecting local industry, and neither of these countries imposes quotas or qualitative restrictions on imported textile products and garments. However, the absence of quotas on the imports of certain categories of textiles and garments is viewed as facilitating dumping.

In each of the countries included in the present study, the textiles and garment sector, along with some other industries, is protected through the imposition of relatively high tariff rates. There is a trend, however, which began in Jordan and Lebanon, toward reducing such tariffs. However, most textile and garment producers in the countries being considered here consider these tariffs low and believe that customs regulations are onerous. Government policy has changed slightly in the past few years in Jordan. Changes have been proposed to the law, requiring rationalization of the system regulating customs fines. A new regulation has also been suggested which would relieve importers of the obligation of making a detailed declaration about the intended use of goods upon importation. It has been proposed as well that the Customs Department develop an import/export guidebook.

Import duties on raw materials and inputs substantially increase the cost of production to the exporters in need of them. In Jordan, customs duties are imposed on imports of yarn and fabric, even though such products, especially yarn, are not produced in the local market. Indeed, some firms in the country complain about the heavy customs duties imposed on such products, especially with regard to the imports of fabric that supplies the growing garment industry. The country imposes heavy customs duties on some kinds of fabrics, which perhaps have a domestic substitute, with the overall rate averaging around 30% (see table 1). For example, one underwear manufacturing facility was able to export, but not to sell its products in the local market, owing to the prohibitively high duties imposed on some raw materials.

Elsewhere, the imposition of customs duties on inputs of materials comprises part of the Government's protection policy with regard to local industry. In the Syrian Arab Republic, basic duties are imposed on imports of inputs for the textiles and garment industry. Industrialists complain of the heavy customs duties on raw materials, which are 19% for woolen thread and 71% for cotton thread (see table 1). These high rates significantly affect the production cost, since the exporter is forced to import thread because of the poor quality of the local product. Other tariffs include that on velvet thread, which can be up to 47%, despite the fact that such thread is not produced locally. The tariff on imported textiles is up to 47% and on imported needlework is 71%. These duties increase costs and restrict the ability of the Syrian exporter to compete. In Lebanon, customs duties are imposed on imported inputs, but the level of some of these duties is relatively low. Such duties are between 7% and 15% on accessories, 3% on dyes and other chemicals, 5% on waste fibres and 18% on packaging materials (see table 1).

Lebanon places few restrictions on imports of textiles and garments. Duties on imports vary from 10% for yarn and 15% for fabric to a maximum of 25% for blankets (see table 1). Nevertheless, garment manufacturers complain that the structure of customs duties on textiles and garments has an adverse effect on local production and encourages imported products. One yarn manufacturer protested the lack of customs protection (yarn is not protected because it is considered a raw material for textile producers). Duties are low compared with those of neighbouring countries.

TABLE 1. TARIFFS APPLIED ON IMPORTS OF TEXTILES AND GARMENTS IN SELECTED ESCWA MEMBER COUNTRIES
(Percentage)

Product	Jordan[a/]	Lebanon	Syrian Arab Republic
Fibre	...	...	...
Cotton lint	...	...	...
Yarn	5	5-10	...
Woolen thread	...	...	19
Cotton thread	...	...	71
Velvet thread	...	...	47
Dyes and other Chemicals	...	3	...
Waste fibre	...	5	...
Packaging Materials	...	18	...
Fabrics	30	15	7-47
Needlework	...	...	71
Accessories	...	7-15	...
Made-up articles	...	...	...
Garments	50[b/]	25-30[c/]	29-102

Source: ESCWA, based on information collected from the field.

Note: Three dots (...) mean that data were not reported.

a/ There is an additional 10% sales tax on imported products, but domestic products are exempt.
b/ Reduced to 40% in 1997.
c/ Recently reduced to 20%.

The tariff rates in the textiles and garment industry applied in these countries are typical of the tariff structures for other industries. The rates are applied in an ascending manner to imports of textiles and garments, with the rates lowest on raw materials and highest on finished garments. Thus, in all of the countries under review, protection policy is the most stringent in the garment industry. Duties are highest in the Syrian Arab Republic, with a peak tariff of 102% (see table 1).

Jordan and Lebanon have recently taken steps to reduce their tariffs on garment imports by 20% to 40%. In line with the Jordanian Government's efforts to relax restrictions and promote free trade, tariffs on raw materials were recently reduced and in some cases eliminated (for example, precut lining is exempt from customs duties). Jordan is in the process of acceding to the WTO and is engaged in negotiations to conclude an Association Agreement with the European Union. If this is combined with other regional preferential arrangements with Arab countries, it will help dismantle barriers against Jordanian exports of textiles and garments and would thus create new opportunities for future expansion. In

Lebanon, customs duties on ready-made garments were reduced on 1 January 1997 from 30% to 20%.

(b) *Export promotion*

In general, the attempts in the countries under review to pursue policies to promote exports remain confined to the application of specific mechanisms such as tax breaks or the temporary entry of raw materials (the duty drawback system). Although these measures have helped to expand exports in textiles and garments, the expansion has been limited in scope. Many exporters find that such mechanisms involve so many bureaucratic complications that it is not worthwhile to try to benefit from the provisions available to them. In the Syrian Arab Republic, for example, controls over dealings in foreign exchange, though slightly relaxed, continue to hinder expansion in the sector; the private exporter can keep only 75% of returns on exports in hard currency and is obliged to sell the rest to the State.

Tax breaks are applied in Jordan. Income taxes on exports were abolished in 1994, a benefit that was particularly important to some textile and garment businesses. Some firms have increased or intend to increase their production of exports and their export-related investment. A number of firms have reported that, as a result of this incentive, they have increased exports by as much as 25%.

Temporary entry of raw materials is theoretically permitted in all countries. However, the many procedures and controls associated with temporary admission and duty drawback discourage manufacturers from using this system. In Lebanon, some firms prefer to pay duties rather than bring raw materials in under temporary entry, which in practical terms turns out to be more expensive than paying duties. Jordan's temporary admission provisions and duty drawback system is also seen as problematic. For example, when excess raw material that has been imported under temporary admission provisions for the production of an item for export is returned to the supplier, a 2% re-export charge is levied by Jordanian customs. Another problem with the system is that importation requires a financial guarantee. These are expensive and serve as a disincentive to exporters.

II. COMPETITIVENESS OF THE SECTOR IN LOCAL AND EXPORT MARKETS

Aggressive competition is expected to prevail both in the domestic markets of the countries of the region and in international markets. This competitive environment will be the result of trade liberalization resulting from the application of WTO rules, the implementation of the proposed Association Agreements with the European Union, the expected conclusion of agreements with other major importing countries such as the United States and Canada, and the establishment of regional arrangements within the Middle East.

The competitiveness of the textiles and garment sectors of the countries being considered by the present study varies from one country to another. Competitiveness can be assessed from the disaggregated exports of each country, which generally indicate where domestic production activities display international competitiveness. It can also be deduced

from the country's imports, which indicate where it lacks such competitiveness. When exports and imports of specific products are examined together, a positive trade balance may reflect a comparative advantage in international trade. Caution should be exercised in this regard, however, as calculations must take into consideration any domestic restrictions on imports and exports such as tariffs, quotas, bans, indirect taxes and subsidies, which may distort the analysis.

The following pages focus on the main factors influencing the competitiveness of the textiles and garment industry in the ESCWA member countries under review and takes a closer look at competitiveness in the domestic and the export markets.

A. FACTORS AFFECTING COMPETITIVENESS

The factors that influence the competitiveness of an industry in any given country include the following: the quality and cost of the labour available; the country's endowment of raw materials and inputs; the technology applied; the range and quality of infrastructure and utilities; the quality of transport services available; and transaction costs.

1. *Labour*

In the textiles and garment industry—in particular in the more labour-intensive garment industry—labour productivity and cost are important factors in determining competitiveness. In this respect, the ESCWA member countries that are under study enjoy relatively competitive wage levels. Wages and salaries in the textiles and garment sector amounted in 1994 to $1,168 per worker in Jordan. Lebanon has the highest wages among the three ESCWA members, with wage levels in the industry averaging around $2,888 (see table 2).

ESCWA estimates show that the Syrian Arab Republic averages $6 in unit labour cost per $100 of output in the textiles and garment industry. Jordan averages $8 for textile production and $11 for garment production. Unit labour costs are higher in Lebanon—$13 and $16 for each $100 of output in textiles and garments respectively (see table 2).

These figures suggest that there is ample room for the countries under review to benefit from the wage competitiveness they enjoy. If this were combined with improved quality in production, these countries would probably be able to improve their current shares of world exports of textiles and garments. Indeed, prospects for expansion will greatly be influenced by recent developments in international and regional markets, starting with the implementation of the results of the Uruguay Round agreements, the proposed Euro-Mediterranean Association Agreements and other proposed regional agreements. These developments, if properly exploited, may open up new trade opportunities that could help expand the flow of exports, which would eventually help boost investments and output in these countries.

A closer look at the labour situation in these countries reveals the need to improve conditions in the labour market, in particular with regard to upgrading labour productivity. More highly qualified skilled labour is required, which means that better training programmes and facilities are needed. Worker enthusiasm needs to be engendered; wages in the public sector of these countries need to be improved, and better managerial skills must be developed. The following paragraphs detail the results of field work undertaken in which a number of industrial firms in the textiles and garment sector were surveyed, to shed light on the current situation of the labour market and the specific problems facing it in each country.

In Jordan, the productivity of labour is low. Poor training, coupled with possible lack of employee enthusiasm or ability to learn, was highlighted by many firms as a major challenge. Several firms cited absenteeism, as well as lack of seriousness and interest on the part of employees, as a problem. According to many firms, it is especially difficult to find qualified people; firms have tried to solve this problem through in-house or other private training. Jordan's centre for vocational training, a State body, was considered of no help in solving problems associated with labour skills. The general lack of trained staff translates into heavy dependence on foreign labour, in particular workers from Egypt and the Syrian Arab Republic, which together supply 15% to 25% of total personnel.

TABLE 2. UNIT LABOUR COST IN TEXTILES AND GARMENTS FOR SELECTED ESCWA MEMBERS, 1994

		Annual wages per worker (US dollars)	Annual productivity per worker (US dollars)	Unit labour cost (percentage)
Jordan	Total	1 168	12 797	9
	Textiles	1 670	22 215	8
	Garments	936	8 449	11
Lebanon	Total	2 888	19 044	15
	Textiles	3 082	24 203	13
	Garments	2 837	17 707	16
Syrian Arab Republic	Total	1 320	20 475	6
	Textiles	..	..	..
	Garments	..	..	..

Source: Based on data computed from ESCWA and the Arab Industrial Development and Mining Organization (AIDMO), *Bulletin of Industrial Statistics for the Arab Countries, 1985-1995*, No. 3 (E/ESCWA/STAT/1997/4).

Note: Two dots (..) indicate that data are not reported separately.

Lebanon's relatively high wages ($250 to $300 per month for a semi-skilled worker) seriously affect the competitiveness of the labour-intensive textiles and garment sector. Moreover, the employer is responsible for paying social security charges. Lack of adequate training was the major complaint, and firms noted that it was especially difficult to find

qualified people at the technical and managerial levels. Some firms try to solve this problem through in-house training.

In the Syrian Arab Republic, the average monthly income for public sector employees is 300 Syrian pounds (LS)—which amounts to around $60 at the unofficial exchange rate—for an unskilled worker and LS 5,000 ($100) for a semi-skilled worker; a technical worker receives LS 10,000 ($200) and a master technician earns LS 15,000-20,000 ($300 to $400), whereas an engineer receives LS 15,000-30,000 ($300 to $600). Salaries in the private sector are higher.

In the State companies, part of the labour force is illiterate and untrained. In addition, the payrolls of State enterprises include considerable numbers of elderly and infirm workers. Employment in Government-owned enterprises is characterized by high turnover rates, which makes it difficult for companies to train staff. The low salaries play a role in limiting initiative and creativity and in pushing staff to seek higher-paying jobs. A large proportion of workers (almost half) have a second job, often in agriculture, which means that they are absent during harvest season. This situation leads to the movement of trained, experienced workers from the public to the private sector, whether inside the Syrian Arab Republic or to neighbouring countries which pay higher wages. In some cases, low salaries undermine the incentive to work at all. One State weaving corporation was unable to meet its demand for workers in 1995; it managed to recruit no more than 84% of its labour needs in spite of the prevalence of unemployment in the Syrian Arab Republic. Another weaving firm recently tried to recruit workers for its production line, according to the government scale, offering a monthly salary of LS 2,200 in addition to bonuses, allowances, medical insurance, uniforms and transportation. Despite the "favourable" conditions offered, this company was unable to find the staff needed for production.

2. *Material inputs*

Endowments of material inputs, or the ease with which inputs can be obtained, is another important factor of competitiveness in this industry. Inputs for the textiles and garment industry consist of a wide range of raw materials and products, including fibre and waste fibre, yarn and thread (in different assortments and including natural and man-made fibres), dye stuffs and chemicals, accessories such as elastic, buttons and needles (to mention only a few items), and packaging materials.

The Syrian Arab Republic is the only country, among the three countries under review, that has a material input base, basically cotton, and an industry that supplies the cotton yarn and fabrics necessary for the garment industry. This country also depends on exports of such inputs, which represent a significant part of the local cotton production; a few firms in other countries in the region obtain their inputs from the Syrian Arab Republic. The principle inputs demanded are cotton, cotton yarn and accessories, with the Syrian Arab Republic becoming an important supplier of the last-named type of product.

It is well known that firms in the region tend to prefer foreign inputs (that is, from outside the region), even when a major input is locally produced. The poor quality and higher prices of local products, as well as the frequent delays in local product delivery, account for such preferences. Not all producers, however, can afford to import their needs from outside the country—and this is especially true of small firms—if the required products are locally available or available in a neighbouring country. Such businesses purchase their materials in small quantities, which are more difficult and more costly to import than large quantities, in particular when they are being brought in from outside the region. Many businesses therefore purchase their inputs locally or from a neighbouring country. In this situation, costs of raw materials are much higher for small firms than for their larger counterparts, and in addition, the quality of the products may not meet international standards. This greatly affects the competitiveness of such firms, of which there are many, despite the fact that a number of them are quite competitive with regard to the production process itself.

Most producers of textiles and garments in the region resort to importing a large proportion of their needs, in particular fabrics and synthetic raw materials, from Western Europe. Other important suppliers of inputs to the region's producers are China and other Far Eastern countries.

The poor quality of thread in the Syrian Arab Republic is attributed by industrialists in the private sector to the use of old machines, among other things. However, Syrian manufacturers have little choice but to use local rather than imported thread, because they can place small orders and save on cost and time. The raw materials used by this industry, including cotton, wool and silk, are almost all domestic. Approximately 40% of locally produced cotton is used in the textiles industry, and the other 60% is exported. The latter is in effect a massive reserve for a future expansion in this industry.

The general lack of raw materials in Jordan and Lebanon forces producers in these countries to import many essential goods. In Lebanon, although yarn is locally produced, it is too expensive, according to some producers, since it is priced 30% to 40% higher than foreign products and is of lower quality than imported yarn. In Jordan, garment firms in general import 30% to 55% of their inputs.

3. *Technology and machinery*

In the textiles and garment industry, as in other industries, competitiveness depends in part on the level of technology used, the quality of maintenance service available and the ability to obtain needed spare parts.

The installed machinery in the countries under study is generally old, especially in the garment industry. The industry in Lebanon and the Syrian Arab Republic, for example, has many obsolete units in use. Some of the machinery in Lebanon, which endured a political crisis that lasted from 1974 to 1990, was acquired 25 years ago (although these machines have not been used as intensively as their age would suggest). In the Syrian Arab Republic, the machines used in some State factories date back to the 1960s and 1970s.

Garment production lines and fabric printing machines in the private sector are more modern, but this has created incompatibility between the weaving production lines and the textile lines. Sometimes, State firms produce low-quality input materials: for example, 90% of their thread output does not meet international standards. In the Syrian Arab Republic this highly labour-intensive industry generally uses simple technology and has flexible volumes of production units. The private sector is equipped with 20,000 looms and 4,000 knitting machines, mainly concentrated in and around Damascus and Aleppo.

Establishing factories that are more modern would partly solve the problems of quality and productivity. Special attention has recently been paid in the Syrian Arab Republic to refurbishing old machines, along with setting up new plants such as the State textile factory in Latakia, which is now in the final stages of preparation before operation begins. Although the modern equipment of this factory will greatly increase Syrian textile production, the country's overall problem will not be solved quickly, since allocations for refurbishing old production lines are not sufficient. Similarly, in Lebanon industrial firms suffer from financial constraints that make it difficult for the textiles and garment firms to replace their old machines.

The main suppliers of equipment are Germany, Italy, Japan, Hong Kong and Taiwan Province of China, with France, the United Kingdom of Great Britain and Northern Ireland and the United States being less important. Some of the new machines in Jordanian enterprises are computerized and automatic. The larger firms formerly received know-how and technical assistance from several international manufacturers. One of the firms interviewed is recruiting the software personnel needed for design, production, cutting and control of operations.

Poor maintenance and lack of professional technical staff in State companies in the Syrian Arab Republic are another reason for the low quality of the textiles produced and for the low capacity utilization and the many mechanical failures. The shortage of technical staff, such as engineers specialized in weaving, textiles and dyes, and also of skilled, experienced workers, makes it impossible to achieve acceptable standards of quality control in the production process in these countries.

Most of the industries in these countries operate at less than full capacity. The main reasons for the low capacity utilization are related to internal problems such as the unavailability of major inputs, poor maintenance of machinery and equipment, inadequate supervision, negligence and lack of incentives, or to problems external to the firm such as low demand. The limited size of the local market and the current economic recession, in particular in the smaller economies of Jordan and Lebanon, are placing the garment industry in a difficult situation. In Jordan many firms are operating at less than 50% of production capacity, partly owing to the limited size of the local market, coupled with the current recession and the difficulty in gaining access to export markets.

Low labour productivity is a problem facing most firms in the countries under review. Some medium- and large-scale producers in textiles and garments believe that more automation and lower labour-intensity could possibly overcome this problem. However,

caution should be exercised in advocating the adoption of more highly advanced technology, given the prevailing underutilization of capacity in most firms (except perhaps in the few large enterprises and in those businesses which have established subcontracting arrangements or joint ventures with foreign companies) and given concerns regarding spare parts.

4. *Infrastructure and utilities*

One of the problems facing the textiles and garment industry in Jordan, Lebanon and the Syrian Arab Republic is the lack of adequate supporting and related industries (such as spinning mills, weaving mills, machinery plants, accessory factories) and services (design centres, R&D institutions) which could support a robust garment industry and which would give more flexibility to producers, who would be able to produce a variety of models, change models quickly and produce small quantities of each model. The current situation deprives local producers of the opportunity to produce at lower costs and to improve the quality of their product.

Competitiveness is also influenced by the availability, quality and flow of utility services. In many countries of the region, power cuts are one of the problems facing industry and are a concern of most firms in textiles and garments. In the extreme case of Lebanon, the cost of power is significantly greater than in neighbouring countries. Electricity cuts were a chronic feature all through the period of civil strife, and many of the firms had to have their own power generators. Electricity service still does not function dependably and is seen by industrial firms as extremely expensive. This has forced many companies to continue to depend on their own generators, a practice which of course adds to production costs. In one case, a spinning factory was compelled to stop its activity because of the high costs of electric power.

In cases where industrial estates have been established, such as in Jordan, the textiles and garment producer is now forced to pay for electrical transformers; in the past these were provided by the estate itself. Furthermore, such firms have to build their own water-treatment facilities, as the industrial estate does not have adequate waste-water treatment plants. These two factors drive up costs for textile and garment firms.

5. *Transaction costs*

Transaction costs have recently been recognized by economists as an important factor in the performance of an economy, in the form that its comparative advantage takes, and in its competitiveness in the international market.[2] Transaction costs for businesses relate to the establishment of rules and regulations, the enforcement of contracts, and other constraints defined as institutional constraints; these deal with questions relating, for example, to certainty in policy decisions, tax administration, enforcement of regulations,

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2 ESCWA, *Industrial Strategies and Policies in the ESCWA Region within the Context of a Changing International and Regional Environment* (E/ESCWA/ID/1995/7), 1996.

access to finance, access to intermediate inputs and labour regulations.[3]

Transaction costs are high in most countries in the area. Transport/port formalities and extra costs relating to commissions, tips and bribes are major problems facing exporters in some countries, in particular Lebanon. Firms complain that transportation in Lebanon is considerably more expensive than in other countries. In one case, 68% of the transport costs of moving goods from a factory in Lebanon to Italy consisted of "carrying the merchandise from the factory to the ship". Firms deal with agents and incur extra costs to avoid cumbersome transport procedures.

The removal of these obstacles and the associated reduction in transaction costs would significantly improve the investment climate in these countries and stimulate both domestic and foreign direct investment not only in textiles but in all production activities. Furthermore, such measures would reduce costs and would improve the international competitiveness of the sector with trade partners throughout the world.

The Syrian Arab Republic will need to modernize its economy, update its economic infrastructure—which in particular involves updating and restructuring its industries—as well as improve non-traded services in general and adopt the basic rules of free competition, in particular with respect to competition-distorting State intervention, if it is to gain and maintain access to external markets for textiles. Implementing these measures would considerably reduce transaction costs and improve the incentives system by raising the effective rates of protection for various activities.[4]

B. COMPETITIVENESS IN THE LOCAL MARKET

The changes taking place in the regional and international markets mean that textile and garment producers in the countries under review will face increasingly aggressive competition in the export market as well as in their own domestic markets. Given the relatively high level of protection these local industries have long enjoyed, the trend in trade liberalization and the eventual reduction of tariffs on imports of textiles and garments will pose great challenges.

The textiles and garment industry of Lebanon, and to a lesser extent Jordan, has

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[3] Ahmed Galal, "Can Egypt grow without institutional reform? If not, which institutions matter most?", *Selected Proceedings of the Expert Group Meeting on Industrial Strategies and Policies [and] Managerial and Entrepreneurial Skills under Conditions of Global and Regional Change*, co-sponsored by ESCWA, Friedrich Ebert Stiftung, and the Economic Research Forum for the Arab Countries, Iran and Turkey, held in Manama from 20 to 23 November 1995, pp. 387-410.

[4] See B. Hoekman and S. Djankov, "An Egypt-EU trade agreement: issues and policy options" (ECA/MNA Technical Department, the World Bank, March 1995), p. 8. See also Chang Po Yang, "Maximizing the benefits from free trade with the European Union", World Bank Resident Mission in Egypt, April 1996.

already been facing foreign competition in the domestic market. Foreign competition is seen as a serious problem by most firms. Inexpensive products from Turkey and the Far East, in particular China, India and Thailand, are being dumped on the domestic markets of ESCWA member countries. Imported second-hand garments also pose a threat for local firms, in particular in Jordan, as they are being sold as new items. In addition, Jordanian manufacturers fear that Israeli firms with large inventories and an attractive variety of samples may flood the local market with low-priced products, since Israeli garments in Jordan enjoy a reduction of 15% in the customs duties charged on imported products.

The market is small in the countries under review here, and the limited purchasing power of the population, in the light of the current recession and high rates of unemployment, forces people to buy the cheapest products available (which most often means low-quality imports). The high production costs plaguing local producers are making it harder to face foreign competition. In Lebanon, the relatively low customs duties and the consumer preference for foreign products, in particular Italian and French products, renders the situation even more grave for local producers.

Some producers in the countries under review are able to compete with European producers in the high-quality product niche of the local markets. In fact the successful firms in these countries, in particular Jordan, are those which are producing a well-known brand under foreign licence or are in joint venture arrangements with a foreign firm.

The high levels of protection enjoyed by the garment industry in the Syrian Arab Republic, along with the relatively good quality and low prices of local products, place local industry in a competitive position *vis-à-vis* foreign products. The public sector garment industry caters to the needs of the average- and lower-income groups.

The fact that the Government of the Syrian Arab Republic has removed tariffs on intermediate inputs and machinery from various sources is likely to reduce production costs. Although the local market is nominally sheltered from foreign competition by bans on garment imports, smuggling across borders has partially exposed domestic production to foreign competition.

C. COMPETITIVENESS IN EXPORT MARKETS

Competitiveness in export markets appears to be the main challenge for the countries under review. Few firms in these countries are able to export at competitive prices or at the required quality standards, and in several cases, in Jordan for example, firms that are able to do so produce under licensing arrangements with foreign companies. Jordan is a new entrant to the export market, and it lacks the international reputation that the Syrian Arab Republic has built up in cotton and cotton textiles and garments. Weakness in marketing, uncompetitive prices, lack of finance, and difficulty in meeting international standards, including ISO 9000, are several of the reasons that some ESCWA members, including the countries under study here, lack competitiveness in the export market.

It is the private sector that is most involved in exports; exports of the public sector

are limited, as in the case of the Syrian Arab Republic. State-owned companies generally lack information on international markets, and they wait for buyers to approach them. This inability of State enterprises to export represents a lost opportunity. One State enterprise in the Syrian Arab Republic achieved only 8% of its export target in 1996. The result is surplus stock and the costs associated with surplus stock, leading to underutilization of production capacity. There are some exceptions, however, where State-owned firms have achieved good export performance, such as the underwear manufacturing company in Damascus. It employs 1,200 workers and technicians, has installed modern, new machinery and produces good-quality cotton underwear. It exports its production to Belgium, Germany and Greece. The thread manufacturing facility in Hamah is another example of a State enterprise which performs at a satisfactory level.

The major export markets of most of the firms in the countries under consideration are Europe, the United States and, in the case of Jordan and Lebanon, the Middle East. Some products, in particular those coming from Jordan, can enter the United States market without quota restrictions. The European Union gives preferential treatment to imports from the ESCWA members under review and allows textile and garment products to enter duty-free, provided they use local or European fabric and provided that the products have been manufactured locally. Among the emerging markets for exports are Russia and Ukraine.

Exports to neighbouring Arab countries do not face serious competition from other Arab products, partly because inter-Arab trade is exempt from customs duties. However, in many cases, Arab importers prefer to buy from Europe rather than from a higher-standard Arab company. The problem of consumer confidence in Arab products exists even for successful exporters. For Jordanian producers, for example, gaining access to markets in some Arab countries is proving to be difficult, in particular after the Gulf crisis and Jordan's loss of its market in Iraq (the conclusion of the trade agreements with Israel does nothing to help matters in this regard). Access of Jordanian products to Israel and to the occupied territories is also limited. According to the trade agreement between Jordan and Israel, the latter will give Jordanian garments a 20% tariff reduction; the Israeli tariff rate is currently 72% on imported garments, so the tariff on Jordanian garments will be reduced to 57.6%. This rate obviously limits demand for Jordanian garments in Israel when compared with European and American products, which enjoy free entry into Israel.

Traditional exporters, such as the Lebanese firms, have been able to establish and maintain their networks in a variety of ways that confirm the strength of the Lebanese private sector. The continuing presence of part of the business community during the civil war strengthened the position of Lebanese networks with foreign markets, and the depreciation of the Lebanese pound during the war gave a boost to garment exports by making prices more competitive. The Arab networks of Lebanon were also important, as it was through their networks with Arab markets that the more successful firms were able to keep their pre-war markets and in some cases expand them. The private sector exporters in the Syrian Arab Republic were also successful in establishing and maintaining export markets.

Subcontracting is one of the approaches adopted by exporters to overcome marketing problems. Many firms made unsuccessful attempts at exporting directly, and in

some cases the failure induced them to enter into subcontracting arrangements or joint ventures. This was the case with several Jordanian companies and with some, but not many Syrian and Lebanese companies.

Subcontracting arrangements or joint ventures with foreign companies are rare in the Syrian Arab Republic. One private firm that has been manufacturing ladies' underwear for more than 50 years currently has a three-year subcontracting agreement with a Spanish company to produce the same goods for export; this contract accounts for 12% of the Syrian firm's total production. This firm is considered to be the best company in the Syrian Arab Republic for manufacturing ladies' underwear, and its exported production is now comparable to the top-quality European product. The company exports around 45% of its production to the Arab world (including Jordan, Kuwait, Lebanon and Saudi Arabia). It also exports to European countries (including Belgium, the Czech Republic, Germany, Spain and Slovakia).

Several companies in Jordan are currently producing under subcontracting arrangements or in joint ventures with Israeli firms, including Horizon Company, Amman Moda and Saltex Company.

Horizon Company was established in November 1995, and production started in March 1996. The company, which has 140 machines and employs between 40 and 100 workers (depending on the production level), specializes in the production of men's shirts. At first, shirts were exported directly to the United States market; the fabric and other inputs were imported from Hong Kong. After less than one year of operation, the company shifted almost completely (that is, more than 90%) to subcontracting with Israel. There are a number of reasons that explain the shift made by the company: difficulty in competing in the international market; the complexity of government procedures in the use of temporary admission and duty drawback, as indicated above; and the fact that large amounts of the company's capital would be "frozen" in the bank, in particular the amount required by the Customs Department (because of the import of raw materials duty-free).

Another case is that of Amman Moda, established in 1979. According to the manager, it was the first company in Jordan to export to the American market (in 1983). The company sells most of its production in the export market (the United States and Europe), with only 15% to 20% going to the local market. It has a large production capacity, with around 300 machines. Before the Gulf crisis, the company was operating at a high capacity, with 627 workers, 12 hours per day. Today, it operates at 50% of its production capacity, with 225 workers, 8 hours per day. As a result of the Gulf crisis, exports virtually ceased, to be resumed only a year ago. The company produces garments for children (1-14 years) and ladies', as well as men's shirts. It is also turning to subcontracting arrangements with Israeli firms.

The third company is Saltex, established in 1991 as a joint venture (50%-50%) with an American company. The American company secured the needed fabric from Pakistan and also sold the production (T-shirts) in the United States market. However, the Jordanian company faced difficulties in competing in the foreign market. In 1996, Century Investment Group bought Saltex and began to operate under subcontracting arrangements, first with the Israeli firm Lodzia, and from 1997 under joint venture with the Israeli company Delta.

The main textiles and garment exports in the countries under consideration include T-shirts, sportswear and items that are in particular demand by Arab consumers (in the case of firms that export to Arab markets). In addition, industrial fabrics and accessories are exported by Lebanon and the Syrian Arab Republic; a variety of woven textiles, as well as children's, women's and men's wear, cotton fabrics and cotton waste are exported by the Syrian Arab Republic. Most producers in the countries under review have relatively small output and a narrow range of products. With regard to standardized products in large quantities, most of the exporting firms find it difficult to compete with products from Egypt, Turkey and the Far East. Perhaps most producers will make a strategic choice whereby they would produce high-quality, differentiated garments which focus on design, style and quality rather than on low price, thus enabling them to target certain segments of the local, regional and world markets.

With regard to Jordan, Lebanon and the Syrian Arab Republic, the major competitors in the export markets are China, the Republic of Korea, Taiwan Province of China and other countries and areas in the Far East and Turkey as well as in the ESCWA region. For cotton producers such as the Syrian Arab Republic, the major competitors are China, India, Pakistan and Turkey for cotton textiles, and Turkey and South-East Asia for garments. These competitors produce quality goods, at lower prices than most of the countries of the region. They also package and promote their products more effectively.

Part V

INDUSTRY RELATIONS IN ELECTRONICS AND SOFTWARE

THE IMPACT OF THE PEACE PROCESS ON THE ELECTRONICS INDUSTRIES IN THE REGION

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I. OVERVIEW: SECTOR PROFILE[1]

Electronic products, in the broad meaning of the term, are versatile and widely diffused and are to an increasing extent becoming essential parts and components of products and systems used in various production sectors and services. The electronic value added of products and components varies from a few per cent to more than 90%, with a global trend toward an ever-increasing relative value of these electronic parts and components and towards continuous innovations to produce better-performing and/or cheaper electronic products and components.

The growing importance of application-specific electronic products is directly linked to the wide diffusion of electronic components and subsystems into more and more products, processes and services, leading to what has come to be known as the "Electronics Age". This diffusion takes one of the following forms:

(a) Insertion of an electronics component into an existing product (in the automotive and aerospace industries, for example);

(b) Transformation of a product (for instance from an electro-mechanical switching telephone exchange into a completely digital electronic exchange);

(c) Devising an entirely new product or system (robots, video recorders, for example).

The integration of electronic parts and components into other products, processes and services aims at one or more of the following objectives:

(a) Enhancing the performance of a product and/or improving end-user satisfaction;

(b) Adding functions or drastically changing the original functions of a product or service (for example, sewing machines);

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[1] The issues considered here have been dealt with in detail since the early 1980s in a large number of UNIDO publications, including the review periodical *Information Technology*.

(c) Reducing cost, improving quality and enhancing the production process (for example, automation and controls).

In terms of consumption levels, electronic products may be classified as follows:

(a) Mass consumption products, such as consumer electronics, telecommunications equipment, computers and office equipment, and military electronics;

(b) Smaller-volume consumption products, such as industrial electronics (including instrumentation, controls, automation systems), medical electronics, robots, automotive and aerospace electronics, and education-oriented electronics;

(c) Application-specific products or components customized to carry out specific functions in various production and services sectors;

(d) Components and integrated circuits (ICs).

In all electronic products—components, systems and integrated circuits—the real value added is becoming more embedded in the design itself. Automation techniques are being developed to translate a functional design into the steps of fabricating the product. A universal trend emerged during the 1980s to separate the design phase (the knowledge- and expertise-intensive phase) undertaken in stand-alone design centres (which combine design with research and development) from the actual fabrication usually undertaken in stand-alone factories, or "silicon foundries", facilities that are usually highly automated and capital-intensive.

The design and fabrication of standard high-level subsystems (microprocessors and memories, for example) are monopolized to a great extent by the large transnational corporations (TNCs) based in Japan, the United States and Europe and to a lesser extent in the newly industrializing countries (NICs). The design of selected application-specific systems with very high value added is being carried out in many countries endowed with high-level expertise and highly skilled human resources. The design of application-specific integrated circuits (ASICs) and of special-application products using off-the-shelf components and subsystems and addressing high-value export market niches represents a significant opportunity for many small countries that cannot afford the cheap-labour mass-production of consumer electronics, or the extremely expensive R&D needed to cope with innovations to produce state-of-the-art systems and products.

It should be noted that most of the value added of these special-application products is in the software, which adapts the well-known functions and characteristics of the off-the-shelf components used, to provide a suitable response to a specific need of end-users.

Software products may be classified into the following categories:

(a) Embedded software, integrated into the product or system;

(b) Customized software, designed for specific functions of existing equipment or to respond to the stated needs of a customer's system;

(c) Stand-alone packages, sold to the public, to perform functions commonly needed.

The term "software industry" includes all the above categories, but most of the time it is meant to indicate the production of software packages sold off the shelf. Embedded software is considered part of the design value added. Customized software is looked upon as software development (a service), rather than software production (an industry).

The electronics industry—software and hardware—is among the very few rapidly growing high value added industries at the end of the twentieth century. The yearly global production of this industry already amounts to more than $1,000 billion, and the industry is maintaining high growth rates (5%-10%) even during global economic recessions. Software turnover crossed the $100 billion threshold in the 1980s and is growing at even faster rates than those for hardware, amounting to more than 80% of the value added of some systems and subsystems, in particular for ASIC and niche-market products.

The electronics industry as a whole can be described as knowledge-intensive and skill-intensive, in particular in regard to R&D and the design of products, components and production processes. Moreover, this industry is changing rapidly, with innovations introduced at such a fast rate that the product life cycle is reduced to a few years or even less, raising tremendously the cost of design and R&D. In fact, many companies allocate more than 15% of sales turnover to R&D and request their employees to allocate up to 20% of their time to training, to cope with innovations in the field.

The electronics industry may also be described as a capital-intensive industry, mostly because of the high cost of R&D and design, and because large-scale electronics production is capital-intensive, requiring large investments in equipment for large-scale production processes, as well as in marketing and after-sales services.

Hardware production (which does not include the design of products or processes) may be qualified as more capital-intensive and less knowledge-intensive. Component and IC fabrication takes place in highly automated, highly capital-intensive factories and silicon foundries, whereas assembly of systems is carried out on large-scale assembly lines that can be operated by workers who are less skilled and less educated but who have a certain level of technical education and/or industrial experience.

The design and the software development aspects of the industry are completely knowledge-intensive. With only limited equipment and resources needed, R&D, design and software development represent pure human effort, skills and knowledge. Thus, the R&D and design centres, as well as the software development houses, can be considered "human-intensive", but with a special qualification with regard to the skill of the labour involved. The design and R&D centres and the software development houses are operated by highly qualified and skilled human resources, and thus, though these organizations may need little

investment in equipment, they do require sizeable operational capital, to sustain for long-enough periods the human expertise working to come up with commercially successful products, in particular considering the facts of the harsh global competition now in force and the short life cycle of any successful product in the market.

Competent designers and software developers are in high demand globally and are viewed as scarce and expensive commodities, in particular in industrialized countries, where software engineers are among the highest paid employees. Thus, owing to this dual nature of the design centres and of the software houses—their being at the same time human-intensive and knowledge-intensive—many industrialized countries have resorted to design and software expertise "support" from developing countries, where such expertise is cheaper, and where the knowledge requirements may be brought up to the requested quality, level and reliability through continuous training and direct on-line supervision and quality control.

Design and software development "subcontracting" is offering attractive opportunities for developing countries that are capable of providing the needed pool of design and software development expertise, at reasonable prices, and that possess the communications infrastructure needed for on-line contacts with the sophisticated clients that are being served in industrialized countries.

One important feature of the electronics industry worldwide is the direct attention that most Governments pay it. Because of the growing importance of electronics as well as its pervasive nature and diffusion into all economic and social sectors, most Governments throughout the world have formulated and implemented special programmes to assist their national electronics industries. In most industrialized countries the support takes any of the following aspects:

(a) Partial financing of the growing cost of R&D (Japan, the United States and Europe);

(b) Preferential treatment in government purchasing, in particular for defence items;

(c) Strong support in negotiating trade agreements with foreign countries, to secure a minimum trade balance for electronic items (Japan and the United States, for example);

(d) Devising special support schemes, incentives and support institutions, in particular venture capital agencies, for innovative entrepreneurs who are starting a business;

(e) Stressing related sciences and technologies in the education system at all levels.

In many developing countries, in particular in the NICs, besides the above-mentioned forms of support, more daring support schemes are provided to national electronics firms, including the following:

(a) Listing electronics industries among the country's "winner industries" in the national development plans, to be given greater support and targeted with more incentive schemes;

(b) Formulating, jointly with the private sector, special financing schemes, including venture capital, to enhance investment in these selected winner industries;

(c) Adjusting the education system at all levels so as to provide the needed local skilled labour and qualified technicians, scientists, engineers and researchers;

(d) Devising special marketing schemes and export networks and incentives, in particular when dealing with industrialized countries with larger absorptive markets;

(e) Entering into special trade relations with countries that can provide more advanced technology and/or into large potential markets, through bilateral agreements or through membership in large regional free-trade areas;

(f) Supporting strategic alliances, at the company and firm level, with the more advanced foreign firms, to exchange comparative advantages and enhance the combined marketing position of the alliance, through joint R&D, subcontracting and division of the production processes.

II. NOTES ON THE ELECTRONICS INDUSTRY IN THE ARAB COUNTRIES[2]

A. BACKGROUND

There are no recent, reliable data giving detailed consumption figures for electronics, software or communications products in the Arab countries. However, a review of the current situation as described in the literature shows that the Arab countries' yearly consumption of these products exceeds several billion dollars,[3] and this does not include

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[2] Much of the information in this section was taken from country and area papers prepared by consultants on the electronics industries in Egypt, Jordan, Lebanon, the Syrian Arab Republic and the area under the Palestinian Authority, which were presented to the Expert Group Meeting on the Impact of the Peace Process on Selected Sectors, co-sponsored by ESCWA, the Friedrich Ebert Foundation, and the Economic Research Forum for the Arab Countries, Iran and Turkey, and held in Amman from 23 to 25 June 1997. The country papers were prepared by: Riad Khoury, Middle East Business Associates (MEBA), Jordan and the Syrian Arab Republic; Team International, Lebanon; Ahmed ElHefnawy and Roshdy ElHadidy, Egypt; and the Development Resource Centre, West Bank and Gaza Strip. They appear in these proceedings.

[3] One study puts the 1992 consumption of electronic products in the Gulf countries alone at $2.9 billion. See Gulf Organization for Industrial Consulting (GOIC), *Taqreer 'an al-Wad' al-Haali lit-Muntajat al-Electroniyya fi Duwal Majlis al-Ta'awun li Duwal al-Khaleej al-Arabiyya* (Report on the status of electronic products in the Gulf Cooperation Council countries) (October 1995).

military electronics. An unpublished 1990 study by DataQuest[4] estimated that in the Arab countries yearly consumption of consumer electronics, communications and office equipment alone would reach more than $4 billion in the year 2000 and would steadily increase. Another study, undertaken in the mid-1980s, estimated demand for control systems,[5] mostly in petroleum-related industries, at more than $1 billion a year and rising steadily. In addition, a review of arms deals by Arab countries shows yearly expenditure on military electronics to be more than several billion dollars.

One important feature of civilian consumption is its concentration in the areas of consumer electronics and communications products—with fast-growing demand for personal computers—and much lower levels of consumption of specialized products, except perhaps for the control systems and instrumentation used in the petroleum-related industries.

Similarly, it can be said that most of the software packages sold in the Arab markets are linked to the traditional (lower) end of technology applications: accounting, personnel and management. Sophisticated embedded software is usually imported with large turnkey projects and systems.[6]

The production of electronics and communications products is very modest in all Arab countries compared with the large consumption volume, with production rarely exceeding a small proportion of the needs of the market.

All Arab electronics production firms have a very narrow product mix and are usually limited to the assembly of a few consumer items, such as televisions and radio/cassette players, with extremely small production of other items. Occasionally, personal computer assembly lines are established in various countries, but most of these have been forced to close after a short period, as they are unable to cope with the demands of this rapidly changing market.

Virtually all of the hardware production facilities in the Arab countries operate under various forms of production contracts, licensing agreements, partnerships or joint ventures with foreign companies, with the latter usually providing (along with the technology

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4 VLSI Technology, Inc., "Techno-economic feasibility study for proposed silicon foundry in Iraq", unpublished study commissioned by the Arab Fund for Economic and Social Development (1990). The study was never completed; a first draft presented in June 1990 included a market survey undertaken by DataQuest of the United States.

5 Arab Petroleum Investments Corp., "A joint venture in process control instrumentation", feasibility study, February 1984.

6 UNIDO, "Silicon foundry and design centres in the Arab region: issues and approaches" (UNIDO/IS.583), December 1985; ESCWA, *Report of the Workshop on Regional Silicon Foundry and Design Centres in the Arab Countries* (E/ESCWA/ID/86/CRP.2), March 1986; and ESCWA, "Assessment of research and development needs in informatics in the Arab countries" (E/ESCWA/ID/86/21/Rev.1), October 1987.

and equipment) the basic design, components and subsystems. Local input is usually less than 30% and is limited to low-tech parts, passive components and mechanical parts.

Arab countries are rapidly expanding and/or upgrading their public communications systems, at rates exceeding 200,000 local lines/year (as in Egypt and Saudi Arabia) through large contracts with giant international companies (AT&T, Ericsson, Siemens, Alcatel, British Telecom and others) at a yearly cost of billions of dollars.

Certain Arab countries have recently opted to include in their contracts for the production of communications equipment the establishment of local assembly lines within the context of joint ventures with the supplier companies (in Algeria, Egypt, Tunisia). However, in these local assembly lines, the design and the active components are invariably provided by the supplier companies, along with the technology and equipment.

A few Arab countries have established assembly lines for PABX systems and other non-intelligent communications equipment (Algeria, Egypt, the Syrian Arab Republic), usually through partnership with foreign companies or under licence from foreign suppliers.[7] In some of the Gulf States, in particular in Saudi Arabia, a few private firms have been assembling selected higher-technology communications and public address products, usually under licence or in partnership with foreign suppliers, with the design, active components and higher-technology subsystems provided by the foreign partner.[8]

It should be stressed again that electronics production in the region never exceeds a low proportion of total consumption and that local value added is also limited both in real value and in technological content.

Software development in the Arab countries may be more promising, considering one very important region-specific characteristic, namely the need to use the Arabic language in most offices and in official communications, and thus the need to develop software systems that can process Arabic.[9]

Major R&D efforts to develop arabized systems—or "arabization"—have been undertaken in the region. However, only a few of the R&D projects on arabization successfully reached the commercialization stage. With a few exceptions, most successfully commercialized arabized packages in the market were developed by TNCs relying heavily on expatriate expertise or occasionally on scarce high-level skills recruited in the region. The

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[7] Riad Khoury, "The higher-technology sector of the Syrian Arab Republic (electronics and computers) in the light of impending regional and international change", and Ahmed ElHefnawy and Roshdy ElHadidy, "The impact of the peace process on the electronics and software industry in Egypt". They appear in these proceedings.

[8] GOIC, *Taqreer 'an al-Wad' al-Haali lil-Muntajat al-Electroniyya.*

[9] E/ESCWA/ID/86/21/Rev.1.

capabilities for developing and producing software in the Arab countries may be summarized as follows:

(a) All non-arabized packages are imported. These represent a large segment of the market. Some may have been slightly modified to suit local needs;

(b) A large portion of arabized packages are also imported, having been developed by expatriates or by nationals recruited by foreign companies;

(c) Al-Alamiah (Sakhr)[10] is a pan-Arab company that has been producing locally developed arabized packages since the mid-1980s, with production sites in Egypt, Kuwait and Saudi Arabia. This company holds the largest share of the market for locally produced arabized software packages, covering such areas as word processing, educational software, and Islamic laws and practices;

(d) Most semi-customized software programmes are adapted from imported packages, with minor modifications. A few of these packages have been "localized", to suit local culture and tastes;

(e) Many national companies have excelled in developing traditional customized software—products and systems—geared to specific needs, such as banking, information systems, airlines, and national security systems. However, a good portion of the large customized systems has been developed by large foreign firms as well.

Since most of the consumption volume is in consumer electronics,[11] most of it is consumed in highly populated countries—namely Algeria, Egypt, and Iraq (before the United Nations sanctions)—with the Gulf countries coming next (accounting for 20% of total Arab consumption).

In computer equipment and software packages, wealthy Saudi Arabia and other Gulf countries rank first in the volume of consumption,[12] because of the faster diffusion of computer applications in these countries (such applications receive lower priority in limited-income Arab countries).

Hardware production was concentrated, till very recently, in the public firms of the centrally planned economies (Algeria, Egypt, Iraq and the Syrian Arab Republic), with limited production by private firms in Morocco and Tunisia and recently Jordan and Saudi Arabia. By the mid-1980s, a few Saudi Arabian companies were established, producing a sizeable volume of selected electronics items, in particular application-specific subsystems,

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[10] Ibid.

[11] VLSI Technology, Inc., "Techno-economic feasibility study for proposed silicon foundry in Iraq".

[12] GOIC, *Taqreer 'an al-Wad' al-Haali lil-Muntajat al-Electroniyya.*

and benefiting greatly from the well-known offset programmes in the Kingdom.[13] Many private firms producing various consumer electronics items and communications equipment have emerged in Jordan, Lebanon, Morocco and Tunisia. However, the total volume of production of these private firms is still very small compared with the larger public sector firms and is marginal compared with the total volume of consumption.

Virtually no production facilities[14] have any unit for design, product development and/or R&D, for upgrading imported design and production technology or for increasing local input and local value added. Most of the time, upgrading is obtained through new, more expensive contracts with suppliers. In addition most of the electronic products produced locally are more expensive than imports and lag far behind the innovative products available on the world market.

There are a few facilities in the region manufacturing passive components; usually such facilities are incorporated within the large public firms assembling consumer electronics, as in Algeria and Iraq. There are also a few private and public companies manufacturing printed circuit boards, restricted mostly to the less sophisticated technology of "one face" boards. There are two facilities to produce linear integrated circuits, in Algeria and Iraq, both established in the early 1980s and now outdated and obsolete. A detailed market survey and a full feasibility study were undertaken in 1990,[15] to set up a "silicon foundry" to manufacture up-to-date CMOS integrated circuits in Iraq. The study, contracted to VLSI in the United States, and financed by the Arab Fund for Economic and Social Development, was aborted with the Gulf crisis of 1990-1991.

A few Arab countries set up lab-scale facilities to manufacture ICs, mostly for research purposes, as is the case in Algeria, Egypt, Saudi Arabia and the Syrian Arab Republic. These facilities can be considered satisfactory for university teaching and research purposes; however, they are not linked to the production sectors.

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[13] Ibid.

[14] See the country papers submitted to the Second Arab Conference for Electronics, Communications and Software Industries, held in Cairo from 28 November to 1 December 1995. See also the country papers included in the present proceedings.

[15] VLSI Technology, Inc., "Techno-economic feasibility study for proposed silicon foundry in Iraq".

B. SALIENT FEATURES

Since most Arab electronics firms target their local market, only a few have considered setting up product design and development units, or allocating any of their sales income for this purpose. Outside of universities and a few research centres, there are no real capabilities for product design and development. Even at universities and research centres, design and development capabilities tend to be theoretical and academic in nature, without any practical aspect or any link to the production sector.[16]

Only limited resources have been allocated for R&D efforts at universities and research centres, and such research rarely arrives at concrete results or leads to the development of successful, operational lab prototypes. Unfortunately, the region has almost no experience in commercializing either the results of R&D or the innovative products that have been developed; no prototype has so far reached the stage of commercialization.[17]

There are growing numbers of university graduates in fields related to electronics technologies and industries, many of whom have advanced degrees but no practical industrial experience.[18] Only a few people in this large pool have the chance to gain good practical experience by working with well-established industrial companies, locally or in industrialized countries.

Some Arab countries, in particular Egypt, have recently witnessed the emergence of small innovative companies owned and managed by some of the country's few well-educated and experienced people with entrepreneurial initiative. These companies have identified specific applications, targeting mostly their local markets and responding to specific local needs; such applications include taxi meters, remote readers of electric power consumption meters, programmable traffic lights, and controls for locally assembled appliances. The markets for these innovative companies have been very small and linked to specific local needs, yet some of these companies have been able to develop exportable products in limited quantities. Some companies have obtained subcontracts from foreign firms to design and/or manufacture subsystems and components, in particular printed circuit boards and ASICs. It is hoped that some of these successful companies will rise to the level where their export is competitive and sizeable.

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[16] UNIDO, "Silicon foundry and design centres in the Arab region: issues and approaches" (UNIDO/IS.583), 1985; and UNIDO and ESCWA, *Report on the Workshop on Regional Silicon Foundry and Design Centres in the Arab Countries* (E/ESCWA/ID/86/CRP.2), 1986.

[17] UNIDO and ESCWA (E/ESCWA/ID/86/CRP.2); Arab Petroleum Investments Corporation, "A joint venture in process control instrumentation", February 1984; UNIDO (UNIDO/IS.583); and UNIDO and ESCWA (E/ESCWA/ID/86/CRP.2), 1986.

[18] See papers of the first and second Arab conferences on the electronics industries; UNESCO, "The higher education system in the Arab States: development of S&T indicators" (UNESCO/ROSTAS, 1995) and "R&D systems in the Arab States: development of S&T indicators" (UNESCO/ROSTAS, 1995).

Among other barriers constraining the growth of Arab electronics firms are the following:

(a) Most Arab electronics firms assemble consumer electronics, yet none of them has the size or structure of the major production firms, which would be needed for profitable mass production of consumer electronics. In fact most such firms, which exclusively target their local market, lack the marketing capability or the managerial skills that would enable them to develop into or operate as large companies. They also lack the capability and drive for exporting and for accommodating export markets;

(b) The region lacks the cluster of supporting and mutually sustaining companies needed for the further development of the production capacities available;

(c) The region as a whole lacks the information infrastructure that would allow it to keep up with global developments, in particular with regard to international trade and technological and industrial innovations.[19]

C. THE ROLE OF THE GOVERNMENT[20]

In the past few decades, many Governments in the region have formulated and implemented national development plans. However, it can be safely stated that, a few attempts notwithstanding,[21] no one country has sustained or implemented a realistic vision or national plan to develop the electronics, communications and software industries. No specific incentives, support or privileges have been officially devised and implemented for these industries, and general incentives provided for the industrial sector as a whole have not been enough to direct investment towards these important industries.

More specifically one may say the following:[22]

(a) Total expenditure on R&D in the countries of the region is still very low (less than 0.1% of GDP).[23] Within this meagre portion, the electronics sector has no priority. In practice, it is far down the list, after other sectors such as agriculture, services and pure sciences;

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[19] See ESCWA, "Survey and assessment of sources of information in the ESCWA region", E/ESCWA/ID/1997/8, September 1997 (in Arabic).

[20] More details on the role of the Government in various Arab countries can be found in the country papers referred to in note 2 above.

[21] See ElHefnawy and ElHadidy, op. cit.

[22] See references mentioned above, in particular the papers submitted to the first and second Arab conferences on electronics and related industries, and the country papers included in these proceedings.

[23] UNESCO, "The higher education system in the Arab States" and "R&D systems in the Arab States".

(b) Special efforts have been undertaken in some places to develop the industrial infrastructure, including the establishment of industrial cities (Egypt, Saudi Arabia, Dubai). However, none of these schemes has given any consideration to the special needs of the electronics industries;

(c) No one country, as yet, has devised any scheme of venture capital or any other form of assisting investment in the electronics industries;

(d) In some countries, plans have been formulated to encourage foreign investment and joint ventures in the industrial sector, yet nowhere in the region have special incentives been provided to direct foreign participation specifically to electronics and related industries;

(e) In some countries, particularly in the Gulf countries, special "offset" programmes have been devised, requiring the foreign contractors of large projects to reinvest within the country part of the total value of their contracts. However, no special efforts have been made to direct these reinvestments into the electronics or related fields, though some investments in electronics have been recorded.

In 1995, after a recommendation by its member States, the Gulf Organization for Industrial Consulting (GOIC), published a study on the status and potential of electronics industries in the GCC countries,[24] but none of the study's recommendations have been put into practice as yet;

(f) Some countries in the region have established joint assembly lines with foreign suppliers, in particular to expand and/or upgrade their national telephone and communications networks, among them Algeria, Egypt and the Syrian Arab Republic. However, in none of these joint ventures was the foreign supplier requested to enhance the transfer of technology, to build up national capabilities or to increase steadily the local technological inputs of products assembled in the country;

(g) Many countries in the region have formulated plans to improve the performance of the national education and vocational training systems. However, in none of these plans was special attention given to the skills and human resources needed for the electronics industries.

There is no agreement on and no movement towards setting up a "regional market" (whether on a bilateral, subregional or regional basis) for electronic products manufactured in the countries of the region, in spite of repeated calls and signed accords to establish various forms of regional or subregional markets and/or free-trade zones, and in spite of the many bilateral arrangements for the duty-free exchange of manufactured products.[25] The fact

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[24] GOIC, *Taqreer 'an al Wad' al-Haali lil-Muntajat al-Electroniyya.*

[25] Heba Handoussa, *Potential for Arab Cooperation in Industrial Development* (UNIDO, 1994).

remains that any national firm is still limited to its local national market, which is usually too small to sustain any serious large-scale electronics manufacturing venture.

In the past decade or so, Egypt has set forth many initiatives and plans to enhance its capabilities in electronics design and production, in particular in software development; tangible results are still limited, however.[26] Among the more successful initiatives may be cited the effort of the Information and Decision Support Centre (IDSC) in establishing training centres around the country and in establishing the high-level Information Technology Institute (ITI), which offers nine months of practical training on advanced development techniques such as object-oriented programming and multimedia, for new university graduates in computer science and related fields, leading to a recognized M.Sc. degree, under special agreements with well-known European and American universities.

Another initiative under consideration by the Government is the contracting of Oracle, a well-known TNC in software development, to train a large number of Egyptians on Oracle platforms, in the hope that Egypt may eventually be able to accumulate enough cheap software development capacity for subcontracting and/or export, in batch or on-line directly to export markets.[27]

D. ISSUES OF HUMAN RESOURCES

Almost every country in the region has developed and expanded its educational system, including the university level,[28] with many countries succeeding in developing a good vocational and technical education system as well. In many of the high-population countries, there is a growing pool of university graduates in electronics and computer-related specializations, many of whom have completed their M.Sc. and Ph.D requirements. However, because of the weak industrial base, in particular in electronics and software, most of these university graduates never gain the chance to acquire any practical experience, and thus most of the time they do not gain any insight into the problems of production. They therefore lack effective capabilities for product design or for the development and commercialization of innovative products.

A limited number of these university graduates have gained access to higher education and practical experience in the more industrialized countries, and some obtained permanent work positions in well-established industrial companies. This growing pool of well-educated and skilled to highly-skilled expatriates truly represents wealth for the region, if it can be tapped by developing an environment that would lure them back to the region.

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[26] ElHefnawy and ElHadidy, op. cit.

[27] UNIDO, *Information Technology* bulletin, 3/1996; Information Technology Institute brochure; and direct communication with IDSC Director General.

[28] ESCWA, *Final Report of the Expert Group Meeting on Issues in Managing Technological Change within the Context of Arab Electronics Firms and Selected Proceedings* (E/ESCWA/ID/1992/14), 1992.

A review of the literature shows that the human resources of the region consist mostly of a very large pool of unskilled and semi-skilled labour, a large pool of well-educated but industrially inexperienced university and vocational and technical institution graduates, and a smaller pool of highly qualified, experienced expatriates.

Labour skills and wages in the region vary greatly between countries, if the labour markets of the oil exporting countries are included. However, with regard to the densely populated countries, the following may be stated:[29]

(a) There is a large and relatively cheap unskilled labour force, usually without serious experience in the industrial sector;

(b) Formal wages of the labour force in the industrial sector for unskilled and semi-skilled tasks are usually cheap compared with those in the more industrialized countries, but are higher than in most of the cheap-labour countries;

(c) Those graduates of universities and vocational and technical institutes who have no real industrial experience earn wages which are very low compared with the wages paid in industrialized countries and which are comparable to or only slightly better than wages in the cheap-labour countries;

(d) Experienced persons with vocational and technical skills who work on their own (for example, in maintenance shops), are highly paid compared with technicians and university graduates who are employed by firms or institutions;

(e) In most countries, R&D facilities have been accumulating highly educated, well-trained researchers and scientists who have limited skills in product design and development, but whose skills in basic and applied research may be comparable to those of their peers anywhere in the world. Their wages are low compared with wages in industrialized countries and may be comparable to or even lower than those in the cheap-labour countries.

The situation with regard to software development experts is similar to that of other scientists and researchers in the region. Many software experts were able to gain access to higher education and to acquire up-to-date knowledge, yet because of weak software development and production facilities, very few have had the chance to gain practical, hands-on experience. Owing to lack of opportunities, many lose touch with global developments and innovations—in particular with regard to the tools and techniques of software development—and their skills become obsolete. Only a very small proportion of such experts have the chance to update their skills through training, through attending conferences and seminars or through direct contacts and/or work with well-established foreign companies. Therefore, in spite of the large number of university graduates in computer-

[29] See the country papers on Egypt, Jordan, Lebanon and the Syrian Arab Republic, cited in note 2 above.

related fields, there is still a scarcity of experienced, qualified personnel with skills in software development. This problem could be solved through intensive practical training programmes undertaken by Governments, and this approach is expected to be taken in Egypt.

III. NOTES ON THE ISRAELI ELECTRONICS INDUSTRY[30]

A. BACKGROUND

The Israeli electronics industry was initiated by a government decision at the end of 1967 as a response to a French military embargo. It aimed at making the country self-sufficient in military hardware, through large-scale military industrial projects. The government undertook several daring programmes: it encouraged an educational orientation towards selected technical specializations; it opened many R&D centres; and it established several electronics companies within the public sector, mostly geared to meeting the needs of the army and of the military industrial complex.

This beginning of the Israeli electronics industry will continue to affect the nature and operation of the industry for a long time to come. Most electronics production will remain in the public sector, producing for the military or linked in some way to the military. Furthermore, the military environment will continue to be the breeding space and the training ground for most industrial electronics and software projects and companies in Israel, in particular those specialized in electronic hardware, communications and, above all, application-specific high-level software products.

Towards the end of the 1980s, defence industries worldwide suffered a partial collapse. The Israeli defence industries, including the electronics sector, were severely hit; large Israeli electronics companies were forced to close down plants and lay off a large number of highly qualified scientists and engineers in electronics, communications and software.[31] Many of these were forced to emigrate to the United States or Europe seeking better job opportunities. This collapse drove the educational institutions in the country, as well as many of the students in the younger generation, away from specializations related to technical fields.

In 1989, the Government, working to enhance the country's ailing economy, adopted the recommendations of a high level committee[32] to concentrate on high-tech industries which were selected because they were high value-added, knowledge-intensive and export-

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[30] Statistics and some of the information in this chapter are based on: Marie-Hélène Nougaret, unpublished untitled study on the Israeli electronics industry; and Ribhi Abu El Haj, "The Israeli electronics industry", appearing in these proceedings.

[31] Israel Association of Electronics Industries (IAEI), *Israel's Electronics Industries Profile* (IAEI, May 1996).

[32] "Electronics industry in Israel", *Haaretz*, 29 September 1989.

oriented, and also because they promised high growth worldwide. To this effect the Government took the following steps to promote the development and growth of these selected fields:

(a) The establishment of the Ministry of Science and Technology and the Office of the Chief Scientist (OCS) in the Ministry of Industry and Trade;

(b) The provision of financial, administrative and political incentives for research, development and investment in innovative and export-oriented fields;

(c) The signing of bilateral agreements with advanced countries, for joint research, production and investment—in particular in these industries—as well as special free-trade agreements. These schemes are described below.

Since the early 1990s, Israel has witnessed continuous growth and development in the production and export of high-tech products, linked mostly to the electronics, communications and software fields. However, most of the growth has been linked to small and medium-sized innovative companies established to commercialize civilian products converted from research in military fields and targeting market niches in advanced countries, mostly the United States and Europe.

The 1990s have witnessed continued rapid growth in the production and exports of the Israeli electronics industry, owing to a combination of many factors which together make up the industry's comparative advantage. These factors, which will be elaborated upon below, include the following:

(a) Large programmes of government support and subsidies;[33]

(b) The arrival in the country of a large number of highly qualified scientists and engineers as immigrants;[34]

(c) The experience gained in successfully transforming the results of research from lab prototypes into commercially viable companies;

(d) High level of expenditure on R&D[35] financed by the Government and the military;[36]

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[33] General Agreement on Tariffs and Trade, *Trade Policy Review: Israel, 1994,* vols. 1 and 2 (Geneva, General Agreement on Tariffs and Trade, February 1995).

[34] Israel has the highest number of scientists and engineers employed in R&D per capita (135/10,000 compared with 85/10,000 in the United States); Nougaret, op. cit.; and *Link* (December 1994).

[35] Israel's investment in R&D is close to 2.3% of GDP, lower only than that of Japan, Germany, Switzerland and Sweden. See *Israeli Electronics Industries Profile*; Center for Middle East Competitive Strategy, draft presentation "Israel hi-tech: focus on multimedia industry", phase I (October 1996 to March 1997).

(e) The peace process and the promises opened up by regional stability;

(f) The relatively low cost of R&D and of product design and development in Israel;

(g) The increasing globalization of electronics production and marketing.[37]

B. SALIENT FEATURES[38]

The Israeli electronics industry can be described as fast-growing and promising, when compared with other industries in the country or with the electronics industries in other countries. This industry is based on many comparative advantages and competitive strengths, in particular the availability of a large pool of highly qualified human resources and strong government support. However, it has many weaknesses, including the rising cost of qualified software experts, and is far from being comparable to the "miracles" of the Far Eastern countries. The present study cannot cover all aspects and characteristics of the Israeli electronics industry; it will concentrate instead on the factors and characteristics that will affect or be affected by progress in the peace process and by prospects for regional stability and regional cooperation.

The Israeli electronics industry came into being as the result of a government decision to develop self-sufficiency in military electronics after the imposition of the French military embargo at the end of 1967. The circumstances surrounding its creation have had a profound effect on Israel's electronics industry and will continue to do so for the foreseeable future, that is, this industry will continue its heavy dependence on government support and subsidies and on the breeding environment of the military industrial complex.

The comparative advantages mentioned above led to the proliferation of a large number of small entrepreneurial companies established to develop and commercialize innovative products based on intensive R&D, in particular specialized products in communications, embedded software, and application-specific integrated circuits. Most of these innovative companies can be labelled "pure high-tech", where the unskilled labour cost of production is trivial and where the greatest proportion of the value added is in the products' embedded knowledge and know-how, the result of intensive R&D based on the relatively cheap labour costs of local scientists and engineers.

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[36] General Agreement on Tariffs and Trade, *Trade Policy Review: Israel, 1994.*

[37] *Link*: June 1994, September 1995.

[38] Abu El Haj, op. cit.; Bernard Avishai, "Israel's future: brainpower, high-tech and peace", *Harvard Business Review* (November-December 1991), p. 50.

The availability of a large pool of qualified scientists and engineers at a relatively cheap cost (compared with such costs in the more industrialized countries) and the strong government support to high-tech R&D activities have encouraged many TNCs in the electronics industry to establish R&D and design centres in Israel, in particular after the development of the increasingly sophisticated telecommunications infrastructure in the country in the past few years. Among these are Digital, Motorola, Tower Semiconductors, Microsoft, Novell and Computer Associates. The largest is the centre belonging to IBM, which is in Haifa and which employs more than 300 scientists and engineers.[39]

The military environment[40]—the army and the military industries—has been dominant in the growth and performance of the Israeli electronics industry, representing a large captive market of large companies (by law the Israeli Government must buy from Israeli companies) and the breeding environment (that is, the real incubator) for most of the new entrepreneurial companies. Besides the fact that a good part of Israel's electronics sales and exports is still in military-related areas,[41] the military environment provides the civilian electronics industry with many advantages, which will be reviewed in the section below on the role of the military.

However, this military dominance is not without its negative side, for example, the tradition of producing at any cost (usually much higher than the economic cost), the lack of marketing capabilities and insensitivity to civilian market needs.

Consumer electronics production is virtually non-existent in Israeli electronics companies.[42] The obvious reason is that the factors of production are against such manufacturing in Israel: the market is small, unskilled labour is expensive, transport costs to major markets are high and the local culture is insensitive to that of the surrounding markets. Thus Israel offers no special advantages with regard to consumer electronics production. The few relatively large Israeli companies that have been attempting to mass product communications and other products[43] benefited from the captive Israeli market and yet suffered to a certain extent from cycles of recession and trouble, owing to the rapidly changing nature of the industry, the short life cycle of products and the fierce global competition characterizing the industry, in particular since the Israeli market was recently opened to foreign competitors.

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[39] Nougaret, op. cit.; and *Link,* June 1994, September 1995 and other issues.

[40] *Link*, June 1994, May 1995, June 1995, March 1996 and other issues.

[41] IAEI, *Israel's Electronics Industries Profile*; Nougaret, op. cit.; *Link*, various issues.

[42] IAEI, *Israel's Electronics Industries Profile*; and Abu El Haj, op. cit.

[43] Tadiran under licence from Alcatel and Telrad under licence from Northern Telecom; see *Link*, June 1994, Summer 1994, November 1994, March 1995, May 1995, February 1996, March 1997 and other issues,

The lack of mass production traditions and facilities, the unavailability of supporting infrastructure[44] and the relatively high cost of unskilled labour are all factors that have forced many of the newly established Israeli companies and many of the foreign partners to carry out the actual manufacturing and hardware production (of products developed and designed in Israel) in countries where mass production is cheaper, such as Indonesia, Malaysia and Thailand.[45]

TNCs have thoroughly dominated the electronics industries worldwide, producing large volumes of complex systems, consumer products and components, and the complete lack of giant electronics companies in Israel is noticeable in contrast. Tadiran and a few other large companies in Israel's electronics industry—Scitex, Elron and Israel Aircraft—have dominated to a great extent Israel's electronics sales and exports. They are owned and operated mostly by the public sector, with military sales exceeding civilian sales (60%-70% against 30%-40%).[46] Military sales and exports, which are usually based on a mixture of economic and political factors, sustain these large companies, which suffer from all the ailments that plague old public sector companies worldwide, namely:[47]

(a) Lack of capability to manage economically large companies' large-scale mass production;

(b) Lack of capability to manage the investment and finances of large companies;

(c) Lack of marketing capabilities;

(d) Weak innovative capabilities to respond to the rapidly changing nature of the industry;

(e) Vulnerability to the fluctuating cycles of the global industry;

(f) The dominance of production in a "cost-plus" culture, with heavy reliance on captive markets, both civilian and military, and on heavy government support and subsidies.

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[44] Center for Middle East Competitive Strategy, draft presentation "Israel hi-tech: focus on multimedia industry" phase I (October 1996 to March 1997).

[45] *Link*, January 1996.

[46] IAEI, *Israel's Electronics Industries Profile*.

[47] *Link*, June 1994, September 1994, November 1994, November 1996, March 1997 and other issues; and Center for Middle East Competitive Strategy, "Israel hi-tech: focus on multimedia industry".

Sales of electronic products have been increasing steadily in the last decade, growing by more than 13% in 1995 over 1994 figures. Exports increased in 1995 by 15.5%, representing more than 75% of sales.[48] However a 1996 analysis of industrial profitability[49] revealed that the Israeli electronics industry had almost the least profitability of any industrial sector (higher only than the textiles and clothing industry), amounting to barely 4%. This low profitability was explained by the rising wages of software experts and the rigid exchange rate of the new shekel, in particular since exports account for more than 75% of sales.

The global electronics industry is increasingly dependent on a wide range of multidisciplinary supporting industries and on strategic alliances between clusters of giant companies. The absence of these related supporting industries and infrastructure and the lack of conglomerates and clusters of cooperating companies will further erode the competitive edge of Israel's industries.[50]

The support industries and services needed would include technical capabilities (such as fibre optics and up-to-date technology for producing active and passive components), reliable distribution, marketing and information infrastructures, and above all, solid yet flexible banking structures and traditions, all lacking in the present structure of the Israeli economy.

A trend is emerging whereby many Israeli innovative companies concentrate on software products linked to the globally expanding information technology markets and the Internet, such as voice communication on the Internet, data security and risk analysis, anti-virus systems, local area networking of heterogeneous media, and multimedia products.

C. THE ROLE OF THE GOVERNMENT[51]

1. *Summary of support schemes*

The Government of Israel has been very active in the establishment, sustainability and growth of Israel's electronics industry, in particular in regard to the innovative, export-oriented companies, which now represent the prime mover of the industry. As stated above, the real start of the Israeli electronics industry came about through a government decision at the end of 1967. Since then the Government has promoted a national vision for the industry and has given dynamic support to schemes targeting this industry, based on the recommendations of high-level, specialized committees that have been requested to assess

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48 Abu El Haj, op. cit.; and IAEI, *Israel's Electronics Industries Profile*.

49 Center for Middle East Competitive Strategy, "Israel hi-tech: focus on multimedia industry".

50 Ibid.

51 Nougaret, op. cit.; and Abu El Haj, op. cit.

periodically the industry's role in the economy of the country. The government support schemes of particular relevance to the electronics industry include the following:

(a) The law of encouragement of research and development (R&D);

(b) The encouragement of technological disciplines and related fields in educational institutions;

(c) The establishment and financing of public R&D institutions;

(d) Direct support to the Israeli electronics industry through selective public purchasing (and through the military);

(e) The establishment of schemes for tax holidays and other financial and administrative incentives;

(f) The financing of the absorption of new immigrant scientists;

(g) The negotiation of bilateral R&D and free-trade agreements with many of the industrialized countries;

(h) The encouragement of cooperation between universities and research institutions on the one hand, and the industrial sector on the other hand;

(i) The encouragement of all forms of support for public and non-governmental agencies;

(j) Most important, the crucial direct support and the "incubation" environment of the military.

It is true that most of these schemes and laws do not specifically target the Israeli electronics industry, yet in practice this industry has been the largest beneficiary of all the economic sectors of the country.[52] Some of the more prominent of these schemes and incentives are described below.

2. *Support for R&D*[53]

Most incentive schemes are provided by the Law for the Encouragement of Industrial R&D, issued in 1984. The major government support schemes for R&D that lay particular stress on electronics and software include the following:

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[52] IAEI, *Israel's Electronics Industries Profile*; Nougaret, op. cit.; and Abu El Haj, op. cit.

[53] Ibid.

(a) A yearly OCS budget has been allocated to support approved R&D projects, amounting to more than NIS 200 million per year, and in 1997 totalling more than $1.3 billion;

(b) Approved R&D projects benefit from co-financing amounting to more than 50% of approved expenditure. More than 65% of approved projects were electronics or software projects;

(c) Government and public bodies have been the primary sources of R&D funding; a good part of this funding has been directed to the industrial sector;

(d) Industrial R&D has been characterized by a heavy concentration on electronics and software (which receive more than 65% of funding for industrial research and account for more than 61% of all professionals, engineers and technicians working in R&D in the country);

(e) In 1992, Magnet, a special programme, was implemented to encourage cooperation among industrial enterprises, universities and research institutes in developing new technologies. Under this programme, a consortium is entitled to an R&D grant equivalent to 66% of approved expenditure, with no repayment requirement. The Magnet budget for 1995/96 was about $40 million, with more than 80% of this amount allocated for electronics projects.

3. *Investment incentives and support for start-up innovative companies*[54]

Most incentives are provided by the Investment Centre. Besides highly attractive tax holidays and other incentives, qualified start-ups of successful R&D innovative projects are provided with direct financing, to cover start-up expenditures including marketing, distribution, overhead cost, salaries and machinery. This financing covers 66% of approved expenditure of up to $150,000 and 50% of excess expenditure, for two years. This "grant" is recovered by the Government from successful companies, in the form of royalties amounting to 2% of sales of commercialized products.

The OCS encourages private companies and holdings experienced with R&D—including local and foreign venture capital—to adopt and/or support R&D initiatives with government guarantees, for up to 30%. In addition, the OCS supports new ventures through two-year risk-sharing grants of up to $250,000 per year, covering 66% of expenditure.

One important subsidy by the Government is provided through schemes to absorb new immigrant scientists, amounting to $25,000 per year per engineer or scientist.

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[54] Ibid.

4. *The incubation programme*[55]

Another important scheme to support start-up innovative companies—in particular technology-based firms—is the incubation programme initiated in 1991. Though this programme does not specifically target electronics projects, nevertheless since 1991, out of all projects supported, 32% were in electronics, 22% were in software and 9% were in related medical electronics. The National Incubator Association has been established to coordinate the programme and to support the various sites (a total of 26 sites at the end of 1996) distributed throughout the country.

Each incubator is assigned building space and an experienced management team. Projects qualified to be "incubated" are provided with working space at a subsidized rent and with a package of shared facilities and services: secretariat, reception, meeting room, administration and communications. Various types of advice and consultancies are provided by the experienced management team to incubated projects, including: formulation of the business plan and follow-up on the implementation; facilitation of contacts with identified potential investment and finance institutions and agencies and assistance in formulating financing investment requests; management of finance and cash flow; and legal, logistical, technical and professional support.

Special technology-based incubators have been established to absorb highly qualified new immigrant scientists and engineers. In these incubators, two-year grants are provided by the Government to each project initiator/manager, amounting to $140,000 per year. Usually, additional resources from other public or private agencies (for example, the Jewish Agency) would be identified for projects with reasonable prospects for success, to finance the project beyond the government grant; in most cases this would amount to up to 80% of the project expenditure. Furthermore, the Government supports incubated projects through various schemes to absorb new immigrants, including wage subsidies to employees of projects, and venture capital when the project reaches the commercialization stage.

It should be noted that, after five years of operation, the incubation programme recorded that 50% of incubated project managers and 75% of employees were new immigrants. By the end of 1996, more than 300 projects had been successfully incubated; total expenditure on the programme has exceeded $70 million.

5. *Bilateral agreements*[56]

To enhance further the opportunities of Israeli researchers and companies, and to open up opportunities for more support and better access to worldwide research facilities and

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[55] Israel, Ministry of Industry and Trade, Office of the Chief Scientist, *Technology "Incubators" in Israel*; and *Link*, March 1996.

[56] IAEI, *Israel's Electronics Industries Profile*; Nougaret, op. cit.; Abu El Haj, op. cit.; and *Link*, Summer 1994, June 1995 and other issues.

markets, the Government of Israel has arranged a wide spectrum of bilateral agreements with various countries, organizations and agencies. The more relevant of these agreements here are the joint research agreements and free-trade agreements. The most important of the free-trade agreements are those with the United States of America (signed in 1985), the European Union (signed in 1975 and renegotiated in 1995) and EFTA (signed in 1995). All these agreements give Israeli products privileged access to these important industrialized markets, with exemption from import taxes. Other bilateral free-trade agreements were also signed with various countries, most recently in Asia.

These agreements do not target high-tech and electronics products; nevertheless, considering the fierce global competition faced by exporters, the easy market access and the exemption of Israeli high-tech products from import taxes provide a net comparative advantage to these products. Many TNCs have set up facilities or are considering setting up facilities in Israel as a stepping-stone towards these wealthy markets, in an attempt to take advantage of these agreements.

Among the bilateral joint research agreements, the most important is the Industrial Research and Development Foundation Agreement (BIRD), signed with the United States in 1977, providing a total budget of $120 million, shared equally between the two countries, to support high-tech research undertaken jointly by American and Israeli firms. BIRD provides co-financing for R&D and for the commercialization of innovative technological products and processes with export potential. By 1996, about 440 projects had been supported, producing sales turnover of more than $3.0 billion.

6. *Production subsidies, tax concessions and incentives*[57]

The Government has formulated many schemes and programmes to support and encourage investment in industrial production. Again, these programmes do not target electronics, but Israel's electronics industry has been among the beneficiaries who have gained the most. Among the more relevant of the support schemes are the following:

(a) Investment grants on fixed assets and capital grants for operating funds, amounting to as much as 38% of the project cost;

(b) Reduced corporate taxes for as much as seven years of profitable operation;

(c) Special exemptions and incentives for foreign direct investment;

(d) Accelerated depreciation rates;

(e) Selection from among three programmes of incentives: subsidies, tax exemptions or State guarantees.

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[57] For details of these schemes see Abu El Haj, op. cit.

In 1993, total incentives granted to the business sectors in Israel by the Investment Centre[58] amounted to more than NIS 2.6 billion (equivalent to $929 million). In 1996, the Investment Centre approved $5 billion of investment, of which 40% was in electronics.

D. ISSUES OF HUMAN RESOURCES[59]

Israel claims to be the richest country with regard to skilled human resources, with its endowment of "brain power" being its only "natural resource". The following statistics are used to back this claim:

(a) The country has the highest per capita rate of scientists, engineers and technicians; 6.5% of the local population can qualify as engineers;

(b) About 30% of the people in the labour force have more than 13 years of education, while 20% have earned an academic degree;

(c) Approximately 25% of the workforce is engaged in scientific, academic or technical professions, while another 25% is engaged in skilled industrial activities;

(d) Israel has the highest per capita number of publications in science and technology;

(e) The country has a solid public school system, five universities and two higher institutes for science and technology;

(f) There is a highly developed educational television network;

(g) Programmes were formulated at all levels to promote cooperation and joint research between universities and R&D institutions on the one hand, and the industrial sector on the other hand;

(h) The waves of new immigrant scientists from the countries of the collapsing communist system have practically doubled the country's human capital.

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[58] General Agreement on Tariffs and Trade, *Trade Policy Review*; and *Link*, November-December 1996 and other issues.

[59] Avishai, op. cit.; Nougaret, op. cit.; Abu El Haj, op. cit.; and *Link*, April 1995, May 1995, November 1995 and other issues.

Likewise, Israel claims to be a world centre for R&D on the basis of the following:

(a) Israel has the highest per capita number of scientists and engineers employed in R&D (135/10,000 compared with 85/10,000 in the United States);

(b) Expenditure in R&D is heavy (2.3%-3% of GDP);

(c) The R&D workforce is motivated, multilingual and multicultural, with high productivity;[60]

(d) The army experience—and the country's "national conditions"—have helped emphasize teamwork, mutual support, the sharing of ideas, innovation and initiative.

Taking all above-mentioned factors into consideration, and adding to them the fact that unskilled labour (for mass production manufacturing) is much more expensive in Israel than in cheap-labour countries, it is not strange that most local entrepreneurs and TNCs are looking to Israel as a competitive site only for design, R&D and innovations in high-tech, but not as a competitive site for the mass manufacturing of consumer products. It has been observed that Israel's most successful company is the one that is the most purely high-tech, where the cost of unskilled labour is trivial compared with the high science content embedded in the company product.

Owing to the proliferation of Israeli high-tech start-up companies and the increasing number of the R&D and design centres opened recently in Israel by TNCs, the demand for highly skilled personnel in science and technology, in particular competent experts in software development, has been increasing steadily in the past few years, pushing wages upward and decreasing Israel's competitive strength in this regard.[61]

It is estimated that in 1996, Israel was a few thousand computer experts short of meeting the demand for such personnel, and the deficit is increasing; however, many programmes have been formulated to alleviate this shortage.[62] Furthermore, both the Government and the private companies are formulating incentive programmes to entice Israel's expatriates specialized in computer science back to the country, although these programmes have met with only partial success to date.[63]

With the increasing demand for software skills and the increasing shortage within the country, many companies have begun to look for support from outside. It has been

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[60] *Link*, Summer 1994, September 1994, April 1995, June 1995, July 1996 and other issues.

[61] Abu El Haj, op. cit.; IAEI, direct communication; and *Link*, November-December 1995 and other issues.

[62] Abu El Haj, op. cit.; and IAEI, direct communication.

[63] *Link*, November-December 1995.

reported that some Israeli companies have been subcontracting some low-level software development to India, and recently to Egypt and Jordan as well. It has been reported also that Israeli companies have been trying to recruit from neighbouring countries, an issue to be elaborated upon below.[64]

IV. THE IMPACT OF THE PEACE PROCESS[65]

A. REGIONAL RELATIONS AS VIEWED ACROSS THE BORDERS

There is a certain degree of variance in Israeli views with regard to the impact of the peace process on the country's electronics industry. Many see no direct impact, since the industry is now based on specialized, highly sophisticated products targeting market niches in industrialized countries—49% in the United States, 27% in the EU and 23% in the rest of the world. Many Israeli experts further claim that Arab countries have virtually no electronics industry,[66] and thus—even if a comprehensive peace prevails—they do not need Israel's highly sophisticated products and components, in particular since the Israeli electronics industry cannot sustain large-scale assembly of consumer electronics, the only items for which there is a sizeable market in the Arab countries.

Furthermore, some Israeli "pessimists" claim that the Arab boycott has helped to direct the Israeli electronics industry towards the more sophisticated high-quality products that can compete in industrialized countries, whereas dealing with the less sophisticated Arab markets would have limited Israeli industries to lower technologies and quality, which is what happened in the construction industry, for example.

In other fields, many Israeli businessmen have felt a positive impact from the peace process, through their dealings with TNCs and with potential investors.[67] It is stated that the promise of peace and security has created a completely different view of the region on the part of outsiders. TNCs would be more likely to set up R&D centres and operations in Israel and in the region if they did not have to fear war or the Arab boycott. In fact, the lack of comprehensive peace and security is cited as the primary reason that major Japanese companies still shy away from Israel, in spite of the many areas where cooperation is possible. Other observers have pointed out that peace accords have opened up to Israel many markets that were formerly hostile to Israel, including many countries and areas with large Muslim populations such as China, India, Malaysia, Morocco and Eastern Europe. Finally,

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[64] *Link*, April 1995, May 1995 and November-December 1995.

[65] *Link*, November 1995; Shlomo Maital, "Peace, trade and technology in the New Mideast", *Technology in Society*, vol. 17, No. 2 (1995); General Agreement on Tariffs and Trade, *Trade Policy Review*; Avishai, op. cit.; and Abu El Haj, op. cit.

[66] *Link*, December 1994, November 1996 and other issues.

[67] *Link*, September 1994, June 1994, September 1995, April 1995 and May 1995.

many observers point out that a comprehensive and just peace and regional security would divert the enormous resources currently allocated for military mobilization and for security measures to economic development that would benefit the whole region.

For many TNCs—and for most countries—the continuity of the peace process is crucial for successful dealings or partnerships with Israel or with other countries in the region. TNCs do not want to find themselves caught in a war zone or being boycotted by Arab countries. Many TNCs would like to establish R&D and design centres in the region, as well as regional representative offices. Many Europeans see in Israel's highly sophisticated machine tool industry a place for the precision manufacturing of components and subsystems. However, any such activity would be linked directly to comprehensive and just peace and regional security.

B. THE TRANSNATIONALS' VIEW OF THE REGION[68]

Large-scale electronics production has been globalized and monopolized to a great extent by a limited number of giant TNCs; different steps of the production process are being carried out in various locations, to minimize production cost and maximize access to markets and profit. These TNCs have shied away from serious investment in the Middle East, for various reasons, the most important of which were the recurrence of wars and military confrontations and the ensuing political and economic instabilities.[69] With the promise of comprehensive and just peace and security for all in the 1990s, many TNCs considered reviewing their stand on the region (which they had previously classified as a high-risk region) and began to view the large market and the huge resources available as potential business opportunities; they have been looking into the possibility of setting up a "triangle of partnership"[70] (TNC—Arab country—Israel) for large-scale manufacturing, to benefit from these promising opportunities. It has been claimed that this tripartite partnership would be based on suitable benefits deriving from the competitive advantages of all sides concerned, as follows:

(a) The TNC would provide industrial technologies and know-how, managerial skills, a global network for distribution, marketing and after-sale services and (possibly) capital investment;

(b) The Arab side would provide the large market, the cheap unskilled labour, the comparatively cheap, educated human resources and (possibly) part of the investment capital;

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68 *Link*, June 1994, December 1994, June 1995, September 1995; and "Can Egypt become the next consumer economy?" *International Herald Tribune*, 16-17 March 1996.

69 *Link*, June 1995, September 1995, March 1996; and Maital, op. cit.

70 *Link*, September 1995; Center for Middle East Competitive Strategy, "Israel hi-tech".

(c) The Israeli side would provide its pool of high-quality labour with competitive wages and a great deal of experience in R&D, industrial product design and development.

This partnership triangle, benefiting from all sides' comparative advantages and profitable to all parties, may appear to have good business opportunities in many electronics-related industrial ventures, including the following:

(a) Mass production of passive and active components, to feed consumer-electronics assembly lines that can be established successfully in the region;

(b) Large-scale assembly lines for various consumer electronics products, including PCs and software packages, targeting nearby markets with cultural and economic ties (Arab, Islamic and African countries);

(c) Development of region- and culture-specific applications, such as arabized and Islamically oriented applications (educational software, Islamic banking);

(d) Investment in multimedia products and information networks, a market with rapid regional growth (this field needs a large market to be economically feasible).

In order to derive the fullest advantage from this regional tripartite partnership, all forms of joint operation and partnership must be considered seriously, so as to select in each market/country the most profitable product, the best mode of operation and the most appropriate form of partnership, including border joint industrial parks, subcontracting, joint ventures and subsidiaries.

This promising scenario for triangular partnership may have some merit for TNCs, once the region has developed comprehensive and equitable peace and security for all. However, there are certain barriers and facts that have to be taken into consideration:

(a) Even if a comprehensive peace eventually prevails, there is no reason for Arab countries to grant Israel, out of all other countries, the status of a privileged partner. Other countries may have greater comparative advantages than Israel;

(b) The regional market has been fragmented into small, limited local markets. Peace with Israel will not change this reality, in particular since the Israeli policy has been to insist on bilateral dealings and partnerships (with each of the neighbouring countries separately) and to oppose the emergence of a regional market;

(c) For many TNCs, large-scale production of consumer electronics would be more profitable close to local markets, in particular since Arab tastes and preferences may be very different from those of Israelis. An industrial venture in any Arab country may benefit from partnership with a TNC, while the urgency to formulate a partnership with Israel is not as obviously logical.

C. Current and potential trends in regional relations

1. *Sustainable and substantive gains for all*

Goods, capital and labour flow in the direction where they can make a profit and a fast return.[71] Stable economic relations, on the other hand, must be developed over time; they have to be ongoing—the fabric of continuous relationships, woven from the fibres of trade, technology and resources—in order to achieve sustainable and substantive gains for all sides. In terms of regional relations, for fields related to electronics, this can be translated as follows: If other factors are favourable, when a comprehensive and just peace prevails in the region, then trade will be created/diverted for products that are marketable, that is, products that are needed, competitive (in quality and cost), easily accessible and suitable to the end-user's taste and needs. Investment will flow to businesses that can secure profitability, the transfer of returns, stability, security and flexibility of operations. Labour will move towards the markets where its level of skill is needed and is competitive, and where wages are attractive. The same can be said about the various forms of industry relations: subcontracting; the exchange of components and subsystems; joint ventures; equity acquisitions; and the establishment of subsidiaries.

2. *Arab/Israeli trade in electronic products*

A review of the status and salient features of the electronics industries in the Arab countries and Israel makes it clear that electronic products manufactured/assembled in the Arab countries will not find a place in the Israeli market, since they cannot compete in terms of quality or cost and have no special comparative advantage, and since they have to compete not only with Israeli products, but also with cheap products supplied by TNCs.

Most products marketable in the Arab countries are consumer products, where Israel's electronics industry has no comparative advantage; hence it is expected that no Israeli consumer products will penetrate Arab markets. Even non-intelligent Israeli communications equipment, which has certain comparative advantages, will not be competitive since such equipment is produced in Israel under licence from foreign companies with restricted export outside Israel.

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[71] Maital, op. cit.; and *Link*, June 1994.

3. *Israeli opportunities in Arab markets*[72]

Most successful Israeli products are those that are highly knowledge-intensive—special communications systems, data security, military electronics. However, owing to the less developed nature of Arab markets, these special-application products will find extremely limited opportunities, if any. Thus very limited diversion towards the Arab countries will be created for these products, which usually target advanced markets.

However, one area where potential relations may develop in the long term—if serious progress towards a comprehensive and equitable peace is achieved, and after the full political confidence and security of all parties are established in the region—is in the field of instrumentation and process controls, in particular in the oil and oil-related industries, where the Arab markets for installing and/or maintaining and upgrading these systems is estimated at a few billion dollars per year, and where the pan-Arab company Eriscon's collapse left the market wide open to competition. Israel is not known to have any specific comparative advantage in this field as yet; however, it may be possible to establish multinational firms (Arab/Israeli/third party) to respond to the needs of this huge market, and to benefit from the combined comparative advantages in the region: Israeli know-how and experience in large system integration and high-level software applications; cheap Arab software expertise, available Arab investment capital and Arab familiarity with the region; and the TNC's know-how and management capabilities.

4. *Investment*

Both the Israeli and the Arab sides lack adequate investment in electronics. However, this is an area where all countries are competing to set up viable and profitable industrial firms. From a global perspective, electronics-related ventures are the most thirsty for venture capital, since innovations are very expensive to develop yet promise fast returns when successfully commercialized.

International venture capital has established strong traditions in Israel's electronics industry, in particular with start-up innovative firms. However, owing to political, psychological and technical barriers, it is not expected that floating Arab investment capital will participate, or be allowed to participate, in Israel-targeted venture capital.

The Arab markets lack any form of venture capital, though they are receptive to traditional foreign direct investment in electronics ventures such as communications equipment, consumer electronics and instrumentation and process controls. These markets represent a few billion dollars in sales per year, providing good opportunities for future investment. It is expected that Arab expatriate capital may be mobilized to participate in such ventures, if the proper environment were developed and if peace and stability prevailed, thus luring giant TNCs to start exploiting the region's manufacturing capabilities and potential.

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[72] *Link*, December 1994.

5. *Movement of labour*[73]

Throughout the years of occupation, and on until the present time, a large number of Palestinian workers were integrated into the Israeli labour market. Owing to various upheavals, security restrictions and border closures, the total number has fluctuated, yet mutual needs and benefits have sustained this movement of labour: The Israeli labour market has been thirsty for the cheap unskilled or semi-skilled Palestinian workers, while the latter need the relatively higher income they can earn in Israel, compared with what they earn within the occupied territories.

Almost none of the Palestinians working in Israel were absorbed into the Israeli electronics industry, mainly because this industry does not have the consumer-electronics mass-production facilities where cheap, unskilled labour may be absorbed. On the other hand, even the more highly skilled labour and university graduates among the Palestinians could not find work in the proliferating electronics start-up companies, because these knowledge-intensive companies are based to a great extent on R&D projects linked to military research. Skilled Palestinian labour was excluded from these companies for two reasons: (a) the availability, until recently, of a large pool of reasonably costed Israeli scientists and engineers, in particular owing to the inflow of scientist immigrants; and (b) the military aspect of the work, which prevented the absorption of Palestinians, to avoid "security risks".

Furthermore, in most of these R&D-intensive companies, the real value-added of the company is embedded in its human resources, requiring a high degree of confidence and trust in all employees. This not only prevented the employment of "outsider Palestinians", who might represent a security risk, but continues to prevent any serious cooperation or collaboration among the Israeli companies themselves for fear that trade secrets will be leaked.

After the signing of the peace accords with Egypt and Jordan, the Israeli labour market witnessed some flow of unskilled Egyptians and Jordanian workers, though on a much smaller scale (until very recently) in the Israeli electronics industry.

Recently, as wages of skilled Israeli human resources have risen,[74] in particular in software development, some demand for skilled expertise from neighbouring countries has been recorded. Very limited numbers of Palestinians, Jordanians and Egyptians have been recruited to work in the low end of software development.

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[73] Interviews with various concerned parties in different Arab countries.

[74] *Link*, December 1994; and IAEI, *Israel's Electronics Industries Profile.*

6. *Industry relations*

Industry relations between countries and/or firms may include: trade in components, subsystems and machinery; subcontracting; joint ventures; exchange of technology and know-how; joint production; acquisitions and mergers; and strategic alliances. The nature of such relations depends on mutual profitability and needs and is based on the level and sophistication of the industrial technologies involved and on the competitive strengths and comparative advantages of each side of the relation.

Arab electronics firms are limited in their technologies and are restricted mostly to assembling consumer items. They rely heavily on the import of technology, design, equipment, components and spare parts from foreign suppliers. These firms have very small volumes of production and do not represent a large market for manufacturers of machines or components. In consideration of these factors, the following may be stated:

(a) The sole Israeli company producing passive components[75] (and relying heavily on its international operation) does not see in the Arab firms a market worth its attention;

(b) The few Israeli companies manufacturing machinery used in IC production have no market in the Arab countries, since no Arab firms produce ICs;[76]

(c) The few American subsidiaries established recently for manufacturing ICs in Israel are operated as part of an international set-up, and all of their production is re-exported and distributed under TNC brand names;[77]

(d) The start-up innovative companies in the Israeli electronics industry are knowledge-intensive, targeting sophisticated markets in more advanced countries, and opting for integration with larger TNCs. They have no interest in and no capabilities for establishing links with the less sophisticated Arab firms.[78]

Thus, even if a comprehensive and just peace prevails, the current status of electronics firms in the region would not provide serious opportunities for industry relations of a regional scope. Any such relations would first require drastic changes in the structure and the production strategies on both sides of the border.

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[75] *Link*, December 1994.

[76] See the country papers referred to in note 2 above.

[77] Nougaret, op. cit.; direct communication from IAEI; and *Link*, June 1995.

[78] *Link*, November-December 1996.

7. *The case of software expertise*[79]

Software development is knowledge-intensive and human resources-intensive, in spite of all the automated tools and the techniques that have been developed to meet the increasing demand for the output produced by high-level software experts. This global demand is continuing to drive upward the wages of qualified software developers.

High-tech companies in Israel are based on their competitive strength of having a large pool of reasonably priced, high-quality software developers, an advantage that has also attracted the R&D and product design and development centres of TNCs (however, the increasing demand for qualified software developers has driven up wages in Israel). There is now a shortage, estimated at a few thousand experts in 1996, but steadily increasing. Many Israeli companies have been forced to seek out additional support through recruitment or subcontracting, in cheap-wage countries such as India and more recently in Jordan, Egypt and the occupied territories.

However, the need of the Israeli market for software expertise has not as yet created any serious move towards wide-scale relations in this field with the neighbouring Arab countries, because there are many other factors standing in the way of the development of such relations, among them the following:

(a) *The availability of skills*

Software expertise and skills vary tremendously, from the limited skills of programmers and operators, to the high-level expertise of the experienced, object-oriented developer who can lead a team or who can at least work harmoniously and fruitfully as a member of a development team, a skill whose development requires many years of training and experience. As software systems become increasingly complex, individual developers—even the most competent developers—are becoming less and less capable of bringing to market competitive products without the collaboration of large teams where there is a clear division of tasks and assignments, and where there are harmonious work relations, which are essential for the coordination of sensitively linked development tasks. It is these highly qualified, experienced experts capable of leading or working as a member of development teams who are in high demand. In the Arab countries there is a scarcity of high-level expertise and an even greater scarcity of experts capable of working harmoniously in teams.

(b) *The readiness and capability of Arab companies to engage in subcontracting*

Most Arab software companies are small software houses operating as sales agents of foreign products, or as developers of traditional customized software; only a very few of these companies are capable of developing large-scale systems. Most companies employ fewer than 10 experts; each expert operates alone or in small teams of two or three at the

[79] *Link*, April 1995, May 1995 and September 1995; Nougaret, op. cit.; and Abu El Haj, op. cit.

most, and thus has no opportunity to acquire experience in the operation and coordination of a large team. Only a few of the companies are interested in or capable of keeping up to date with worldwide innovations in a field that is characterized by very rapid change. In such conditions and with such limited capacities, it would be extremely difficult for Arab companies to undertake subcontracting tasks, unless they first carried out serious restructuring and retraining. Such rehabilitation and retraining programmes may be supported by the Government to cover overhead expenses; otherwise it has to be undertaken, at high cost and risk, by the contracting side, which is what is happening in the Israeli textiles and garment companies.

(c) *The requisite infrastructure*

The infrastructure needed for successful software subcontracting particularly includes well-developed rapid data communication networks that can secure on-line communication between contracting parties. Israel is developing such networks. There are no plans for now, however, to develop high-speed (high-cost) data networks in the Arab countries.

(d) *Professional atmosphere of confidence and mutual trust*

Because of the importance of trade secrets, a higher degree of confidence and mutual trust is needed in software subcontracting than in most other industries. Any software lead in the market is based on continuous innovations in tools, techniques and development strategies, and any leak related to these aspects may result in heavy losses with regard to the human and financial resources that the company has allocated to the software development. Confidence and trust are usually built gradually, over long periods of time, whereby each side learns about the other's skills, capabilities and loyalty. For Arab and Israeli companies, there are in addition psychological, emotional and political barriers to trust which were erected over long periods of confrontation and enmity and which would have to be broken down. While it may be easier to overcome these difficulties for less "trust-critical" industries (the textiles and garment industries, for example), greater effort and a better political atmosphere would be needed to dismantle such barriers in the field of software development.

V. CASES OF EARLY RELATIONS[80]

A. THE OPENING OF THE PALESTINIAN MARKET[81]

One important impact of the peace process is the reopening of the occupied territories' markets to trade with Arab countries, although there are still many barriers and hurdles facing the reintegration of the Palestinian economy into the economies of the region outside Israel. In the field of electronics, there has been a slow but noticeable movement of Arab products and services towards the Palestinian market, in the face of a strong Israeli presence in the economy of the occupied territories.

Consumer electronics assembled in Arab countries, including consumer communications equipment, do not have any comparative advantages, and have been unable to compete in the "open" Palestinian market, because of cheaper, higher-quality products from Israel and from TNCs.

In software, the situation is slightly more promising, owing to the need for arabized products. Software packages and programmes processing the Arabic language have been steadily penetrating the Palestinian market. Though some of these products—such as Windows—have been arabized by TNCs, other products developed in Egypt, and to some extent products developed in Jordan, have been able to find places with Palestinian clients, in particular subsidiaries of parent companies located in Arab countries, for example banks, airlines and business companies. Furthermore, the Palestinian market has also seen the "migration" of some software houses, from Egypt or Jordan, and/or the opening of subsidiaries of software houses located in Egypt and Jordan. The important factors in this "migration" are the following: (a) Palestinian expatriates who are interested in returning to the occupied territories; (b) the needs of the growing Palestinian market; (c) the scarcity of locally available Palestinian expertise; and (d) encouragement from the Palestinian Authority, which wants to re-establish links with the economies of the neighbouring Arab countries.

Besides trade relations, few activities between Palestinians and the Israeli electronics industry were apparent. In the early 1990s a few Palestinian experts were recruited as programmers to work inside Israel. However, as security measures tightened, the number was reduced. In 1995, Israel announced to the Palestinian side a need for more than 5,000 Palestinian experts in software, to work with Israeli companies;[82] the offer never materialized. In 1996 there was an Israeli proposal to set up a joint high-tech and software

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[80] See the country and area papers included in these proceedings; this section also contains information obtained by direct interviews with the companies involved.

[81] R. Khoury, "Changes in Jordan's higher technology sector (electronics and computers"), included in the present proceedings; Development Resource Center (DRC), Gaza, "The impact of the peace process on the electronics and software industries in the West Bank and the Gaza Strip"; and direct interviews with the Palestinian Authority.

[82] Direct communication with the Palestinian Authority.

training border-zone centre, with a total budget of $15 million, but no finances were mobilized for the project.

Some private Palestinian and Israeli companies have negotiated joint business opportunities, but no concrete project has been openly recorded, though there may have been some joint projects established through a third partner (American or European). No Palestinian TRIDE programme (see below) has been negotiated as yet, though the Palestinian Authority is interested in negotiating a joint programme of this type.[83]

B. THE JORDANIAN SIDE[84]

Since the signing of the peace accord between Egypt and Israel in the early 1980s, and during the short period of time that has elapsed since the signing of the peace accords between the Palestinians and Israel and between Jordan and Israel in the early 1990s, few activities have been recorded between any of the Arab sides and Israel in electronics or related areas. Only limited indications of the Israeli market's needs for software experts have been recorded.

Among the better known initiatives is the TRIDE partnership programme involving Israel, Jordan and the United States. Similar programmes are still being negotiated between Egypt, Israel, the United States and the Palestinians.

This programme is an offspring of the BIRD programme between the United States and Israel described above. Funding for TRIDE comes from shares contributed equally by each of the three parties concerned and eventually will come from repayment income by companies participating in successful TRIDE-funded projects. TRIDE supports American-Israeli-Jordanian companies' partnerships dedicated to developing and commercializing non-defence-related innovative products or processes, though not exclusively in the electronics sector.

TRIDE expects potential strategic partners from the United States to be introduced to target Israeli and Jordanian firms. The companies meet and independently agree on a financial, legal and operating framework. These companies then have to price competitively the required technological and production expertise. The Israeli and Jordanian partners must be willing to be guided by and/or cooperate with an American partner in the process of product development and commercialization. TRIDE funds 50% of company's expenses in developing a product to the stage of commercial readiness. Such funding, however, does not entitle TRIDE to equity or intellectual property rights. If the project is a commercial success, TRIDE receives repayments from the recipients, amounting to a maximum of 150% of the funding. Companies not realizing commercial benefits from the project are not under any

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[83] Direct communication with the Palestinian Authority.

[84] R. Khoury, "Changes in Jordan's higher technology sector (electronics and computers)"; and direct interviews with the various Jordanian agencies concerned.

obligation to repay TRIDE. The Jordan Technology Group (JTG) acts as the Jordanian technical consultant to TRIDE.

To date, three TRIDE projects have been considered. The first proposes to arabize educational multimedia materials, including technical and vocational items. The second proposes to create an arabized document management system, using optical character recognition to deal with malleable texts. The third proposes to create Arabic-language-based browser software.

(a) TESA (Technological Education for Speakers of Arabic)[85]. The proposing partners are: Degem Systems/Edu-soft, from Israel ($261,098); CCS, from Jordan ($182,264); and Learning Lab, from the United States ($40,337); duration of 14 months. The project involves the development of a framework of learnware, software and hardware, oriented towards teaching Arabic-speaking students at all levels. The developed framework will be based on Degem/Edu-soft's and Learning Lab's existing technologies and products, and their adaptation to Arabic-speaking environments. According to CCS, the proposed Jordanian partner, owing to the escalating tension in late 1996 and early 1997, the project was frozen and no resources were allocated.

(b) Arabic scanner software and document archiving products.[86] The partners are: Sedco-International Systems and Electronics Development Co., from Jordan ($200,568); Shonet-Probabilistic Solutions Ltd., of Israel ($309,766); and Caere Corporation, Inc., from the United States ($164,369); duration of 12 months. The project targets the development of three software products:

(i) An Arabic version of Shonut's Scantastics—Desktop for Scanners, which will integrate Shonut and Caere's omnifont Arabic optical character recognition technology;

(ii) An upgraded version of Caere's and Shonut's Omni Page in Arabic;

(iii) A document-archiving product, to be co-marketed with the Arabic version of Shonut's Scantastics.

The project was approved and is now being implemented by the three companies concerned.

(c) The third approved project links up the Jordanian CEB with the American and Israeli segments of Motorola to create an Arabic language-based Internet browser software package.[87]

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[85] TESA project document presented to TRIDE.

[86] Project document submitted to TRIDE.

[87] R. Khoury, "Changes in Jordan's higher technology sector (electronics and computers)".

TRIDE appears to suffer from excessive "vetoing" by the Israeli side, which is trying to monopolize certain technologies and projects, reflecting the fact that Jordan and Israel are too far apart in terms of business, culture and entrepreneurship, not to mention the political differences that separate them, to engage in meaningful cooperation at the present time.

Much negotiation has been undertaken at various levels between Jordanian and Israeli public and private sector institutions in search of potential joint business opportunities in high-tech areas. Besides the TRIDE programme, a few other projects have been under consideration, among them the following:

(i) The establishment of a tripartite factory (Jordan-Israel with a company from the Netherlands) to manufacture multifaced printed circuit boards;

(ii) Israel's offer to Jordan of an international communication link (and a RAD modem) that was more than 30% lower in cost compared with other available links;

(iii) Projects for the "localization" of software applications, for example the adjustment of Israeli-developed packages, to local languages, cultures, attitudes and/or traditions.

These and other projects were negotiated with official Jordanian approval and support, and with strong American and European offers for partnership. However, none of them has yet materialized, and the first rush of enthusiasm has faded away with rising political tension.

A few Israeli software companies have established sales representatives in Jordan and have sold a few packages. These attempts have had limited results, because the Jordanian software market is very small and is dominated by cheap customized software service.

A few private Jordanian and Israeli companies, in partnership with a third party, targeted joint business opportunities outside Jordan and Israel, for example in the emerging Palestinian market. A good example is the Palestinian system for border-crossing and registration, which was negotiated by Marconi's subsidiary in Israel, in partnership with CCS from Jordan.

Most Jordanian private sector companies concerned stated that business relations with Israel are a very sensitive issue at this stage. Such relations need a stable political environment and a suitable official umbrella, for example, a joint industrial border free-zone. They also need transparency with respect to both parties, and must be economically feasible. Many Jordanian companies cited the rigid business environment in both Israel and Jordan among the barriers to transacting business.

There have been a few attempts from the Israeli side to subcontract to Jordanian software houses certain development tasks at the lower level of the technologies involved, but these attempts are still limited and quasi-secretive. Besides the prevailing political tension, the following factors were cited as impediments to the establishment of subcontracting arrangements:

(a) A wide gap in expertise between Jordanian software developers and Israeli needs, requiring serious effort to upgrade local capabilities;

(b) The lack of suitable Jordanian data communications infrastructure, which is a prerequisite for on-line software subcontracting and/or export.

Many private Jordanian companies stated that software development and subcontracting offer highly promising opportunities for Jordan, if local capabilities and infrastructure can be upgraded and enhanced. However, there is a price to pay, financially and politically, to secure the transfer of know-how to the Jordanian side, and the companies feel that the Israeli side has not shown sufficient transparency and serious interest.

Fewer than 30 cases were observed of Jordanian software developers being recruited to work inside Israel, and these all involved tasks at the lower end of technology.

Century Investment Group[88] has recently been considering two joint ventures with Motorola-USA, with possible work connections with Motorola-Israel. The first is the establishment of a "world class" centre for software programming excellence, to prepare experienced personnel to serve high-tech projects of Motorola such as telecommunications, VLSI design and others. The centre will start with 50 software experts and will expand as the need arises. The second project is to set up a Jordanian plant to manufacture ICs for Motorola to benefit from the low-cost skilled manpower in Jordan, and to help solve the problems of marketing to the Arab world.

C. THE EGYPTIAN SIDE[89]

The analysis by Ahmed ElHefnawy and Roshdy ElHadidy of the relation between Egypt and Israel in electronics-related areas was based on a questionnaire circulated to 22 electronics and software firms in Egypt. The responses to these questionnaires revealed that many formal visits had been organized between the Egyptian and Israeli sides, including a visit to Israel in 1994 by the Federation of Egyptian Industries and a visit in 1996 by a delegation of the Egyptian Businessmen's Association. Many peace dividends are expected for the Egyptian economy, in particular with the participation of a third partner; the dividends include heightened attention to development and increased flow of foreign direct investment.

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[88] Century Investment Group, direct communication; and R. Khoury, "Changes in Jordan's higher technology sector (electronics and computers)".

[89] ElHefnawy and ElHadidy, op. cit.

However, many of those contacted felt there was a potential danger, if the Arab side was not well prepared for open markets. Among the incidents of "cooperation" cited was an Egyptian company arabizing a software product from an Israeli company. A limited number of Egyptians being recruited to work with Israeli software companies has also been recorded.

On a larger scale, many TNCs (including Intel) have shown interest, as progress has been made in the peace process, in setting up production facilities in Egypt, to benefit from the cheap labour there and as a step to penetrating the Arab markets.

VI. CONCLUDING REMARKS

1. Consumption of electronic products in the Arab countries is high, but production facilities are limited, meeting only a small proportion of demand. Most production facilities are involved in assembling consumer electronics under special arrangements with foreign suppliers; no serious technology transfer takes place. Most of these facilities target their own local markets and have no export experience, tendency or capacity.

In spite of the huge volume of consumption, there are as yet no regional or national plans to develop and/or support a sustainable electronics industry that would produce at a level that is up to international standards. The local markets are very small, and there are no plans to coordinate a regional market.

2. The Arab region has a large pool of human resources in areas related to electronics industries. Semi-skilled industrial labour is relatively expensive compared with cheap-labour countries and has only limited experience in the assembly of consumer electronics. The large pool of graduates of universities and technical institutes has gained a good education but lacks practical, hands-on experience. There is a reasonable number of scientists and researchers working in related fields, but most of their work is academic in nature and lab-oriented and does not provide any real experience in product design or development or in the commercialization of research results. However, the low cost of these scientists and researchers may attract TNCs to set up their design and R&D facilities in the region.

3. The region may offer good opportunities for joint business ventures, if reasonable measures are taken to facilitate trade between various countries. Among the promising areas that may be cited are industrial instrumentation and controls, specialized embedded software, optical fibre cables and medical electronics. Large-scale consumer electronics and communications equipment may also represent good opportunities for TNC involvement, if many countries in the region participate in the various steps of production and open their markets to the products of such ventures.

4. Israel's electronics industry is heavily subsidized and is sustained by a "national vision" formulated and implemented by the Government, through the OCS and the military.

5. The growth of the Israeli electronics industry is currently based on the proliferation of small start-up companies exploiting niche market products which are military spin-offs or

which are converted cheaply from military research. These companies' competitive strengths are as follows:

(a) The country's cheap (as yet) pool of highly qualified scientists, engineers and technicians;

(b) Financial and managerial support from the OCS to high-tech companies starting up;

(c) A number of bilateral agreements providing cheap and easy access to markets in industrialized countries, as well as opportunities for joint research programmes;

(d) The availability of floating venture capital, encouraged by the high degree of credibility of the Israeli electronics industry;

(e) Strong networks with foreign partners who provide marketing, distribution and after-sale services, through various forms of strategic alliance.

6. One very important weakness of the Israeli electronics industry is the lack of consumer-electronics mass manufacturing, since the factors of production are extremely non-competitive:

(a) The unskilled labour needed for mass production is expensive;

(b) There is a lack of major companies and a lack of the managerial skills and capabilities to manage the investment and finance that would allow established companies to grow;

(c) The local market is small and physically distant from major markets.

7. Goods, capital and labour flow quickly in the direction where they can make the best profits and the fastest return. Good economic relations, on the other hand, need to be developed over time; they have to be ongoing—a fabric of continuous relationships woven out of the fibres of trade, technology and resources—in order to achieve sustainable and substantive gains for all sides. Regional relations in fields related to electronics may develop, if other factors are favourable, and when a comprehensive and just peace prevails in the region.

8. Since the signing of the peace accord between Egypt and Israel in the early 1980s and during the short period since the signing of the peace accords between the Palestinians and Israel and between Jordan and Israel in the early 1990s, little activity has been recorded between the Arab sides and Israel in electronics and related areas. Among the more commonly known initiatives is the TRIDE partnership programme between Israel, Jordan and the United States. Similar programmes are still being negotiated between Egypt, Israel, the United States and the Palestinians.

9. Even if a comprehensive and just peace prevails, the current status of electronics firms in the region does not provide serious opportunity for regional industry relations. Future relations would first require drastic changes in the industry's structure and in the production strategies on both sides of the border.

10. The Israeli market needs software expertise from its neighbours. However, only a very small number of experts from Egypt and Jordan have been recruited as yet to work with Israeli companies. There are serious technical and non-technical factors impeding possible regional cooperation in this field.

THE ISRAELI ELECTRONIC INDUSTRY

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I. MAIN FEATURES AND ECONOMIC STRUCTURE[1]

This chapter will dwell on the main features of the electronics industry and its place within the industrial sector. The electronics industry is the dominant high-tech industry in Israel.

A. PRODUCTION

Gross output and gross domestic product has been growing at a high rate in Israel. From 1985 to 1994 gross output grew at an average annual rate of 20.0% and GDP at 18.8%; these are higher rates than those recorded by the total industrial sector, for which gross output increased at a rate of 14.9% and GDP at 18.4% (tables 1 and 3). Thus from 1985 to 1994 the share of gross output and GDP of the electronics industry in the total industrial sector rose from 12.9% to 15.0% and from 17.6% to 18.5% respectively between the two years. The higher share for the latter reflects the high value added component in this industry (tables 5 and 6). This sector's share in the total economy remains modest, about 6%. The electronics industry, the main high-tech industry in Israel, has recorded the highest share in the industrial sector, however.[2]

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* Assisted by Mr. Walid Muslemani.

1 The electronics industry is the main high-tech industry in Israel. The main data sources that were used in the present study include the Central Bureau of Statistics, the Israeli Association of Electronics Industries and the Israeli Association of Software Houses, as well as interviews. Data from these sources are not strictly comparable. These data do not include the sizeable military activities in this field.

2 Bernard Avishai, "Israel's future: brainpower, high-tech–and peace." *Harvard Business Review* (November/December 1991). There is no agreement on a general definition of *high-tech industry*. Electronics may be virtually the only high-tech industry if a narrow definition is adopted that includes only those industries that apply top-of-the-line technologies in their processes, namely in electronics, genetic engineering, new materials and laser and space technologies. In one study on Israeli high-tech firms, a broader definition was adopted. This study defined high-tech firms as those with the following characteristics: (1) high technical quality of labour (high proportion of engineers and technicians); (2) endowed with new capital (defined as those firms having a high proportion of capital less than six years old; and (3) concentration on R&D activities. The study was based on a sample of 670 industrial firms in Israel for which there were abundant detailed data at the individual firm level, collected as part of the 1982/83 industrial survey. The study concluded that the high-tech firms were responsible for the "majority of output in the electronics, transport equipment, metals, chemicals, and mineral industries." In 1965 these industries accounted for 37% of the industrial output in Israel, and in 1985 they produced 56% of total industrial output. When these results were applied to the data in this study (table 1), the percentage was 55.4% for 1994, the latest year for which data is available. For the year 1985/86, it was 47.3% (A. Bregman, M. Fuss and H. Reged, "High-tech firms in Israeli industry", National Bureau of Economic Research, Working Paper No. 2969, 1989).

The sector is characterized by high value added and high productivity. Value added on the average is slightly under 50%, as compared with an average value added of about 36% for the industrial sector as a whole.

Productivity measured by average gross output and GDP per employee are shown in tables 7 and 8. The electronics industry ranks the fifth in terms of gross output per employee, preceded by the chemicals, mining, basic metals and non-metal products sectors. However, when measured in terms of value added, a more indicative measure, it ranks third, after chemicals and mining.

B. INVESTMENT AND GROSS CAPITAL FORMATION

Capital formation in electronics grew at an average annual rate of 10.1% over the period covered in the study, an average below that recorded for the total industrial sector. Except for the base year, when the share in total industry was 18.2%, and the end year (1994), when it was 11.6%, the average share of gross capital formation in total investment in industry was about 14% to 15% (table 11). Besides being a technology-intensive industry, the electronics industry is also capital-intensive (table 12).

C. EMPLOYMENT

Employment in the electronics industry grew at a modest annual average of 1.2% over the period 1985-1994, lower growth than the annual average for the industry as a whole. This industry experienced a decline in the number of persons it employed, from 37,500 in 1985/86 to 34,200 in 1988. The figure rose marginally in 1990, after which it gradually increased to 41,700 by 1994. In 1985/86, the economy was suffering from recession, and in addition, the electronics sector saw reduced defense-related activities during the period in question (that is, cancellation of the Levy project) (table 13).

The electronics industry is a manpower-intensive employer and over the years recorded an increase in the share of engineers, scientists and technicians in its labour force, rising from 48% in 1985, to reach 59% by 1996, as follows:

Year	Engineers and scientists	Technicians	Others	Total	Engineers, scientists and Technicians as a percentage of total manpower
1985				37,100	48
1986	9,520	8,460	18,120	36,100	50
1987	9,500	8,400	17,600	35,500	50
1988	9,300	7,810	16,640	33,750	51
1989	9,220	7,860	15,920	33,000	52
1990	9,330	7,750	15,320	32,400	53
1991	9,940	7,880	15,180	33,000	54
1992	10,290	8,210	24,800	34,000	54
1993	11,760	9,045	15,695	36,500	57

1994	12,840	9,200	15,960	38,000	58
1995	13,550	9,650	16,800	40,000	58
1996	14,580	10,200	17,220	42,000	59

Source: Israeli Association of Electronics Industries.

The share of employment in electronics in the total industrial sector was maintained at an average of about 12% over the period in question (table 14).

D. INDUSTRIAL SUB-GROUPS AND AREAS OF SPECIALIZATION

This section presents the main industry groups in the electronics industry, both hardware and software, and describes the main areas of specialization. In addition, it includes an outline of the major electronics companies. The main source of data is the Israeli Association of Electronics Industries (IAEI) and the Israeli Association of Software Houses. Compared with the Central Bureau of Statistics data, the data from the two associations define more precisely the electronics industry, as they include all electronics equipment, including equipment with embedded electronics. The latter is included under industrial equipment in the statistics issued by the Central Bureau of Statistics. Furthermore, the software industry is also covered by the statistics issued by the two associations (see annex).

1. *Industry groups*

The industry has been classified by the IAEI under four main groups: telecommunications, industrial and medical systems, components, and defence system. The respective groups are detailed below:

Telecommunications Equipment	**Electronic components Semiconductors**	
Digital exchanges	**Passive components**	**Active components**
Multiline key telephone Systems	Resistors and networks	Tubes
Transmissions and Peripherals	Capacitors	Power supplies
Radio and mobile Communications	Transformers	Oscillators
Satellite communications	Batteries	Detectors
Data communications Equipment	PC boards, wires and Cables	Microelectronic Components

Major military systems	Major industrial and medical systems
Missiles and guided Weapons	Computerized production equipment
Anti-aircraft and anti-missile systems	Computerized control systems
Radar–airborne, naval, Ground	Test equipment
EW equipment	Training and education systems
Fire control systems	Consumer products
Command, control, Communications and intelligence systems	Imaging and diagnostic equipment
Avionics equipment	Surgical and medical instruments
Aircraft retrofit and Upgrading	Monitoring systems
Navigation and Positioning equipment	
Tactical airborne, naval And ground communications	
Sights and night vision	
Simulation and training Equipment	

Source: Israeli Association of Electronics Industries

The telecommunications industry has the highest share of the market, 34.6%, followed by defense systems, with 28.4% of the market, industrial and medical systems, 22.4%, and components, accounting for the remaining 14.6% of the market. Since 1988 the share of civilian production has been rising, owing to a slow-down in the growth of the military. The telecommunications sector has been growing rapidly.

Software: Aside from the software embedded in electronics equipment and components, specialized software houses also provide packages with various applications. Since 1984, software industries have enjoyed high growth rated–an average of 11.5% per annum.[3] By 1996, they accounted for one seventh of total electronics output. Also in 1996, the software industry had about half of the Israeli's local market. The industry is diversified and has been able to provide software for a wide range of applications both civilian and military. Multilingual software packages have been developed for a sophisticated local market, including: software for business management; graphics and

[3] Economist Intelligence Unit, "Israel's revolution in high technology," No. 4 (United Kingdom, 1983). Based on sales data from 1987 to 1996.

CD/CAM software; CD ROM and multimedia products for education entertainment; application generators; databases; artificial intelligence; software for voice recognition; Internet-related software; and highly sophisticated software for specific industries. The defence sector remains a major consumer of software.

At the international level, the software industry in Israel has carried out a niche in certain areas including defence, commerce and education, and in developing software tools. The defence industry specializes in real time application, avionics software, communications systems, and command and control applications. Israel is well-endowed with highly specialized computer scientists and engineers (over 8,500) and a great number (over 300) of experienced software houses, a number of which have accumulated experience in developing highly sophisticated software packages. This, combined until recently with relatively low wages, enabled Israel to become a major international centre for software design and development.

2. *Electronics companies*

The electronics industry consists of a great number of companies; for the most part, these are small companies. A few companies dominate, producing more than 80%-90% of the industry's total output. The major companies in the hardware and software industry are listed below:

Electronics companies

	Turnover, 1995		Exports, 1995		
	(Millions of US$)	Growth 1994	Growth 1994	Percentage sales	Number of employees
Israel Electric Corp.	2 0581.1	8.1			13,372
Israel Aircraft Industries	1 394.2	-3.7	-14.6	67.3	13,262
Tadiran	1 048.8	21.5	25.0	46.5	8,135
Elbit	968.1	27.6	33.9	85.9	5,432
Motorola Israel	768.7	14.2	11.1	30.5	3,150
Scitex	729.0	3.5	4.1	99.6	3,600
ECI	451.4	17.4	8.8	64.1	2,438
Telrad	401.0	10.5	-1.8	42.0	2,662
Tadiran Telecom	388.0	26.0	36.8	30.7	2,400
Electra Consumer Products	334.3	49.9	75.1	55.3	1,700

Software companies

	Turnover (Millions of US$)	Number of employees
IBM Israel	269.0	840
Aurec	19	250
Digital	135.6	386
Clal Computer & Technology	79.8	750
C.M.S. (H.P)	75.1	160
Team Computer	70.1	500
IE Mittewock (NCR)	65.0	230
Formula	63.3	850
Super Email	50.6	110
Israel Local Authorities	49.4	451

Source: Dunn and Bradstreet, 1996.

A large number of Israeli companies have entered into joint ventures with international companies, including multinationals aiming at cooperation in developing and exchanging technologies and at opening the international market to Israeli products. The types of cooperation arrangements, especially in software electronics, include: marketing agreements with distributors and systems houses abroad; and outsourcing, contract programming, subcontracting and joint projects with local software houses.

In addition, multinational corporations have established subsidiaries in Israel, among them Microsoft, IBM, Digital, Hewlett Packard, National Semiconductor, Motorola and Intel. The recent Intel investment is by far the largest foreign investment in industry. The main activities in which these companies have been engaged is the field of R&D and the development of software packages. The R&D centres have been used for innovation and development of new generations of products. Intel, Motorola, National Semiconductor and Digital developed their new process chips at R&D centres in Jerusalem and Herzeliya.

Local companies have also been able to gain access to American stock markets and more recently stock markets in the United Kingdom.

E. COMPARATIVE ADVANTAGE IN HIGH-TECH INDUSTRIES

Israel has a comparative advantage in high-tech industries, which derives from its endowment of a relatively high level of science and technology resources. For instance, a high percentage of the population has a post-secondary school education. Furthermore, the country has a good scientific and technology infrastructure which includes distinguished universities and research institutions. As table 15 shows, considering the relatively small size of its economy, the country recorded a globally leading position in a number of areas. This includes the number of articles published in science and engineering

and the number of times such articles are cited by other researchers, in addition to the number of registered patents. The proportion of total expenditure on R&D to GDP is just under three percentage points, a figure close to those recorded for Germany, Japan, the United Kingdom and the United States (see table 15).

Nevertheless, Israel's comparative advantage has not been translated into a development of its full potential in high-tech industries. This is confirmed by the relatively low revealed comparative advantage (RCA) index for Israel, which was negative (-30.7). The highest figure was recorded for Japan (83.7), followed at a great distance by Germany (28.7) and the United States (17.2). RCA measures countries' actual capabilities in production and export and the level of dependence on imports in an industry or group of industries. In this case, it is calculated for science-based products (table 15).[4]

A number of factors have contributed to this. One important factor has been a weakness in the country's capabilities and experience in breaking through the international market, which is a highly competitive market that is also extremely sophisticated and dominated by powerful multinationals from the United States, Japan and Europe. A second factor is the relatively high cost of the labour force, especially in the lower level categories. In recent years, high costs and shortages in certain high-level manpower categories (that is, software programmes) have been reported. The high cost structure has posed a serious obstacle to building production capabilities in mass-produced products. A third important factor has been the investment environment that has arisen from the region's political instability and until recently the Arab boycott. International investors, including multinationals, have been reluctant to develop Israel as a regional manufacturing centre for export.

II. POLICIES AND INCENTIVES

Industrialization policies need to be discussed within the framework of the country's overall economic policy and development strategy. As elaborated on in the Multi-Year Plan for the Israeli Economy, 1995-2000, the objective of economic planning and development is to sustain the rapid economic development that was achieved in the first half of the current decade. Economic growth during this period was greatly influenced by:

- The wave of immigration from the former Soviet bloc
- The peace process
- The Government's continued implementation of economic reforms and economic liberalization that started a decade ago

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[4] Israel, Central Bureau of Statistics, *Industry and Crafts Survey,* 1985-1996. The index is calculated as follows: RCA = 100[(ES – 1)(ES + 1)]. ES = [EXTOT/IMTOT]. EX represents a country's total exports of high-tech products. IM is the country's improts of such products, EXTOT = total exports of manufactured goods, and IMTOT = total imports of manufactured goods.

"The central goal of economic planning for the coming years is to achieve rapid, sustainable export-driven economic growth, while in so far as possible improving income distribution and socio-economic well-being, decreasing inflation and lowering employment" (Multi Year Plan, 1994, p. 6). The targeted rate of growth in GDP is 4.9%, or attaining a 40% increase in GDP in the year 2000 over the figure recorded in 1993. Exports of industrial products are expected to play a leading role in meeting the country's export goals.

Since human capital is being considered the foundation for long-term economic development, development of human capital has been given high priority in the plan. For example, increased investment in education (which includes technological education) has been strongly supported. R&D in industry is being encouraged and supported, especially in view of the slow-down in R&D in the defence industry. "It is therefore imperative to identify and stimulate high-potential scientific industries in order to assure the continuation of the technological development of Israel" (Multi-Year Plan, p. 32).

The above-mentioned government declaration (as well as other statements) indicates a certain policy support for high-tech industries. However, the picture drawn so far would be incomplete without elaborating on an "ideological" industrial policy issue that has engaged policy makers in Israel but that has yet to been resolved. The traditionally prevailing industrial policy in Israel is centred around providing industry with heavy protection and with incentives and a promotion system geared towards promoting labour-intensive industries. It is true that in a number of countries–especially developing countries–such policies and the associated incentives and protective measures have prevailed until recently. In Israel, however, this policy has an added ideological dimension, since promoting labour-intensive industries is imperative in a country that needs to create employment to be able to absorb immigrants. Under this traditional policy, the public sector has been heavily involved in investment in industry, and public corporations have dominated the manufacturing sector. The free market school, in contrast to the above-mentioned policy, calls for liberalization of the economy and for reduction in the role of Government in the economy. Over the past decade, progress has been made in introducing economic reforms and liberalizing the economy. This includes, *inter alia*: the liberalization of trade and reduction of tariffs associated with agreements concluded with the EU and free-trade agreements concluded with Canada and the United States; progress in the privatization of public sector companies; and monetary and exchange reforms (these reforms, however, are far from being complete and need to continue into the future and more action is needed in the fields of monetary and capital liberalization).[5]

A wide variety of promotion and incentive packages has been available for those investing in industry. In addition, generous depreciation allowances and R&D incentives,

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[5] Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, 1985-1996; Bernard Avishai, "Israel's future: brainpower, high tech–and peace", *Harvard Business Review* (November-December 1991).

as well as a wide variety of service institutions, are part of the promotion system. The electronics industry has not been specifically targeted in the available packages and in the overall system of promotion and incentives, yet it has enjoyed the lion's share of these, arising from the fact that this industry is foot-loose, has a high proportion of foreign investment and is export-oriented.

Investment incentives

Promotion incentives include grants, government guarantees-cum-tax exemption, and a combination of grants and guarantees.

(a) *Grants*

Cash investment and capital grants are offered for approved enterprises that are located in designated development areas as follows:[6] development area A, 20%; and development area B, 10%.[7]

Development area A includes thinly populated areas in northern Israel (Galilee, Golan), Afula, Beer Sheva, the south of the Negev and Eilat. High-tech and skill-intensive enterprises located in Jerusalem that satisfy certain criteria may be granted status of development area A.

In addition to qualifying for grants, approved enterprises are also entitled to a lower tax rate of 25% compared with the usual 34%; this applies for a period of 7 years. The rate is further reduced in the case of foreign investment in the company, and the more generous tax treatment extends for 10 years instead of 7. The rate is progressively reduced as follows:

Percentage of foreign ownership	Company tax rate
25-49	25
49-74	20
74-90	15
90-100	10

Source: Bank of Israel and Ministry of Finance.

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[6] "High technology", Israel Economist (May 1994). Sources for this data are the Bank of Israel and the Ministry of Finance.

[7] Israel, Ministry of Economy and Planning, Multi-Year Plan for the Israeli Economy, 1995-2000 (1994). In recent years, grants have been gradually reduced from a high of 38% in area A and 20% in area B respectively, first to 25% and 17%, and then to the current level reported.

(b) *Grant and direct tax exemption*

Approved enterprises may forego grants and opt instead for a government guarantee and direct tax exemption. In this case, a new or expanding enterprise may obtain a State loan guarantee amounting to a maximum of two thirds of the cost of the project, along with a generous tax exemption. The law provides a tax holiday from company tax on undistributed profit for a period of ten years in the case of approved enterprises in development area A, a period of seven years in development area B, six years in area C and two years in the rest of Israel.

(c) *Combination grant and government guarantee*

Approved enterprises that opt for a combination grant and government guarantee may receive grants with respect to their investment in tangibles amounting to 25% in development area A and 10% in development area B. In addition, the State guarantees loans equal to the amount of the approved project outlays.

The electronics sector has taken an active part in the grant programme. In 1996 the Investment Centre approved $5 billion in investment, of which 82% was located in area A, and around 40% of which was in the electronics sector.

III. INVESTMENT IN RESEARCH AND DEVELOPMENT AND TECHNOLOGY SUPPORT PROGRAMME

An important driving force in the development of this industry is the high level of investment in research and development. Furthermore, Israel has developed an effective technology support programme and system for the promotion and development of industry, in particular high- tech industry.

Incentives and support for R&D are implemented under the 1984 law for the encouragement of industrial R&D. This programme is managed by the Office of the Chief Scientist. The support granted to approved R&D projects ranges from 20%-66% of the research cost. Repayments of the grant are made by successful projects. A successful project is expected to pay back the grant in the form of 3% of sales in the first three years, rising to 4% in the subsequent 4 years and 5% thereafter.

The criteria used in selecting and enterprise take into consideration the innovative aspect of the research and the managerial capability of the company in terms of production and marketing, in addition to the competitiveness of the product in the international market for high-tech products. New products are given higher support–50% of the total cost compared with 30% for improvement of products; support for products targeting the military is limited to 20%. The programme supports the transfer of military applications to the civilian market. The standard support for research in software development is 50% of the total cost.

A. EXPENDITURE ON R&D

Expenditure on R&D by the industrial sector as a whole recorded a drop in real terms after 1984 and recovered only after 1990, as indicated below:

Expenditure on R&D at constant prices[a/]

Year	Thousands of NIS[b/]	1990=100
1984/85	918.0	108.5
1985/86	1,019.6	120.5
1987	784.1	92.7
1988	734.8	85.6
1989	772.5	91.3
1990	846.2	100
1991	939.5	111.0
1992	1,009.4	119.3
1993	1,081.3	127.7

Source: Israel, Central Bureau of Statistics, *R&D Survey*, 1993. Table 2.

a/ Current expenditure deflated by consumer price index.

b/ Establishments with 50 or more employees.

Expenditure on R&D in the industrial sector as a percentage of total revenue is shown below:

Ratio (in percentage) of current expenditure on R&D to revenue[a/]

Year	Total industry	Establishments engaged in R&D
1984/85	2.46	6.33
1985/86	2.65	6.86
1987	2.09	4.97
1988	1.80	4.83
1989	1.84	5.05
1990	1.92	3.84
1991	2.08	4.50
1992	2.11	5.32
1993	2.13	5.62

Source: Israel, Central Bureau of Statistics, *Survey of R&D*, various issues.

a/ Establishments employing 50 or more persons.

The data indicate that R&D expenditure in the electronics sector comprised by far the greatest share of total expenditures, averaging more than 60% over the years. All other sectors trail far behind. Similarly, this sector had the lion's share of total government R&D grants and incentives, recording a rise from about 65% in 1990 to over 70% by 1994 (tables 16-18). The dominance of this sector is highlighted when international comparisons are made, as shown in table 19. The share of electronics in total investment is the highest for Israel–63% in 1991–with the closest countries having only about half the percentage shown by Israel.

Grants and incentives comprised an average of 21% of total expenditure by the industrial sector. For the electronics industry, government grants represented about 24% of R&D expenditure.

B. SUPPORT PROGRAMMES

An elaborate programme of support is in place to promote high-tech industries. Besides the country's business incubators and other support provided by the Israeli Government, there are several international programmes that promote the development of new, commercially viable technology.

1. *Technological incubators*

The technological incubator programme is one of the important instruments for "start up" companies in high-tech activities in Israel. Though the programme does not target electronics, most of the projects it has sponsored have been in fields linked to electronics. Since the programme began in 1991, 32% of the projects have been in electronics, 22% in software, and 9% in medical equipment. In 1996 it was reported that more than 160 incubated projects had been in the fields of communications, computer courseware, hardware, software, electronics, electro-optics, instrumentation, measurements, safety, and medical instrumentation (Technological Incubators in Israel. MATIMOP, the Israeli industry centre for R&D).

The incubator programme is managed by the Office of the Chief Scientist. There are 26 incubator sites, located in various parts of the country. They provide the selected project with assistance in financial, professional, administrative, logistic, managerial and legal fields. Each of the centres receives subsidies of around $170,000 per annum and handles three to four projects a year. The main criteria for selection from candidate projects is the degree of innovation of the technological idea and the production of marketable products intended for export. Besides the services of the centre, the selected project is granted a subsidy equivalent to $140,000 for a period of one year, renewable for a maximum of one more year. This subsidy is not to exceed 85% of the cost of the project, with the remaining 15% to be secured by partners. The project is established as a profit-making company with ownership shared by the inventors (50%), the employees (10%), outside partners (20%), and the incubator organization (20%). The programme has a good record; success stories account for 50% of the incubated enterprises, as compared with a 10% average in similar programmes worldwide. By the end of 1996, of the 307 projects

that had completed two years, 55% were reported to have attained their objective and were able to stand on their own, and 40% were able to mobilize capital from private partners. The size of private investment involved amounted to $70 million. Of these companies, 70 had introduced products onto the market, with combined sales amounting to about $20 million.

2. *Other support*

The Government's support system also includes preferential purchase from local manufacturing enterprises, for example the purchase of computers for the Israeli national school system.

Direct export subsidies were recently lifted, but the Israel Export Institute offers services that help promote exports.

A number of international, bilateral and multilateral agreements which support development of this sector have been concluded. They include the following:

(a) The Binational Industrial Research and Development Foundation (BIRD), established by Israel and the United States. Established in 1977, this Foundation contributes up to 50% of the capital investment of joint ventures between Israeli and American companies that seek to develop and commercialize innovative technological products or processes with significant export potential. BIRD happens to be the most active of any of the programmes that have come into existence as a result of the implementation of the various bilateral and multilateral agreements involving Israel and the United States. Most of the projects sponsored by BIRD are involved in the electronics sector.

(b) The Trilateral Industrial Development Initiative (TRIDE). Modelled after BIRD, this programme was established in 1966 by the United States, Jordan and Israel to promote and support R&D projects among companies from the three countries.

(c) The United States-Israel Science and Technology Commission. This Commission is a $30 million fund with equal parts contributed by the American and Israeli Governments for joint R&D projects.

(d) The Canada-Israel Industrial R&D Foundation (CIIRDF). Modelled after BIRD, the CIIRDF was established in 1995 with a joint grant of $2 million each year for a period of three years (1995-1997).

(e) The Fourth Framework Programme for the European Union's Commission on Science, Research and Development. A four-year programme with $15 billion in funding, it enables Israeli companies to enter joint venture agreements with EU companies. At the time of the present writing, it is not very active.

(f) Other bilateral agreements. Cooperation agreements in the field of R&D have been concluded with France, the Netherlands, Spain, Portugal, Austria, Belgium, Ireland, Singapore, and India.

III. JOINT VENTURE AND COOPERATION WITH ARAB COUNTRIES

In the literature related to the peace process and the fruits thereof, industrial cooperation and joint venture have been the subject of extensive treatment. One recurring assumption in the literature has been that such cooperation would follow a classic economic approach in that Israel would be taking advantage of its comparative advantage, including its high-tech industries, and that the Arab countries would be allocated the labor-intensive industries. Accordingly, suggestions were put forth for specific cooperation and joint ventures in the labor-intensive industries of textiles and apparel. With regard to other fields such as chemicals and fertilizers, it was suggested that Arab industry should take advantage of Israeli experience in the international markets and enter into cooperation arrangements for this purpose. Moreover, suggestions have been made for cooperation in the field of electronics. Some project ideas–with varying levels of detail–have been proposed for collaboration and joint ventures in the field of software electronics and information technology. At the Cairo Economic Summit, four projects were promoted as possible areas for regional cooperation in this field. Two other projects being promoted involve the development of software packages targeting the Arab market, as a joint venture between American, Israeli and Jordanian electronics companies. The later two projects have applied for support under the TRIDE programme. The following is a brief summary of these projects:

(a) *Regional Trade Information Network.* The project, to be located in Cairo, would serve all participating countries of the Middle East and North Africa. A "node" would be established in each of the countries and institutions participating in the network, with the objective of facilitating the business community's access to trade information. The areas of information provided would include, among others: investment and trade opportunities, markets and commodities, regulations and procedures, risk analysis, and economic and financial indicators.

(b) *Regional Tele-medicine Network.* The aim of the proposed network would be to serve physicians, radiologists, pathologists and others in the health community in the Middle East and North Africa. By utilizing tele-medicine, the proposed network nodes would be able to provide contact with specialized medical centres and access to national and international databases. The project would be located in Cairo and would have network nodes in participating countries.

(c) *Arabic Scanner Software and Document Archiving Products.* This is a tripartite joint venture of Care Corporation, United States; Sedco-International Systems and Electronic Development, Jordan; and Shonut-Probablistic Solutions, Israel. The R&D project would include three software products targeting the Arab software market:

- Development of an arabized version of Shonut's Scantastic-Desktop for Scanners, by integrating previously developed Care and Shonut software– Omnifront Arabic Optical Character Recognition technology

- Upgrading Care's and Shonut's OmniPage for Arabic

- A document-archiving product (to be developed by Sedco) and co-marketed along with the above-mentioned Shonut and Scantastic product.

Financial support is being requested from the newly created TRIDE, to make possible the development of this joint project

(d) *Technological Education for Speakers of Arabic (TESA).* TESA is a second joint project in the field of arabization of software for which support is being requested from TRIDE. The three cooperating companies are: Learning Labs, United States; Demeg System and its subsidiary EduSoft, Israel; and CCS of Jordan. Like the first project, it involves arabization and development for the Arab market of a framework of learnware, including both software and hardware. The TESA project aims at developing a comprehensive Arabic curriculum in fields that include technological education and training, learning English, and the development of basic skills for young children, utilizing a previously developed series of modules. Thus, the project would include adaptation and the needed modification to suit the Arab curriculum as follows:

(i) The Tech Prep Series Modules. This programme aims at introducing technological education into an existing traditional-curriculum school system. The series presently includes 17 different educational modules, of which the arabized project would select 8 to 10 for development in TESA. The modules are classified into a number of groups that include the following:

- Energy: solar, wind and hydro-power

- Basic technology: pneumatics, mechanics and hydraulics

- Process control: robotics and process control

- Communications and electronics: analog electronics, digital electronics, and communications

- Materials technology: two modules covering plastic materials, molding and processing

- Computerized numeric control (CNC): CNC lathes, CNC mill, and storage plotter

(ii) The English Discovery Series. This package teaches the English language using the most up-to-date technology (multimedia technology) by combining video, sound, text and graphics to deliver an effective language learning tool. The English Discovery Series was developed by Edusoft.

(iii) The Multikid Multimedia Series. This product aims at developing basic mental and social skills among young schoolchildren as a foundation for successful education and knowledge acquisition. The programme consists of 12 topics, each with two modules, one for the junior (primary school) level and a second for the senior (upper elementary school) level. In the programme, basic knowledge is integrated with a wide range of social and cultural experiences, and children explore the realms of science, art, technology and music, as well as their daily environment.

(e) *The Beta-Site Laboratory*. Part of the project involves the establishment of a laboratory in Amman to serve in the testing of and training for the developed product.

V. ISRAELI EXPORTS AND THE ARAB MARKET AS POTENTIAL FUTURE MARKET

The potential for opening trade between Israel and Arab countries has been subject to extensive debate in the economic literature related to the peace process. According to the free-trade theory, the opening of borders for trade is expected to facilitate trade, with each country trading the products in which it has comparative advantage. Accordingly, Arab countries are expected to specialize in labour-intensive industries, while Israel specializes in science-intensive products requiring a high level of skills. Geographical proximity, among other factors, helps in promoting trade, which is expected to prevail over the long term. In the short term, adjustments must be made in existing production facilities in order to meet the needs of the new markets, and new production lines catering for the new markets must be started up. The Multi-Year Plan for Israel stated that, as part of the peace process, the integration of the Israeli economy into the Middle East was an important objective of economic policy and that for both political and economic considerations it would be given priority. This will bear fruit in the long run, although "in the short run, trade prospects between Israel and Arab countries are limited, because of the great economic differences between the two economies and because of the differences in the structure of trade."[8]

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[8] Israel, Ministry of Economy and Planning, Multi-Year Plan for the Israeli Economy, 1995-2000 (1994), p. 118.

Exports of electronics have been growing at an average rate of about 12.3% per annum since 1984. The share of electronics in total sales increased from about 50% in 1984 to over 70% by 1996, as shown in table 20.[9]

Over the years, Israel has developed a high-tech electronics niche for itself in the international markets. By industry group, civilian communications and telecommunications has the highest share, followed by industrial and medical systems (29.1%), defence system (21.8%) and, finally, export of components sharing (18.7%). The export market that developed has been in high-tech products, with virtually no mass electronics products. The fastest growth that was recorded related to communications, followed by industrial equipment, electronics components, and medical equipment. The export of defence systems has been maintained at a fairly stable level. Civilian sales have steadily increased accounting for 82.2% of total exports in 1996.

The advanced countries took in the greatest share of Israel's exports in 1996, with North America (in particular the United States) having the highest share at 50% and with Europe following, at 30%, and the rest of the world, mainly South America and Asia, sharing the remaining 20%.

The bulk of Israeli exports has been in software; hardware products have been less prominent. An important field in which the industry made its greatest progress was research and development centres; a good number of international companies have established such centres in Israel. Motorola, for instance, carried out some of its advanced and innovative research in cellular communications in Israel. Similarly, Intel conducted its most important work on its 386 microprocessor at its R&D centre in Jerusalem. Software houses have also been engaged in developing software in highly sophisticated applications in the fields of education, industry and commerce.[10] It is expected that the share of exports of components in the electronics industry will rise, mainly owing to the large investment by Intel in this field.

The trade that Israel has developed with Egypt and more recently Jordan–in addition to the trade that had already been taking place through third parties, Cyprus and Greece for example, before the peace process–has been limited. No breakdown of this trade is available, and at any rate electronics products are not a major item. Some efforts have been made to enter the electronics market in Egypt and more recently Jordan, but these have met with only limited success.

One area that could likely be developed in the future is software electronics, specifically the arabization of software already developed by major multinational

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[9] Israel, Ministry of Industry and Trade, Technological Incubator in Israel, November 1996. Data used are those of the Israeli Association of Electronics Industries and the Israeli Association of Software Houses. These data are a better representation of the electronics industries than are the export data issued by the Central Bureau of Statistics, which for most years were 25%-30% lower (see annex I).

[10] Avishai, op.cit.

companies. Indeed, some work of this type has been done jointly by Israeli and American companies, as mentioned above. A second field would be telecommunications, in which Israeli companies have developed an international reputation. A third field is in control and instrumentation for the oil industry. Finally, Israel's niche that it developed over the years in military systems cannot be ignored, though this field needs great political and psychological transformation.

VI. CONCLUSION

The electronics industry in Israel has been dynamic and fast-growing, recording over the past decade an average annual growth rate in gross output and gross domestic product of 20% and 18.8% respectively. This sector dominates the high-tech industry in the country and accounts for the highest share–about one fifth–of total gross domestic industrial products; in addition, electronics has the highest share in industrial exports, amounting to about 40% in 1996.

Two main factors contributed to this achievement: (1) the country's endowment in science and technology resources, giving it a comparative advantage in the development of high-tech industries, in particular electronics, and (2) a highly developed and sophisticated military industry.

With respect to the first factor, a high percentage of the country's population is skilled manpower: About one third of the population over the age of 25 has a post-secondary school education, a ratio that is comparable to the highest recorded in advanced countries, in particular the United States and Canada. There is a good scientific and technology infrastructure, with a number of distinguished universities and research institutions. The ratio of total expenditure on research and development to GDP is just under 3%, a figure close to that recorded for Germany, Japan, the United Kingdom and the United States.

The second important factor, the highly developed and sophisticated military, contributed to the development of the electronics industry in a number of ways. First, the large military sector provided a captive local market for the development of electronics. Second, the high level of investment in R&D by the different military industries provided additional support, with among other things the spillover benefit to satellite and related industries. Last but not least in importance is the fact that the military provided training and help individuals build up experience and capabilities in production, design and management that were relevant to the operation of sophisticated high-tech industries. In general, it can be said that the military served as a business incubator in the development of these industries.

Although the two factors outlined above have been paramount in the industry's development, another factor is also important, namely a highly developed and elaborate incentive and promotion system that evolved over the years. These include investment incentives in the form of generous outright grants, tax exemptions, and a combination of grants and guaranteed government loans and are complemented by an elaborate

technology support system that includes R&D incentives, technological incubators, and an array of institutional support infrastructure.

While Israel has a comparative advantage in high tech, this advantage–for a number of reasons–has not been developed to its full potential. The first relates to the relative weakness in the country's capability to independently break into a highly competitive market dominated by multinational companies. Second, the relatively high cost structure for the lower levels of the labour force has put up a serious obstacle to the establishment of production facilities for mass-produced electronic products. Besides this, Israel's advantage in terms of the relatively low costs of certain high-level manpower, that is software programmers, has eroded in recent years. A fourth factor is that the region's political instability and the consequent poor investment environment have acted as an obstacle to multinational's development of Israel as a regional centre. Finally the local market is relatively small in size.

With respect to the potential for opening trade in electronics as a result of a gradual normalization of economic relations with Arab countries, it should be emphasized that little trade diversion can be expected in the short run. The modest level of trade that was generated between Israel on the one side and Egypt and Jordan on the other side is an example. In the longer term a potential market may be identified in various areas of specialization that Israel has developed. One area where exports have been reported is in software for various business and educational applications. This includes in particular the arabization of previously developed software packages. Another field with potential is telecommunications, and a third field is in control and instrumentation, especially for the oil industry. Finally, Israel already occupies a niche in the area of military systems.

The electronics industry has shown only limited interest in entering into joint ventures or cooperation arrangements. The few promotional activities that have been advanced have been related to the fields of information technology and electronics software. These include the Regional Trade Information Network, the Regional Tele-medicine Network, Arabic scanner software and archiving products, and Technological Education for Speakers of Arabic. Aside from such development, in the longer term one may look into the possibility of combining the respective comparative advantages of Israeli and Arab manpower to mass-produce certain electronic items under a trilateral venture-type arrangement involving multinationals, Arab countries, and Israel.

One question that arises is: what can certain Arab and developing countries learn from the Israeli experience in building up this industry? It is true that the large military establishment served as a dynamo by providing a captive market, training and infrastructure, among other things and that this may not be the case in other countries. However, other countries may still learn from Israel's experience. To begin with, the endowment of a pool of high-level manpower is a necessary but not sufficient condition for the development of this industry. The given country must also possess an advanced technological infrastructure that includes high-quality educational institutions with built-in continuous training and retraining programmes and systems. There should be highly developed research institutions and a sustained high investment in R&D. An open

window for acquiring and importing technology (in the form of joint ventures or purchase of technology) to keep up to date with fast-changing technological innovations is also needed. Incentive programmes and systems to support the development of this industry must be in place as well.

Annex I

THE DATA

Three main sources of (basically statistical) data have been used in the present study. These include the annual *Industry and Crafts Survey* and data issued by the Israeli Association of Electronics Industries (IAEI) and the Israeli Association of Software Houses. These data are not strictly comparable, as they differ in the definition of the electronics sector.

The annual *Industry and Crafts Survey* is published by the Central Bureau of Statistics. The publication is based on a survey of the population that includes establishments employing five or more persons, and certain data are adjusted using an estimate based on sample surveys of establishments with fewer than five employees. One major industrial sector that is not included in this survey is the diamond industry because (as stated by the Central Bureau of Statistics) of the difficulties in obtaining data for this sector.

The electronics sector (industrial classification 254-256) includes the manufacture of radios, gramophones, communications and electronic equipment including television sets. This sector excludes electronic imbedded machinery, which is included under machinery. It also excludes software products.

The definition of *gross output* is income arising from industrial activities adding other income revenue plus change in the stock of finished and unfinished goods.

The *gross domestic product* is derived by deduction of general expenses (such as advertising and insurance) from the census of domestic product. It also excludes the capital profits of stock. Census domestic product (value added) at market price is gross output after deduction of inputs that include consumption of materials, fuel, electricity, etc.

The data from the Israeli Association of Electronics Industries and the Israeli Association of Software Houses include data on all activities in the electronics sector. The software activities of software houses are independently reported. These data define the electronics industry more precisely. A rough comparison of the data may be illustrated using those related to export. Data from the Central Bureau of Statistics and the Association of Electronics Industries is compared below:

Electronics exports
(Millions of US$)

Year	Central Bureau of Statistics (1)	IAEI (2)	(1)/(2)
1985/86	843	985	1.17
1987	1,224	1,350	1.12
1988	1,319	1,660	1.29
1989	..	..	..
1990	1,837	2,220	1.26
1991	2,190	2,283	1.10
1992	2,275	2,660	1.23
1993	2,589	3,200	1.30
1994	3,106	3,750	1.28

Note: Two dots (..) indicate that data are not available.

Annex II

TABLES

TABLE 1. GROSS OUTPUT AT FACTOR COST, BY INDUSTRY BRANCH, 1985-1994

(Millions of NIS)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	19901.4	29579.5	33951.6	..	50698.5	61846.4	73199.7	85585.7	101,140.8
10. Mining	635.5	707.3	824.8	..	1154.4	1585.5	1796.5	2000.7	2312.9
11-12. Food	3855.9	5836	7313.7	..	9425.7	10689.9	12532.4	14476.8	16373.1
13. Textiles	866.4	1404.9	127.1	..	2350.8	2732.4	3019	3205.8	3687.6
14. Clothing	820.9	1491.8	1548.1	..	2286.6	2778.6	3294.3	4012.1	4689.8
15. Leather	152.2	289	285	..	353.2	452.2	589.8	693.6	831.5
16. Wood	466.6	813.6	822.7	..	1217.2	1510	1825.8	2248.7	2678.1
17. Paper	549.6	971.6	1086.4	..	1390.5	1566.8	1777.8	2011.5	2301.4
18. Printing	535.1	1085.8	1243.8	..	1848.9	2133.7	2632.1	3411.4	3964.9
19. Rubber	915.5	1498.4	1816.7	..	2511.2	3163.7	3939.7	4516.1	5388.8
20. Chemicals	2365.6	3295.2	3951.3	..	6464.5	7466.9	9082.7	11414.3	14089.9
21. Non-metals	588	928	1078.1	..	1879.4	2881.8	3449.8	3774.7	4551.8
22. Basic metals	483.9	629	726.1	..	1202.6	1768.9	2043.3	2002.8	2466.3
23. Metals	2328.9	3094.6	3639.5	..	5054.7	6256	7272.3	8285.6	9730.6
24. Machinery	505.8	777.4	855.5	..	1348.2	1457.4	1906.6	2453.3	3123.5
25. Electrical equipment	3067.6	4496.3	5070.4	..	8096.2	10368.2	12502.9	14967.1	18192.5
Electrical	492.7	854	907.8	..	1410.5	1815.2	2039.7	2393.4	3034.5
Electronics	2568.9	3642.3	4162.6	..	6676.7	8552.6	10423.2	12573.7	15158
26. Transport equipment	1144.1	1399.2	1455.6	..	2828.1	3478.2	3676.1	3879.3	3964.8
27. Miscellaneous	619.8	861.2	906.8	..	1286.1	1556.3	1858.5	2231.6	2793.1

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 2. GROSS OUTPUT AT FACTOR COST, BY INDUSTRY BRANCH

(Millions of US$)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	13330.25	19224.94	20149.32	..	24755.13	27089.79	26483.25	28662.32	33512.52
10. Mining	425.67	459.70	489.50	..	563. 67	694.48	649.96	673	766.37
11-12. Food	2582.74	3793.06	4340.48	..	4602.39	4682.39	4534.15	4848.23	5425.15
13. Textiles	580.33	913.10	734.18	..	1147.85	1196.85	1092.26	1073.61	1221.87
14. Clothing	549.85	969.58	918.75	..	1116.50	1217.08	1191.86	1343.64	1553.94
15. Leather	101.95	187.83	169.14	..	172.46	198.07	213.39	232.28	275.51
16. Wood	312.54	528.79	488.25	..	594.34	661.41	660.56	753.08	887.38
17. Paper	368.13	631.48	644.75	..	678.96	686.29	643.20	673.64	762.56
18. Printing	358.42	705.71	738.16	..	902.78	934.60	952.28	1142.46	1313.75
19. Rubber	613.22	973.87	1078.16	..	1226.17	1385.76	1425.36	1512.43	1785.55
20. Chemicals	1584.51	2141.69	2344.99	..	3156.49	3270.65	3286.07	3822.61	4668.62
21. Non-metals	393.85	603.14	639.82	..	917.68	1262.29	1248.12	1264.13	1508.22
22. Basic metals	324.12	408.81	430.92	..	587.21	774.81	739.25	670.73	817.20
23. Metals	1559.93	2011.31	2159.94	..	2468.12	2740.25	2631.08	2774.82	3224.19
24. Machinery	338.79	505.26	507.72	..	658.30	638.37	689.80	821.60	1034.96
25. Electrical equipment	2054.72	2922.33	3009.14	..	3953.22	4541.48	4523.48	5012.43	6028.00
Electrical	332	555.05	538.75	..	688.72	795.094	737.95	801.54	1005.47
Electronics	1720.68	2367.28	2470.39	..	3260.11	3746.21	3771.06	4210.88	5022.53
26. Transport equipment	766.34	909.40	863.86	..	1380.91	1523.52	1329.99	1299.16	1313.72
27. Miscellaneous	415.15	559.73	538.16	..	627.98	681.69	672.40	747.35	925.48

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.

Note: Two dots (..) indicate that data are not available.

TABLE 3. GROSS DOMESTIC PRODUCT AT FACTOR COST, BY INDUSTRY BRANCH, 1985-1994

(Millions of NIS)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	696	10589.8	12552.8	..	18110.6	23300.5	27156.0	31049.2	35296.7
10. Mining	289.8	285.4	384.8	..	570.6	762.5	882.6	989.3	1123.2
11-12. Food	796.3	1315.7	1833.1	..	2266.9	2629.1	3160.5	3544.3	4206.2
13. Textiles	214.0	456.5	383.2	..	633.8	795.7	908.8	916.5	1068.6
14. Clothing	251.9	531.4	496.3	..	808.8	1004.8	1222.0	1457.0	1626.7
15. Leather	54.0	100.6	102.2	..	120.8	154.7	209.1	210.7	244.3
16. Wood	151.4	289.0	319.1	..	406.5	532.0	654.4	835.6	935.3
17. Paper	136.1	2301.8	33	..	425.3	474.8	563.5	656.6	762.6
18. Printing	232.7	465.2	550.3	..	812.4	100	1235.4	1597.0	1877.7
19. Rubber	361.5	519.1	590.6	..	938.9	1255.7	1590.1	1815.4	2039.7
20. Chemicals	753.2	1125.6	1413.2	..	1957.5	2173.4	2845.8	3356.0	3777.9
21. Non-metals	181.0	321.0	375.5	..	643.4	1002.1	1171.6	1299.8	1484.8
22. Basic metals	158.7	177.6	181.4	..	290.2	41	550.4	554.1	676.8
23. Metals	993.0	1243.1	1621.4	..	2143.7	249	2972.7	3432.3	4042.2
24. Machinery	22.3	324.0	346.1	..	476.4	538.7	712.0	914.3	1173.7
25. Electrical equipment	1420.5	2100.6	2515.2	..	3816.8	4831.2	5973.2	6888.3	7610.4
Electrical	195.6	303.8	344.0	..	394.1	614.9	735.2	878.6	1093.1
Electronics	1224.9	1796.0	2171.2	..	3322.7	4189.3	5237.9	6009.7	6517.3
26. Transport equipment	560.2	762.3	800.1	..	1391.4	1727.6	1875.7	1807.8	1750.8
27. Miscellaneous	183.4	271.0	310.5	..	407.2	517.5	628.2	774.4	895.9

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 4. GROSS DOMESTIC PRODUCT AT FACTOR COST, BY INDUSTRY BRANCH, 1985-1994

(Millions of US$)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	4661.91	6882.75	7449.73	..	8843.07	10206.09	9824.89	10398.26	11695.39
10. Mining	194.11	185.49	228.37	..	278.61	333.99	319.32	331.31	372.17
11-12. Food	533.37	855.13	1087.89	..	1106.89	1151.60	1143.45	1186.97	1393.70
13. Textiles	143.34	296.70	227.42	..	309.47	348.53	328.80	306.93	354.08
14. Clothing	168.73	345.38	294.54	..	394.92	440.12	442.11	487.94	539.00
15. Leather	36.17	65.38	60.65	..	58.984	67.76	75.65	70.56	80.95
16. Wood	101.41	187.83	189.38	..	198.49	233.03	236.76	279.84	309.91
17. Paper	91.16	196.15	195.85	..	207.67	207.98	203.87	219.89	252.68
18. Printing	155.87	302.35	326.59	..	396.68	438.02	446.96	534.83	622.17
19. Rubber	242.14	337.38	350.50	..	458.45	552	575.29	607.97	675.84
20. Chemicals	504.50	731.57	838.69	..	955.81	952.00	1029.60	1123.91	1251.79
21. Non-metals	121.24	208.63	222.79	..	314.16	438.94	423.88	435.30	491.98
22. Basic metals	106.30	115.43	107.66	..	141.70	179.94	199.13	185.57	224.25
23. Metals	665.13	807.94	962.26	..	1046.73	1090.67	1075.51	1149.46	1339.36
24. Machinery	148.90	210.58	205.40	..	232.62	235.96	257.60	306.20	388.90
25. Electrical equipment	951.47	1365.27	1492.70	..	1863.67	2116.16	2161.07	2306.87	2521.67
Electrical	131.02	197.45	204.15	..	192.43	269.34	265.99	294.24	362.19
Electronics	820.45	1167.29	1288.55	..	1622.41	1835.00	1895.04	2012.63	2159.48
26. Transport equipment	375.23	495.45	474.84	..	679.39	756.72	678.62	605.43	580.12
27. Miscellaneous	122.84	176.13	184.27	..	198.83	226.68	227.28	259.34	296.85

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.

Note: Two dots (..) indicate that data are not available.

TABLE 5. GROSS OUTPUT, BY INDUSTRY BRANCH, 1985-1994

(Percentage of total)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total (millions of US$)	13330.25	19224.94	20149.32	..	24755.13	27089.97	26483.25	28662.32	33512.52
10. Mining	3.19	2.39	2.43	..	2.28	2.56	2.45	2.34	2.29
11-12. Food	19.38	19.73	21.54	..	18.59	17.28	17.12	16.92	16.19
13. Textiles	4.35	4.75	3.64	..	4.64	4.42	4.12	3.75	3.65
14. Clothing	4.12	5.04	4.56	..	4.51	4.49	4.50	4.69	4.64
15. Leather	0.76	0.98	0.84	..	0.70	0.73	0.81	0.81	0.82
16. Wood	2.34	2.75	2.42	..	2.40	2.44	2.49	2.67	2.65
17. Paper	2.76	3.28	3.20	..	2.74	2.53	2.43	2.35	2.28
18. Printing	2.69	3.67	3.66	..	3.65	3.45	3.60	3.99	3.92
19. Rubber	4.60	5.07	5.35	..	4.95	5.12	5.38	5.28	5.33
20. Chemicals	11.89	11.14	11.64	..	12.75	12.07	12.41	13.34	13.93
21. Non-metals	2.95	3.14	3.18	..	3.71	4.66	4.71	4.41	4.50
22. Basic metals	2.43	2.13	2.14	..	2.37	2.86	2.79	23.40	2.44
23. Metals	11.70	10.46	10.72	..	9.97	10.12	9.93	9.68	9.62
24. Machinery	2.54	2.63	2.52	..	2.66	2.36	2.60	2.87	3.09
25. Electrical equipment	15.41	15.20	14.93	..	15.97	16.76	17.08	17.49	17.99
Electrical	2.48	2.89	2.67	..	2.78	2.94	2.79	2.80	3.00
Electronics	12.91	12.31	12.26	..	13.17	13.83	14.24	14.69	14.99
26. Transport equipment	5.75	4.73	4.29	..	5.58	5.62	5.02	4.53	3.92
27. Miscellaneous	3.11	2.91	2.67	..	2.54	2.52	2.54	2.61	2.76

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 6. GROSS DOMESTIC PRODUCT, BY INDUSTRY BRANCH, 1985-1994

(Percentage of total)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total (millions of US$)	4661.91	6882.75	7449.73	..	8843.07	10206.09	9824.89	10398.26	11695.39
10. Mining	4.16	2.70	3.07	..	3.15	3.27	3.25	3.19	3.18
11-12. Food	11.45	12.42	14.60	..	12.52	11.28	11.64	11.42	11.92
13. Textiles	3.07	4.31	3.05	..	3.50	3.41	3.35	2.95	3.03
14. Clothing	3.62	5.02	3.95	..	4.47	4.31	4.50	4.69	4.61
15. Leather	0.78	0.95	0.81	..	0.67	0.66	0.77	0.68	0.69
16. Wood	2.18	2.73	2.54	..	2.24	2.28	2.41	2.69	2.65
17. Paper	1.96	2.85	2.63	..	2.35	2.04	2.08	2.11	2.16
18. Printing	3.34	4.39	4.38	..	4.49	4.29	4.55	5.14	5.32
19. Rubber	5.19	4.90	4.70	..	5.18	5.39	5.86	5.85	5.78
20. Chemicals	10.82	10.63	11.26	..	10.81	9.33	10.48	10.81	10.70
21. Non-metals	2.60	3.03	2.99	..	3.55	4.30	4.31	4.19	4.21
22. Basic metals	2.28	1.68	1.45	..	1.60	1.76	2.03	1.78	1.92
23. Metals	14.27	11.74	12.92	..	11.84	10.69	10.95	11.05	11.45
24. Machinery	3.19	3.06	2.76	..	2.63	2.31	2.62	2.94	3.33
25. Electrical equipment	20.41	19.84	20.04	..	0.21075	20.73	21.00	22.19	21.56
Electrical	2.81	2.87	2.74	..	21761	2.64	2.71	2.83	3.10
Electronics	17.60	16.96	17.30	..	18.35	17.98	19.29	19.36	18.46
26. Transport equipment	8.05	7.20	6.37	..	7.68	7.41	6.91	5.82	4.96
27. Miscellaneous	2.64	2.56	2.47	..	2.25	2.22	2.31	2.49	2.54

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 7. VALUE OF GROSS OUTPUT PER EMPLOYEE, BY INDUSTRY BRANCH, 1985-1994

(US$)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	44943.53	62806.09	67934.31	..	83688.73	87669.80	83097.74	86021.38	96272.69
10. Mining	101349.36	124244.20	139855.90	..	161049.10	182758.10	162491.00	163421.20	174174.60
11-12. Food	57522.02	72525.02	82361.95	..	100270.00	96743.63	94658.73	96004.46	106584.50
13. Textiles	40300.52	62115.84	56475.69	..	95654.30	99737.19	91021.47	86581.47	91184.24
14. Clothing	18830.51	28685.88	28356.60	..	33731.24	35796.55	34446.81	35735.03	41109.60
15. Leather	28318.28	45812.95	46983.18	..	50723.81	50787.87	49624.74	50496.52	58619.91
16. Wood	28672.99	47638.96	43207.90	..	54030.54	54662.02	50424.76	56622.63	61623.32
17. Paper	55777.30	85335.56	87128.08	..	106086.70	105583.10	95999.74	93561.62	104460.00
18. Printing	31440.17	52664.66	55086.58	..	56778.82	58780.10	56683.29	60769.41	63161.10
19. Rubber	48667.89	70570.46	75395.82	..	84563.58	87706.60	85351.01	83559.37	92515.72
20. Chemicals	85188.92	112130.20	121501.80	..	162705.90	177752.90	172045.60	197041.50	231119.90
21. Non-metals	46335.42	70133.22	74397.90	..	107961.90	130132.60	114506.30	118143.20	130018.70
22. Basic metals	63553.60	75706.15	97936.34	..	130490.50	154962.80	134409.90	131515.70	140896.00
23. Metals	38233.62	52106.45	56990.50	..	64106.89	64476.57	60484.56	63496.93	69040.43
24. Machinery	32576.18	52631.72	60442.28	..	68573.00	70936.00	74171.76	78247.70	85533.63
25. Electrical equipment	43624.71	66266.03	70637.08	..	9067.24	101826.90	98765.95	102713.60	115923.10
Electrical	34376.85	56065.66	64137.35	..	78263.72	89336.42	83858.21	8527.27	97618.17
Electronics	45884.99	69218.77	72233.50	..	93681.25	104935.90	101920.40	106875.20	120444.40
26. Transport equipment	37937.38	51378.43	56461.28	..	76293.27	82352.52	69999.62	71776.95	82107.36
27.Miscellaneous	48841.32	62890.97	63312.90	..	79490.95	77464.86	70041.15	73273.00	85692.63

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 8. GROSS DOMESTIC PRODUCT PER EMPLOYEE, BY INDUSTRY BRANCH, 1985-1994

(US$)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	15717.84	22485.30	25117.10	..	29895.42	33029.41	30828.02	31207.26	33597.80
10. Mining	46217.22	50133.33	65247.99	..	79603.79	87892.20	79829.96	80808.00	84583.41
11-12. Food	11879.14	16350.44	20643.13	..	24115.14	23793.36	23871.64	23504.41	27381.23
13. Textiles	9954.19	20183.56	17493.72	..	25789.39	29044.39	27399.90	24752.61	26423.55
14. Clothing	5778.30	10218.31	9090.74	..	11931.17	12944.78	12777.83	12977.23	14259.24
15. Leather	10047.22	15947.35	16848.01	..	17348.35	17374.80	17593.83	15339.70	17222.90
16. Wood	9303.67	1621.90	16759.01	..	18044.21	19258.41	18073.15	21040.55	21521.33
17. Paper	13812.39	26507.07	26465.63	..	32447.81	31995.68	30428.54	30540.67	34614.23
18. Printing	13672.45	22563.64	24372.20	..	24948.41	27548.44	266.05	28448.36	29911.87
19. Rubber	19217.31	24448.16	24510.80	..	31617.05	34811.51	34448.47	33589.53	35017.87
20. Chemicals	27123.90	38302.31	43455.67	..	49268.58	51738.75	53905.49	57933.59	61969.77
21.Non-metals	14263.12	24259.44	25905.73	..	36962.00	45251.55	38887.93	40682.06	42412.19
22. Basic metals	20843.06	21375.85	24467.22	..	31488.72	35987.74	36205.76	36385.49	38664.56
23. Metals	16302.11	20931.15	25389.32	..	27187.75	25662.83	24724.29	26303.53	28680.17
24. Machinery	14317.29	21935.53	24452.45	..	24230.96	26217.94	27698.68	29161.48	32140.49
25. Electrical equipment	20201.10	30958.44	35039.91	..	42744.77	47447.60	47184.95	47271.83	48493.65
Electrical	13647.48	19944.67	24304.08	..	21867.23	30262.76	30226.29	31302.10	35164.42
Electronics	21878.83	34131.43	37676.78	..	46621.04	51400.50	51217.39	51081.87	51786.01
26. Transport equipment	18575.75	27991.55	31035.08	..	37535.61	40903.98	35716.73	33448.91	36257.46
27. Miscellaneous	14452.24	19790.35	21679.18	..	25168.12	25758.57	23674.93	25425.84	27486.32

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 9. GROSS CAPITAL FORMATION, BY INDUSTRY BRANCH, 1985-1994

(Millions of NIS)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	1348.4	1760.3	1743.0	..	2437.5	3905.8	4883.6	6470.2	8139.3
10. Mining	79.8	40.0	52.0	..	72.9	220.4	301.0	367.7	704.2
11-12 Food	139.1	291.7	337.1	..	439.3	497.2	774.0	732.2	812.8
13. Textiles	72.7	121.2	61.5	..	138.2	131.7	224.7	196.2	239.3
14. Clothing	33.4	60.1	62.5	..	71.7	112.1	152.4	217.7	192.3
15. Leather	6.4	10.3	88.8	..	11.7	13.7	21.5	35.2	27.6
16. Wood	13.5	43.6	23.3	..	26.9	67.8	65.6	117.3	160.5
17. Paper	26.3	76.7	60.5	..	71.4	92.9	89.5	128.0	211.7
18. Printing	23.5	43.2	57.1	..	132.4	178.8	141.6	257.2	394.6
19. Rubber	85.4	139.8	123.5	..	137.4	277.6	355.0	457.9	706.7
20. Chemicals	166.1	172.0	243.4	..	382.6	524.6	848.2	1171.3	1676.4
21. Non-metals	51.5	81.3	82.0	..	129.4	314.6	296.3	674.2	630.5
22. Basic metals	16.7	39.5	41.5	..	26.5	49.4	52.9	117.8	128.7
23. Metals	166.3	219.7	202.9	..	207.0	418.3	372.3	493.7	576.0
24. Machinery	26.8	28.5	22.1	..	31.2	47.6	47.7	99.8	120.3
25. Electrical equipment	294.9	294.7	294.8	..	417.0	712.6	829.3	1024.0	1123.9
Electrical	49.7	39.3	43.4	..	100.1	151.1	97.3	99.6	178.4
Electronics	245.2	255.4	251.4	..	310.9	561.5	732.0	924.4	945.5
26. Transport equipment	60.6	59.9	38.2	..	96.3	154.5	222.4	258.3	309.4
27. Miscellaneous	31.3	40.0	31.7	..	45.8	92.0	89.1	121.7	124.3
	1294.3	1762.2	1742.9	..	2437.7	3905.8	4883.5	6470.2	8139.2

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.

Note: Two dots (..) indicate that data are not available.

TABLE 10. GROSS CAPITAL FORMATION, ELECTRONICS, 1985-1994

(Millions of US$)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	903.2	1144.1	1034.4	..	1190.2	1710.8	1766.9	2166.8	2696.9
10. Mining	53.5	26.0	30.9	..	35.6	35.6	108.9	123.1	233.3
11-12. Food	93.2	189.6	200.1	..	214.5	214.5	280.0	245.2	269.3
13. Textiles	48.7	78.8	36.5	..	67.5	67.9	81.3	65.7	79.3
14. Clothing	22.4	39.1	37.1	..	35.0	35.0	55.1	72.9	63.7
15. Leather	4.3	6.7	5.2	..	5.7	5.7	7.8	11.8	9.1
16. Wood	9.0	28.3	13.8	..	13.1	13.1	23.7	39.3	53.2
17. Paper	17.6	49.9	35.9	..	34.0	34.9	32.4	42.9	70.1
18. Printing	15.7	28.1	33.9	..	64.6	64.6	51.2	86.1	130.7
,19. Rubber	57.2	90.9	73.3	..	67.1	67.1	128.4	153.3	234.2
20. Chemicals	111.3	111.8	144.5	..	186.8	186.8	306.9	392.3	555.5
21. Non-metals	34.5	52.8	48.7	..	63.2	63.2	107.2	225.8	208.9
22. Basic metals	11.2	25.7	24.6	..	12.9	12.9	19.1	39.5	42.6
23. Metals	111.4	142.8	120.4	..	101.1	101.1	134.7	165.3	190.9
24. Machinery	18.0	18.5	13.1	..	15.2	15.2	17.3	33.4	39.9
25. Electrical equipment	197.5	191.5	175.0	..	203.6	203.6	300.0	342.9	372.4
Electrical	33.3	25.5	25.8	..	48.9	48.9	35.2	33.4	59.1
Electronics	164.2	166.0	149.2	..	151.8	151.8	264.8	309.6	313.3
26. Transport equipment	40.6	38.9	22.7	..	47.0	47.0	80.5	86.5	102.5
27. Miscellaneous	21.0	26.0	18.8	..	22.4	22.4	32.2	40.8	41.2
	866.9	1145.3	1034.4	..	1190.3	1190.3	1766.8	2166.8	2696.9

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 11. GROSS CAPITAL FORMATION, BY INDUSTRY BRANCH, 1985-1994

(Percentage of total)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total (millions of $)	1348.4	1760.3	1743.0	..	2437.5	1710.8	1766.9	2166.8	
10. Mining	5.92	2.27	2.98	..	2.99	5.64	6.16	5.68	8.65
11-12. Food	5.92	16.57	19.34	..	18.02	12.73	15.8	11.32	9.99
13. Textiles	5.39	6.89	3.53	..	5.67	3.37	4.60	3.03	2.94
14. Clothing	2.48	3.41	0.50	..	2.94	2.81	3.12	3.36	2.36
15. Leather	0.47	0.59	13.37	..	0.48	0.35	0.44	0.54	0.34
16. Wood	1.00	2.48	3.47	..	1.10	1.74	1.34	1.81	1.97
17. Paper	1.95	4.36	3.28	..	2.93	2.38	1.83	1.98	2.60
18. Printing	1.74	2.45	7.09	..	5.43	4.56	2.90	3.98	4.85
19. Rubber	6.33	7.94	13.96	..	5.64	7.11	7.27	7.08	8.68
20. Chemicals	12.32	9.77	4.70	..	15.70	13.43	17.37	18.10	20.60
21. Non-metals	3.82	4.62	2.38	..	5.31	8.05	6.07	10.42	7.75
22. Basic metals	1.24	2.24	11.63	..	1.09	1.26	1.08	1.82	1.58
23. Metals	12.33	12.48	1.27	..	8.49	10.71	7.62	7.63	7.08
24. Machinery	1.99	1.62	16.90	..	1.28	1.22	0.98	1.54	1.48
25. Electrical equipment	21.87	16.74	2.49	..	17.11	18.24	16.98	15.83	13.81
Electrical	3.69	2.23	14.42	..	4.10	3.87	1.99	1.54	2.19
Electronics	18.18	14.51	2.19	..	1.28	14.38	14.99	14.29	11.62
26. Transport equipment	4.49	3.40	1.82	..	3.95	3.96	4.55	3.99	3.80
27. Miscellaneous	2.32	2.27		..	1.88	2.36	1.82	1.88	1.53

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.

Note: Two dots (..) indicate that data are not available.

TABLE 12. GROSS CAPITAL FORMATION PER EMPLOYEE, BY INDUSTRY BRANCH, 1985-1994

(US$)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	3045	3737	3487	..	4023	5536	5543	6503	7747
10. Mining	12726	7026	8817	..	10170	25405	27225	30034	53030
11-12. Food	2075	3625	3796	..	4673	4499	5846	4855	5291
13. Textiles	3381	5358	2807	..	5623	4807	6774	5298	5917
14. Clothing	766	1155	1144	..	1057	1444	1593	1939	1685
15. Leather	1190	1632	1450	..	1680	1538	1808	2562	1945
16. Wood	829	2552	1223	..	1194	2454	1811	2953	3693
17. Paper	2669	6736	4852	..	5447	6260	4832	5953	9609
18. Printing	1380	2095	2528	..	4065	4925	3049	4581	6286
19. Rubber	4539	6584	5125	..	4626	7695	7690	8472	12132
20. Chemicals	5981	5852	7484	..	9629	12788	16066	20219	27498
21. Non-metals	4058	6144	5685	..	7433	14206	9834	21101	18009
22. Basic metals	2193	4754	5597	..	2875	4327	3479	7735	7352
23. Metals	2730	3699	3177	..	2625	4311	3096	3783	4086
24. Machinery	1726	1929	1561	..	1586	2316	1855	3183	3294
25. Electrical equipment	4193	4343	4106	..	4670	6998	6551	7027	7161
Electrical	3467	2580	3066	..	5554	7436	4000	3548	5739
Electronics	4379	4853	4362	..	4362	6889	7157	7857	7512
26. Transport equipment	2009	2199	1481	..	2597	3658	4234	4779	6407
27. Miscellaneous	2466	2921	2213	..	2830	4579	3357	3995	3813

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 13. EMPLOYMENT BY INDUSTRY SUBSECTOR, 1985-1994

(Thousands)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	296.6	306.1	296.6	..	295.8	309	318.7	333.2	348.1
10. Mining	4.2	3.7	3.5	..	3.5	3.8	4	4.1	4.4
11-12. Food	44.9	52.3	52.7	..	45.9	48.4	47.9	50.5	50.9
13. Textiles	14.4	14.7	13	..	12	12	12	12.4	13.4
14. Clothing	29.2	33.8	32.4	..	33.1	34	34.6	37.6	37.8
15. Leather	3.6	4.1	3.6	..	3.4	3.9	4.3	4.6	4.7
16. Wood	10.9	11.1	11.3	..	11	12.1	13.1	13.3	14.4
17. Paper	6.6	7.4	7.4	..	6.4	6.5	6.7	7.2	7.3
18. Printing	11.4	13.4	13.4	..	15.9	15.9	16.8	18.8	20.8
19. Rubber	12.6	13.8	14.3	..	14.5	15.8	16.7	18.1	19.3
20. Chemicals	18.6	19.1	19.3	..	19.4	18.4	19.1	19.4	20.2
21. Non-metals	8.5	8.6	8.6	..	8.5	9.7	10.9	10.7	11.6
22. Basic metals	5.1	5.4	4.4	..	4.5	5	5.5	5.1	5.8
23. Metals	40.8	38.6	37.9	..	38.5	42.5	43.5	43.7	46.7
24. Machinery	10.4	9.6	8.4	..	9.6	9	9.3	10.5	12.1
25. Electrical equipment	47.1	44.1	42.6	..	43.6	44.6	45.8	48.8	52
Electrical	9.6	9.9	8.4	..	8.8	8.9	8.8	9.4	10.3
Electronics	37.5	34.2	34.2	..	34.8	35.7	37	39.4	41.7
26. Transport equipment	10.2	17.7	15.3	..	18.1	18.5	19	18.1	16
27. Miscellaneous	8.5	8.9	8.5	..	7.9	8.8	9.6	10.2	10.8

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.

Note: Two dots (..) indicate that data are not available.

TABLE 14. EMPLOYEES BY INDUSTRY BRANCH, 1985-1994

(Percentage)

Israeli industrial classification	1985/86	1987	1988	1989	1990	1991	1992	1993	1994
Total	296.6	306.1	296.6	..	295.8	309.0	318.7	333.2	348.1
10. Mining	1.42	1.21	1.18	..	1.18	1.23	1.26	1.23	1.26
11-12. Food	15.14	17.09	17.77	..	15.52	15.66	15.03	15.16	14.62
13. Textiles	4.86	4.80	4.38	..	4.06	3.88	3.77	3.72	3.85
14. Clothing	9.84	11.04	10.92	..	11.19	11.00	10.86	11.28	10.86
15. Leather	1.21	1.34	1.21	..	1.15	1.26	1.35	1.38	1.35
16. Wood	3.67	3.63	3.81	..	3.72	3.92	4.11	3.99	4.14
17. Paper	2.23	2.42	2.49	..	2.16	2.10	2.10	2.16	2.10
18. Printing	3.84	4.38	4.52	..	5.38	5.15	5.27	5.64	5.98
19. Rubber	4.25	4.51	4.82	..	4.90	5.11	5.24	5.43	5.54
20. Chemicals	6.27	6.24	6.51	..	6.56	5.95	5.99	5.82	5.80
21. Non-metals	2.87	2.81	2.90	..	2.87	3.14	3.42	3.21	3.33
22. Basic metals	1.72	1.76	1.48	..	1.52	1.62	1.73	1.53	1.67
23. Metals	1.38	12.61	12.78	..	13.02	13.75	13.65	13.12	13.42
24. Machinery	3.51	3.14	2.83	..	3.25	2.91	2.92	3.15	3.48
25. Electrical equipment	15.88	14.41	14.36	..	14.74	14.43	14.37	14.65	14.94
Electrical	3.24	3.23	2.83	..	2.98	2.88	2.76	2.82	29.59
Electronics	12.64	11.17	11.53	..	11.76	11.55	11.61	11.82	11.98
26. Transport equipment	6.81	5.78	5.16	..	6.12	5.99	5.96	5.43	4.60
27. Miscellaneous	2.87	2.91	2.87	..	2.67	2.85	3.01	3.06	3.10

Source: Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.
Note: Two dots (..) indicate that data are not available.

TABLE 15. DATA ON KNOWLEDGE-BASED EXPORTS, R&D, PATENTS, AND SCIENTIFIC AND TECHNOLOGICAL PUBLICATIONS

Country	Revealed comparative advantage a/	GERDb// GDP (%) c/	Cumulative number of patents	Number of patents (1984-1986)	Citations (1981-1985) d//GDP	Number of publications (1981-1985) e//GDP
Germany	28.7	2.54	58.25	16.10	264.4	82.59
France	-2.1	2.16	24.05	6.70	212.1	74.89
United Kingdom	9.07	2.34	26.64	7.20	340.3	108.41
Netherlands	-11.22	2.01	31.05	9.40	278.2	82.98
Belgium/Luxembourg	9.47	1.53	15.18	4.30	157.60	63.10
Denmark	-16.55	1.18	15.17	4.60	279.20	66.80
Ireland	11.84	0.74	8.39	3.40	111.30	48.10
Spain	-25.80	0.45	1.60	0.60	49.40	13.90
Italy	-23.46	0.95	9.42	2.85	87.10	35.70
Greece	-87.57	0.28	0.60	0.18	82.00	47.78
Portugal	-73.06	0.38	0.14	4	18.60	12.53
United States	17.30	2.65	33.20	10	324.30	79.32
Japan	83.70	2.57	64.93	25.47	140.10	58.10
Canada	-18.70	1.34	10.32	3.48	243.40	92.70
Israel	**-30.69**	**2.89**	**35.48**	**12.89**	**967.20**	**325.98**

Sources: H. Grupp, S. Maital, A. Frenkel and K. Koschatzky, "The relation between technological excellence and export sales: a data envelopment model and case-study of Israel and European countries", *Research Evaluation* (August 1992), pp. 87-101; S. Maital , H. Grupp, A. Frenkel and K. Koschatzky, "The relation between scientific and technological excellence and export sales: theoretical model and empirical test", *Science and Technology Policy* (June 1994), pp. 138-146; and Shlomo Maital, "Peace, trade and technology in the new Mid-East", *Technology and Society*, vol. 17, No. 2 (1995).

a/ For science-based product groups, 1988, defined as RCA=100 [(ES2-1)(ES2 + 1)], where export share (ES)=[EX/IM]÷[EXTOT/IMTOT], and where EX is a country's total exports of high-tech products, IM is that country's imports of such products, EXTOT is the country's total exports of manufactures, and IMTOT is the country's total import of manufactures.

b/ Gross expenditure on R&D, annual average for 1981-1985, converted to US$ using the purchasing power index of OECD, in billions of dollars. Source: OECD, scientific indicators, R&D data for Israel are taken from the *Central Statistical Yearbook.*

c/ GDP average for 1981-1985, billions of US$, converted to US$ using the purchasing power parity index.

d/ In both scientific and engineering periodicals.

e/ In both scientific and technological publications (not including life science publications).

TABLE 16. EXPENDITURE ON R&D, BY MAIN INDUSTRY BRANCH, 1990-1994

(Millions of NIS)

Israeli industrial classification		1990	1991	1992	1993	1994
Total	G*	200.8	266.3	286.2	323.6	503.7
	IND*	953.2	1236.1	1489.1	1724.5	2126.5
11-12. Food	G	0.4	0.7	0.8	1	2.1
	IND	16	12.5	10.2	15.6	20.1
13-15. Textiles, clothing and leather	G	0.5	0.8	0.2	1	0.9
	IND	4.3	18.2	3.3	5.1	5.3
17-18.Paper and printing	G	0.5	5			
	IND	3.6	5.1	6.2	8	7.7
19. Rubber	G	3	2.9	3.8	6.9	6.8
	IND	22.9	29.5	30.5	34.5	43.1
20. Chemicals	G	33	39.2	38.3	46.3	68
	IND	117.8	142.6	189.5	251.4	353.5
10,16,21. Mining, wood and non-metals	G	3.1	2.4	1.1	2.7	2.5
	IND	19.4	29.1	22.3	24.2	33.9
22-23. Basic metals and metals	G	1.9	1.5	2.5	2.2	6
	IND	26.4	35.5	31	25.6	40
24. Machinery	G	1.9	3.3	5.4	3.4	8.9
	IND	14.6	24.2	26.7	28.4	40.4
250-253. Electrical supplies, switches and lamps; accumulators; domestic electrical appliances	G	9.4	12.7	12.3	13.6	18.3
	IND	30.5	32.7	39.8	46.1	62.3
254-256. Radios, gramophones and television equipment; communication equipment; electronic equipment for control, scientific and medical uses	G	130	175	203.3	260.7	353.6
	IND	574.4	757.5	967.5	1090	1286.5
26-28. Transport equipment; miscellaneous	G	16.5	27.7	18.6	25.7	36.7
	IND	123.2	149	162.1	196.7	233.7

Source: Israel, Central Bureau of Statistics, *R&D Survey*, various issues.

*G = Current expenditure on R&D by Government; and IND = Current expenditure by industry on R&D.

TABLE 17. EXPENDITURE ON R&D BY MAIN INDUSTRY BRANCH, 1990-1994

(Millions of US$)

Israeli industrial classification		1990	1991	1992	1993	1994
Total	G	98.0	116.6	103.5	121.8	166.9
	IND	465.4	541.4	538.7	577.5	704.6
11-12. Food	G	0.2	0.3	0.3	0.3	0.7
	IND	7.8	5.5	3.7	5.2	6.7
13-15. Textiles, clothing and leather	G	0.2	0.4	0.07	0.3	0.3
	IND	2.1	8.0	1.2	1.7	1.8
17-18. Paper and printing	G	0.2	0.02	0	0	0
	IND	1.8	2.2	2.2	2.7	2.6
19. Rubber	G	1.5	1.3	1.4	2.3	2.3
	IND	11.2	12.9	11.0	11.6	14.3
20. Chemicals	G	16.1	17.2	13.9	15.5	22.5
	IND	57.5	62.5	68.6	84.2	117.1
10,16,21. Mining, wood and non-meals	G	1.5	1.1	0.4	0.9	0.8
	IND	9.5	12.7	8.1	8.1	11.2
22-23. Basic metals and metals	G	0.9	0.7	0.9	0.7	2.0
	IND	12.9	15.5	11.2	8.6	13.3
24. Machinery	G	0.9	1.4	1.9	1.1	2.9
	IND	7.1	10.6	9.7	9.5	13.4
250-253. Electrical supplies, switches and lamps; accumulators; domestic electrical appliances	G	4.6	5.6	4.5	4.6	6.1
	IND	14.9	14.3	14.4	15.4	20.6
254-256. Radios, gramophones and television equipment; communication equipment; electronic equipment for control, scientific and medical uses	G	63.5	76.7	73.6	87.3	117.2
	IND	280.5	331.8	350.0	365.0	426.3
26-28. Transport equipment; miscellaneous	G	8.1	12.1	6.7	8.6	12.2
	IND	60.2	65.3	58.6	65.9	77.4

Source: Calculated from table 16.

Notes: G = Current expenditure on R&D by Government; and IND = current expenditure on R&D by industry.

TABLE 18. EXPENDITURE ON R&D, BY INDUSTRY BRANCH, 1990-1994

(Percentage)

		1990	1991	1992	1993	1994
11-12. Food	G	0.20	0.26	0.28	0.27	0.42
	IND	1.68	1.01	0.68	0.90	0.94
13-15. Textiles, clothing and leather	G	0.25	0.30	0.07	0.27	0.18
	IND	0.45	1.47	0.22	0.29	0.25
17-18. Paper and printing	G	0.25	0.019	0	0	0
	IND	0.38	0.41	0.42	0.46	0.36
19. Rubber	G	1.50	1.09	1.33	1.90	1.35
	IND	2.40	2.39	2.05	2.00	2.07
20. Chemicals	G	16.43	14.72	13.38	12.73	13.50
	IND	12.36	11.54	12.73	14.58	16.62
10,16,21. Mining, wood and non-metals	G	1.54	0.90	0.38	0.74	0.50
	IND	2.04	2.35	1.50	1.40	1.60
22-23. Basic metals and metals	G	0.95	0.56	0.87	0.61	1.19
	IND	2.77	2.87	2.08	1.48	1.88
24. Machinery	G	0.95	1.24	1.89	0.94	1.77
	IND	1.53	1.96	1.79	1.65	1.90
250-253. Electrical supplies, switches and lamps; accumulators; domestic electrical appliances	G	4.68	4.77	4.30	3.74	3.63
	IND	3.20	2.65	2.67	2.67	2.93
254-256. Radios, gramophones and television equipment; communication equipment; electronic equipment for control, scientific and medical uses	G	64.74	65.72	71.03	71.70	70.20
	IND	60.26	61.28	64.97	63.21	60.50
26-28. Transport equipment; miscellaneous	G	8.22	10.40	6.50	7.07	7.29
	IND	12.92	12.05	10.89	11.41	10.99

Source: Calculated from table 16.
Notes: G = expenditure by Government; and IND = expenditure by industry.

TABLE 19. INTERNATIONAL COMPARISON OF EXPENDITURES BY BUSINESS ENTERPRISES ON R&D, 1991

(Percentage)

	Other branches	Transport equipment	Electronic equipment	Electrical equipment	Machinery	Metal products	Chemical products	Food, beverages and tobacco	Total
Austria	13	11	19	13	21	8	13	2	100
Australia	14	16	18	6	10	12	15	9	100
Italy	3	23	15	9	17	5	27	1	100
Ireland	7	2	33	5	16	4	20	13	100
United Kingdom	5	7	24	21	12	2	27	2	100
Belgium	4	4	22	12	7	8	40	3	100
Germany	3	19	21	9	18	4	25	1	100
Denmark	2	5	11	7	33	4	30	8	100
Greece	21	3	11	2	25	24	11	3	100
Japan	7	20	32	14	13	9	2	3	100
Israel	6	12	63	3	2	3	10	1	100
Norway	21	2	24	5	15	8	23	2	100
Spain	6	16	19	9	18	5	23	4	100
Portugal	23	1	..	40	7	4	20	5	100
Finland	9	5	28	..	24	5	23	6	100
France	5	16	30	4	12	4	26	3	100
Canada	10	7	37	2	16	6	20	2	100
Sweden	8	27	19	3	19	5	17	2	100

Sources: Israel, Central Bureau of Statistics, *R&D Survey*, 1994. Data adapted from OECD, *Basic Science and Technology Statistics* (Paris, 1993).

TABLE 20. SALES AND EXPORTS OF ELECTRONICS

Year	Sales a/			Exports a/			Exports b/
	Electronics	Software	Total	Electronics	Software	Total	
1984	1,783	..	1,783	898	..	898	..
1985	1,908	..	1,908	985	..	985	843
1986	2,003	..	2,003	1,135	..	1,135	..
1987	2,520	290	2,810	1,350	25	1,375	1,224
1988	2,650	330	2,980	1,660	42	1,702	1,319
1989	2,900	380	3,280	1,900	65	1,965	..
1990	3,270	450	3,720	2,220	89	2,409	1,837
1991	3,618	540	4,158	2,283	110	2,399	2,190
1992	2,996	600	3,596	2,660	135	2,795	2,275
1993	4,610	700	5,310	3,200	175	3,375	2,589
1994	5,200	800	6,000	3,750	220	3,970	3,106
1995	5,890	950	6,840	4,330	300	4,630	..
1996	6,500	1,100	7,600	4,880	400	4,630	..

Note: Two dots (..) indicate that data are not available.

a/ Data used are those of the Israeli Association of Electronics Industries and the Israeli Association of Software Houses. These data are a better representation of the electronics industries than are the export data issued by the Central Bureau of Statistics, which for most years were 25%-30% lower (see annex I).

b/ Israel, Central Bureau of Statistics, *Industry and Crafts Survey*, various issues.

THE IMPACT OF THE PEACE PROCESS ON THE ELECTRONICS AND SOFTWARE INDUSTRY IN EGYPT

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Introduction

Electronics and software industries have the following characteristics:

- *They have a high growth rate.* During the period 1994-1996, an average growth of 25% was reported in the world market.
- They are *essential* tools (but not necessarily sufficient by themselves) for increasing the *productivity* of most if not all other industrial and service sectors.
- They are a *major* ingredient of trade.
- They comprise the *largest* industry worldwide (around $1,000 billion), exceeding the auto, steel and petroleum industries.
- They have a direct impact on the *socio-economic* structure and have ushered in the information/knowledge era.
- They are one of the most *human intensive* industries, owing to continuous development and short lead times.

The electronics and software industries, like any other industry, have passed through the following stages: market research, design, engineering, production, distribution and sales, and after-sales support. These six functions are not necessarily carried out by a single company and can be further divided into substages. However, it is important to recognize the interactions and overlap between these stages at the global level. Economic evaluations of opportunities and threats should be based on capital/human capabilities in regard to the market needs and environment of operation.

The successful outcome of the peace process is typically believed to involve the following:

- Removal of the barriers between Arab countries and Israel.
- Increased expenditures on civil products and services, which might increase the standard of living/market size of the economies directly involved.

- Increased investments from abroad (mainly the United States, Europe, Eastern Asia).

- Increased income arising from an increase in tourism.

These four elements comprise the basic factors which are assumed to affect the economic map of the area, and as such, these factors will introduce opportunities/threats at both the tactical and strategic levels. Economic stimulation is one of the most pressing national and private interests; however, security is another important dimension. The political dimension will not be discussed in the present study, except where it is reported as the main reason for the lack of development or a main cause of development.

This study provides an overview of the current status of the electronics and software industries in Egypt and how they are expected to be affected by the peace process. The authors are hoping that the study will be of benefit to the concerned, including the Government of Egypt, Egyptian companies, and development organizations.

I. METHODOLOGY OF WORK

The present report is not an extensive or exhaustive study. It rather outlines trends and main events using a study sample and other publications as well. The terms of reference of the study suggested interviewing 20 organizations/companies operating in the field. This is a very small percentage (around 2%) of the total number of such entities. The authors have contacted about 50 organizations; 22 responded to the questionnaire.

Considering the volatility of the peace process and the limited scope of the present study, the authors used questionnaires, interviews and the research of others which appeared in selected publications to gather information from and on a limited number of companies and organizations. They tried to combine data on current events and expectations for the short, medium and long terms, to minimize the effect of the current turbulence in the political environment on the study results and conclusions.

The entities contacted include governmental and private organizations involved in manufacturing, trade or services in hardware and software. It has been noted that most entities are very cautious in releasing information related to the study, for two main reasons:

- There is a current political climate discouraging open cooperation with Israel.

- Egyptian businesspeople deal very cautiously with studies, especially those involving financial or business links with Israeli companies or officials.

The results reported in this study are based on the research of the authors, who have made every effort to reflect the actual events as reported. The opinions of the authors are for the most part limited to the sections containing the conclusions and recommendations.

II. CURRENT STATUS OF THE ELECTRONICS INDUSTRY IN EGYPT

This chapter introduces the electronics industry in Egypt, while the next chapter presents the software industry. Matters related to both software and electronics will be presented in this chapter.

A. INTRODUCTION

An estimated 200 large to medium-sized companies work in the fields of electronic systems (hardware). These include around 30 manufacturers, and around 10 services firms; the remaining are traders.

In 1996, overall industrial production in Egypt amounted to $7.7 billion. Of this figure, the total production of the electronics industry was about $446 million (according to the Ministry of Public Enterprise), or 5.8% of total industrial production in Egypt.

It is estimated that in 1996, another $800 million worth of electronic equipment/modules were imported. Therefore, the total market size of electronics in Egypt is expected to exceed $1 billion. It should be noted that many products have an electronic component. The electronic component ratio in non-electronic products (planes, cars, refrigerators and industrial equipment) may vary from 20% to 5%.

Compared with the value of worldwide electronics production during 1996, which amounted to around $1,000 billion, the value of the total production of the electronics industry in Egypt is negligible. The production of the Egyptian electronics industry is also small compared with that of Israel, which amounts to $5,900 million.

Consumer electronics, in particular the production of color TVs, have dominated the industry in Egypt (about 70%, compared with a figure of 22% for this segment worldwide), with telecommunications being the next largest segment (20% or even more if cables and related equipment are taken into consideration. Worldwide, this ratio is about 16%).

The remaining 10% share in this industry is covered by different industries such as industrial instrumentation, components, medical equipment, office equipment and the photovoltaic industry.

Virtually absent from the electronics industry in Egypt in production is such important fields as:

- Semiconductors
- Passive components
- Recently developed products such as lasers and LCDs

- Important industrial or medical equipment
- Computers and peripherals and accessories
- Conversion of solar energy, of which Egypt has an abundant supply (photovoltaic industry). There is no production/processing of wafers, only module assembly.

Design and engineering activities are extremely limited. The most active in this respect are small to medium-sized companies. However, they cannot afford their own certification and calibration facilities, and there is no comprehensive centre available in Egypt for electronic systems certification and calibration. This industry is extremely active, and without R&D there is a very limited chance of achieving significant value added at the national level. With the application of the GATT/WTO rules and disciplines, this will effectively eliminate even the current modest operations.

In addition, there is a lack of detailed databases about international market transactions, which limits the potential of local companies to address the needs of international markets.

Furthermore, there is a high degree of imbalance with regard to customs duties. For example, the tariff rate for TVs is 80%, while it is 5% for computers. This partially explains why TVs are locally assembled, while computers are not. The use of tariffs as a means of developing industries is not being suggested here, since locally assembled TVs are not competitive in the international markets. The application of tariffs only supports assembly for the local market.

B. EXAMPLES OF ELECTRONIC PRODUCTS ASSEMBLED/PRODUCED IN EGYPT

1. *Consumer electronics*. The following are produced:

- Colour TVs, b/w TVs
- Video cassettes, videotapes
- Radios, radio cassettes, CDs, hi-fi equipment, audiotapes
- Microwave ovens

2. *Supporting modules*:

- Coils and transformers
- De-Gaussian coils
- Deflection yokes
- Fly-back transformers
- Loudspeakers
- Tuners (VHF/UHF)

- Picture tubes for b/w TVs
- Metal parts (heat sink)
- Plastic parts

3. *Telecommunications*

- Telephone sets
- Private exchanges (PBX)
- Electronic exchanges (public digital system)

4. *Office equipment*

- Copiers

5. *Military equipment*

- Transceivers
- Field telephones and switchboards
- Radar systems

C. Examples of electronic products designed/assembled in Egypt

1. *Measurement and control instrumentation*

- Traffic light controller
- Air conditioning controller
- Elevator controller
- Electricity meter reading
- Power line carrier
- Stair lights controller
- Energy-saving module (to turn off lights)
- Automotive electronic ignition
- Voltage stabilizer
- Phase corrector

2. *Electronic lighting and displays*

- Electronic ballast
- Electronic displays

3. *Medical*

- Cardiographs

D. Examples of electronic services/products serviced in Egypt

Several companies provide services in the electronic industries. One new activity involves the design of semiconductors. Two companies are reported to be actively engaged in this. In addition, there are about 20 companies that provide support (repair and maintenance) of industrial and medical equipment at the component level. There are hundreds of small shops for servicing consumer products (TVs, radios, telephones, VCRs, etc.).

E. Examples of projects (under development) of electronic products in Egypt

Projects and enterprises in the following areas are being planned.

- Computers, peripherals and monitors
- Photovoltaic industry (wafers, cells, panels and systems)
- Semiconductor industry, including silicon foundry
- Environment industry (pollution control and treatment):

  Auto detection sensing apparatus and inspection instruments

  Noise control

F. Employment in the electronics industry

The total labour force was estimated at 16.9 million in 1994. Egypt has a surplus of both semi-skilled and skilled labour. In general, the low wages of semi-skilled employees encourage their use in labour-intensive industries. On the other hand, Egypt has a good supply of highly educated graduates suitable for high-tech work.

The electronic industry labour force is estimated at 16,000 workers. This labour force consists of engineers, technicians and semi-skilled employees.

The average sales per employee in the field of electronics is about $29,000/year. This figure is much lower in most factories, but has increased lately owing to an increased share of private companies in production and to the establishment by the firm ARENCO of a factory to produce telecommunications equipment which has a high volume of annual sales per employee ($144,000/year).

Productivity differs from one sector to another depending on factors such as: type of product, level of automation, presence of excess workers, stoppage period because of lack of materials or other things, planning, and management. Generally, the productivity

of the Egyptian worker is on the world level, if the conditions of work are similar to those prevailing in Egypt. This proved to be true in the case of LG Electronics, Egypt (producing components). In this case the productivity and quality have reached that in the Republic of Korea.

G. Points of strength

Large numbers of experienced engineers, technicians and semi-skilled workers are available in the existing factories.

Some of the basic infrastructure is in place. For example, some Egyptian companies are equipped with modern production lines comprising the following:

- Automatic insertion production lines for axial and radial through-hole components as well as for surface-mount components.

- In-circuit testers for analogue and digital circuits

Linkage and supporting industries have begun to appear as some factories have production lines to produce loudspeakers, coils, transformers, tuners and printed circuit boards. Many factories producing plastic parts, metallic parts, cardboard boxes and packing materials have been established. For example, LGEE (Lucky GoldStar of Egypt) produces supporting modules and exports about 50% of its production.

H. Points of weakness

Most Egyptian manufacturers work under licence from international companies, and their production focuses on the assembly of imported component knocked down (CKD) kits.

Market research is not practised, especially with regard to export markets.

Attempts to export and penetrate foreign markets are weak. Very little effort has been made to produce the standard components needed in the international market. This is mainly due to the two previously-mentioned points.

Technology transfer concentrates on a particular product model rather than on basic technologies for product categories.

Capabilities for engineering products–including certification, calibration facilities and experience–are extremely limited. This is reflected in the current local designs, which are poor in quality.

The R&D linkage between universities and research centres on the one hand and industry on the other hand is very weak. Movement of personnel between these two

camps is limited, mainly because of government regulations, which provide neither the incentives nor the legal mechanisms to allow such movement.

I. R&D IN ELECTRONICS AND INFORMATICS

In the last ten years, several attempts have been made by professional and governmental organizations to develop a national scheme for the development of the industry. One of the most comprehensive attempts was the work done by the Information and Decision Support Centre (IDSC) of the Cabinet in 1988. An attempt to establish a "pyramid technology valley" (PTV) in 6th of October City was initiated. A study made by Dataquest put forward a mechanism for implementing this endeavour. Later, the project was moved to the east coast of Ismailia in the Sinai Peninsula on an area of 60,000 feddans.[1] The project is receiving good support from local authorities and is moving forward, albeit at a slow rate. A grant of about $1.5 million was provided by the Republic of Korea for the design and marketing study of the project.

R&D activities

There are about 30 overall R&D institutes in Egypt. The following lists the governmental R&D institutes in the area of electronics and informatics:

- Electronics Research Institute (ERI), Ministry of Scientific Research
- Information Research Institute (IRI), Ministry of Scientific Research
- Broadcasting and TV Research Centre, Ministry of Information
- The Electronics R&D Centre, Ministry of Public Enterprises
- The National Telecommunications Institute, Ministry of Transport and Telecommunications.

J. EDUCATION AND TRAINING

There are 12 universities under the umbrella of the Supreme Council of Universities. Other institutions not under the Council include: El Azhar University, the American University, the Arab Academy of Science and Technology, the Sadat Academy, Technological Institute of 10th of Ramadan, and a number of institutes of higher education. Four private universities started operation in 1996. The quality of their graduates has yet to be seen since there are no graduates yet, of course. Investments in education both from the Government and the private sector have increased lately. However, continuous training in the latest technologies is limited in particular with regard to hardware. There is, however, one noteworthy exception–software training at the Information and Decision Support Centre (IDSC). Since 1993, the Information Technology Institute (ITI) of IDSC

[1] Feddan = 4,200 m^2.

has trained100 university graduates per year in an extensive nine-month programme. A total of 400 persons have enrolled in this programme. Other programmes organized by IDSC and related to information technology (IT) are two master's degree programmes in cooperation with Louisville University and an MBA programme in cooperation with Maastricht University. Likewise, there are many short-term courses organized to enable those concerned to keep up to date with IT. However, if it is desired to expand the software industry to the point that it has annual sales of $1 billion, along with achieving a doubling of output per employee (an increase to $49,000, from the current $20,000), then Egypt would need 25,000 programmers, as opposed to its current software workforce of 2,000. This is increase of more than tenfold. Reaching this number in the three years proposed would require the graduation/training of more than 5,000 per year. Other efforts will most certainly be needed for the data communication infrastructure and marketing (see following chapter on software for details).

In the 12 State-run universities plus El-Azhar University in the academic year 1994/95, enrolment and graduation for the undergraduates were as follows:

Specialization	Enrolment	Graduation
Electronic communications	2,513	918
Computer-automatic control	896	551
Total	3,409	1,469

For post-graduate studies in the same year, the figures were as follows:

Specialization	Enrolment	Graduation
	M.Sc./Ph.D.	M.Sc./Ph.D.
Electronics communications	526/85	43/3
Computer-automatic control	327/43	26/9
Total	853/128	69/12

K. CURRENT POLICY TOWARDS THE SECTOR

The electronics industries do not receive any special treatment under Egyptian laws. However, in the most relevant law (No. 8 for 1997), software companies were given five years' tax holidays and for the first time were treated as a recognized industry such as tourism and land reclamation. The five-year period will be extended to 10 years for companies located in new communities. In general, Egypt's law No. 8/1997, which for the most part supercedes investment law No. 230/1989, provides extremely attractive incentives.

Key provisions of law No. 230 included: a guarantee against confiscation or nationalization without compensation; the right to own land; the right to maintain foreign currency bank accounts; freedom from administrative attachment; the right to repatriate capital and profits; and equal treatment regardless of nationality.

Egypt has always been a leading country in recognizing international treaties involving the protection of intellectual property. Further improvement is expected with

the implementation of the TRIPS agreement of the WTO. Examples of regulations in Egypt include the 1949 patent law (currently under review), copyright law 38 of 1992, and the trademark law of 1954. There is no separate local legislation protecting semiconductor chip layout design.

L. EXAMPLES OF NEW PROJECTS

The following three examples were selected.

1. *Telecommunications equipment*

In 1996, Egypt's total local production of telecommunications equipment was $110 million, but the total market size was $830 million. There is a good market for telecommunications equipment, including paging systems, telephone cables (including fibre optics) and satellite communications equipment. Cellular phones were introduced in late 1996.

There are currently around 4 million telephone lines, yielding a density of 6.7 per 100 persons. The density is planned to increase to 10 per 100 by the year 2010, requiring the installation of about 300,000 lines per year. Recently, the private sector was allowed to enlarge in the following three activities:

- Operation of public phone booths
- Operation of VSAT systems
- Operation of cellular phone services

The current five-year plan (1992-1997) includes $700 million for the telephone and communications sector. New projects include fibre optic cables for El Hammam/El Salloum (550 km), Asiout/ El Kharga Oasis (280 km), and a fibre copper cable project for small villages in rural areas. The imports of telecommunications equipment are mainly from the United States (the largest share), France and Germany.

The current annual local needs of the telecommunications subsectors include: telephone cables, $140 million; optic cables, $140 million; satellite communications equipment, $35 million; and cellular telecommunication equipment, $50 million.

The above-mentioned market sizes coupled with the expectations arising from the strong presence of the Internet and related activities imply strong growth in the telecommunications sector. More than 20 companies alone started to provide Internet service in Egypt in 1996. There are an estimated 50,000 Internet subscribers, and annual growth of 60% over the next three years is projected. The telecommunications industry in Egypt is poised for explosive growth, especially in the light of further deregulation.

2. *Computers, peripherals and monitors*

The computer market in Egypt has experienced good growth (15% to 25%) in recent years and will continue to expand. Although there is a small industry which assembles imported computer parts, it cannot truly be considered to have arrived at the level of production. In fact, it can be said that Egypt has no real computer industry. Projects for producing computers and monitors have been envisaged, but have never materialized.

In Egypt, the total market size of this sector was $206 million in 1996. Total local production is negligible. Egypt is the fastest-growing Internet user in the Arab world, and the demand for this sector will continue to increase. The local needs are for microcomputers ($41 million), modems ($10 million), printers ($20 million) and monitors ($20 million). The remaining $100 million plus of this market mainly involves the mini and mainframe sectors.

ACER monitors (of Taiwan Province of China) will be produced in Israel, with some of them possibly being targeted at the market in Egypt. The production of monitors is within the capability of local manufacturers of television sets. It is important for Egypt to establish an industry for computers and computer monitors. This is due to the fact that TV and computer technologies are merging. Egyptian producers will have to move quickly, simply to avoid what they have already achieved.

3. *The photovoltaic and semiconductor industry*

The establishment of this industry is sponsored by the Academy of Scientific Research and Technology. In Egypt, there are abundant raw materials of pure silica; the results of preliminary technical studies have shown the technical feasibility for the production of pure silicon of high quality–99.98% Si. Such research provides the basis for producing silicon solar cells as a source of renewable energy with an efficiency of 12% from sunlight. In addition, the metallurgical-grade silicon obtained after the first stage of sand reduction can be used in the aluminium and steel industries.

III. CURRENT STATUS OF THE SOFTWARE INDUSTRY IN EGYPT

The above chapter described the status of the electronics (hardware) industry in Egypt. The present chapter begins by defining the meanings of the elements of the software industry, since these often mean different things to different people. Software is "soft" + "ware". "Soft" means that the entity under evaluation in itself does not have physical dimensions unless associated with some hardware entity. Some people speak of hardware, software and brainware. The brainware component is here defined to be either part of software or hardware and accordingly the brainware is to be marketed either via software or hardware. Usually a product with a market value is a mix of software and hardware. If the major component of the value is software, it is labelled as software, and vice versa.

There are hundreds of small software companies and many individuals working independently in this field. Only a few large companies concentrate on software development. These large companies include Sakhr, Standardata, DMS, CityMax, Info Arab and First Engineering.

SCOPE OF THE SOFTWARE INDUSTRY

The software industry includes the following products/services:

(a) Software programs.

(b) Data, information, and knowledge provided on or through electronic media.

(c) Operation of electronic media for provisions of the above.

The industry consists of:

- The supply side
- The demand side
- The regulations/environment in which these two sides are operating or with which they interact.

A. ENVIRONMENT

Government policy regarding software differs from that concerning hardware. Customs on software amounts to as much as 50%, while on hardware it is about 5%. It is important to note that software development requires development tools consisting mainly of software. The software part of development therefore has 50% customs duty, which discourages local development. This simple example is an indication of lack of understanding of the real world on the part of the regulators. In terms of cost, most modern software development tools are beyond the reach of local developers.

Charges for data communications are extremely high; a 64-K bit connection to the international market costs the provider about $17,000 per month. This is an outrageous cost, given that the cost to the local authority is only $240. Data communications are needed to work with companies overseas (in subcontracting arrangements). The reason for the high cost is simple–the monopoly of Arento, the local government telephone operator.

The availability of development tools is an important part of the environment. However, since these are supplied by international companies, most of them deal very poorly with the Arabic language. This is due to two reasons:

- The minimal enforcement of property rights, despite occasional bouts of enforcement;

- The absence of any real pressure from software associations/regulators on the international companies to produce tools that can handle Arabic.

For security reasons, there is a current regulation in effect that requires that *all* (not a sample of) disks exported be checked.

Market research is highly regulated, which poses an obstacle to all industries, including the software industry.

B. SUPPLY SIDE

1. *Personnel*

It is estimated that there are more than 4,000 professional programmers in Egypt. In 1994, a computer department was opened in Cairo University. This department receives more applications than any other in the university; it joined three other universities which have already had computer departments. Since 1993, ITI of IDSC has trained 100 university graduates per year in an extensive nine-month programme. In 1996, each university in Egypt started a faculty for computer science. In addition, there are more than 15 computer-training programmes run by private companies. However, most are for training users, not developers. The previous chapter mentioned the needs that exist for qualified personnel. All levels of software training are needed, from firmware to software management, benchmarking and quality control systems.

2. *Programming tools*

The following tools are used by programmers:

- Firmware (assembly language)

- High-level programming languages

- Traditional: COBOL, Fortran and others

- Recently developed: C, VB, Delphi, Power Builder and others

- Semi-finished development tools (mainly using DB tools: Access, Paradox, Oracle, Informix, Fox Pro and others

- Software development management tools.

3. *Fields of activity*

Most of the current uses of software can be grouped into one of the following tasks/activities:

- Financial packages
- Office automation tools: word processing, spreadsheet, sales management and time management among others
- Specialized packages (CAD/CAM, SCADA, MIS).

4. *Work entities*

About 50% of software personnel (i.e. 2, 000 persons) work in software houses or departments in computer companies. The other 50% work in the user companies/organizations to support/develop in-house software.

Software personnel can be grouped into the following categories: casual user, professional user, data entry, programmer, system designer and analyst, and system administrator. Techniques of software management is an area which needs further development.

Salaries of programmers in Egypt average about $300 per month or $4,000 per year. The cost of a senior programmer/analyst averages about $15,000 per year. This is a ratio of approximately 1:10 in comparison with the international scale.

5. *Development and testing tools*

Of the hundreds of tools available worldwide, few are arabized. This is one of the major limitations in the development of the software industry.

6. *Some positive signs*

In 1996 Microsoft and Oracle opened offices in Cairo.

C. DEMAND SIDE

The effective (not potential) market for software is greatly limited in size owing to the high level of piracy reported and the limited availability of arabized development tools. It is estimated that about 89% (compared with around 40% in the United States) of the value of software is pirated in Egypt. Piracy cannot be eliminated, although it can be limited. The high rate of piracy is due to several factors:

- Lack of awareness of how valuable copyright protection is to industrial development.

- High price of software especially in comparison with student budgets. There is a very limited effort to provide legal copies at special prices.

- Limited enforcement of copyright laws.

It is expected that further local development will result in less piracy. If this is achieved, the local market is expected to be worth around $100 million per year. The development of a software market for home and industrial set-ups could even double this figure.

IV. CURRENT STATUS OF THE RELATIONSHIPS BETWEEN EGYPT AND OTHERS (ISRAEL AND PALESTINE) IN THE ELECTRONICS AND SOFTWARE INDUSTRIES, AND PROJECTIONS CONCERNING THE IMPACT OF THE PEACE PROCESS

This section is based on:

- An analysis of the responses of the organizations participating in the study via a structured questionnaire

- A survey of articles in several publications

As a part of the normalization process between Egypt and Israel, there have been many contacts, via organized conferences and delegations and through individual contacts. Regarding the relationship with Palestine, the process is as yet very limited, mainly owing to the state of development of Palestine. The present report does not research all contacts, but rather provides trends and main events using the sample of the study and other publications. Significant documentation was uncovered on Egypt's relation with Palestine. The findings therefore concentrate on Israel, unless noted otherwise.

Although there are some trends evident, the limited scope of the present study made it impossible to differentiate between the various categories (i.e. manufacturing, trade, services, governmental). It was difficult to classify any one company as purely hardware or purely software, though 60% of the companies were "mostly" hardware and the other 40% were "mostly" software. A company dealing equally in software and hardware was counted as half software and half hardware.

Since the country in the area with the largest electronics and software industry is Israel, it was assumed that the major impact of the peace process would be between Israel and Egypt; this accordingly limited the study. It is, however, the opinion of the authors that the development of the other markets, especially the Syrian Arab Republic and Iraq (rumoured to be joining the process), would open a major market for such industries. Integration of other markets, the Gulf for example, or the rejuvenation of the Arab market as a whole as opposed to, or complementary to, the Middle East market (which includes

Israel), would set the stage for strong development. This subject, however, is beyond the scope of this study's terms of reference.

There have been several visits organized between Israel and Egypt. In the last three years, there have been about six such meetings, the most recent meeting taking place during the visit of the Israeli Prime Minister to Cairo in March 1997. Visits to Israel include one in 1994 by a delegation of the Federation of Egyptian Industries and another in 1996 by a delegation of the Egyptian Businessmen's Association. Other contacts include the organization of the Cairo Economic Forum, the Euro-Mediterranean dialogue and telecom conferences and exhibitions. Frequent individual visits take place as well; however, as mentioned earlier, the current political climate is highly discouraging.

Many of those contacted during the course of research for the present study indicated that although there could be major advantages from peace and from the opening of markets, unless there is a clear local strategy developed and adopted by the business persons and Egyptian organizations. The danger is great and far exceeds the benefits.

The impact of the peace process can be examined along several lines:

(a) Investment to be directed to the area, of which Egypt is expected to have a good share.

(b) Development of the Egyptian market in itself as a result of increased per capita income, owing to the expected positive impact on the tourism industry. This is based on the assumption that tourism would grow more than any other industry as a result of a successful conclusion of the peace process.

(c) Opening the neighbouring markets as economies flourish. This question of trade-based growth has been proposed as a basis of other regional groupings (NAFTA, European Union, ASEAN). However, a comprehensive investigation of the peace process in the Middle East is beyond the scope of this study and require full economic analysis.

(d) Possible exchange of finance and technology between the countries involved. The research for the present study shows that "in the concerned industries, there is as yet very little activity in this area." The only reported incident concerns a software company that arabizes programmes. Further, the research uncovered no evidence of engineers moving to Israel on a mass scale, despite the fact that there are reports of a pressing need for programmers (estimated at about 10,000 to increase to 20,000 by the end of the decade); there are also reports of programmers being imported to Israel from India.

The total economy of Israel is estimated at around $80 billion compared with Egypt's at $50 billion, a ratio of around 1.5:1. However, a comparison of the electronics and software industries in Egypt with those in Israel indicates the following:

- The relative difference in size in electronics is 16:1 ($7 billion to $446 million).

- The relative size differential in software yields a ratio of 40:1 ($1 billion to $25 million).

- The productivity in electronics has a ratio of 5:1 ($140,000 to $29,000).

- The productivity in software has a ratio of 8:1 ($80,000 to $10,000).

Overall, Israeli products have a higher level of sophistication. This is at least partly due to the strong link between military production and local industries. Despite the above-mentioned numbers, which are overwhelming in favour of the Israeli industry, there are some trends which shows that there may be a positive impact. One of them is the current investigation by Intel (the largest semiconductor company) on whether to establish an assembly facility in Egypt. Asian companies have also showed some interest. It is well known that most of the development in Israel's electronics industry was based on American companies using Israel as a base to enter the European market. After peace and the lifting of the economic embargo, there seems to be a tendency on the part of European and Asian companies to invest in Israel (the authors have learned of about eight such incidences). However, it is expected that the rising cost of Israeli engineers and qualified personnel will deter further investment in Israel and, owing to efforts made by the Government of Egypt, there is a strong possibility that major investment will come to Egypt from multinationals. One ambitious project, the Sinai Technology Valley under construction east of Ismailia at the Sinai Peninsula, is moving although at a slow pace.

The size of overall trade between Israel and Egypt, excluding petroleum, is reported below in millions of dollars.

	1994	1995	1996 (first quarter)
Import	20.7	30.7	12.3
Export	23.8	47.8	6.5

It is estimated that about 20% of imports are products in the electronics and software industries. There are rumours, however, that many Israeli products are channelled to the Egyptian market from several other origins, including Cyprus, Jordan, and the West Bank and Gaza Strip, as well as countries from all over the world, including Australia, the United Kingdom and the United States.

1. *Overall impact*

The following summarizes the overall expected impact of the peace process on the industry, according to the 20 organizations that responded to the questionnaire.

	Short term	Medium term	Long term
Negative	1	3	2
Positive	5	9	8
No effect	6	1	1
Undetermined	10	9	11

These results show that about 50% cannot judge the impact, about 40% see a positive impact, and that 10% expect a negative impact.

2. *Knowledge about the Middle East market*

Over 70% indicate they know little or nothing about the market. Most of the people who answered 'yes' represented software companies. None of the respondents has conducted a market study of the Middle East market.

3. *Degree of initiation*

About 75% of the respondents indicated that they have NOT initiated contacts with other companies in the area.

4. *Current level of interactions*

The percentage of companies which reported making contacts is 68% (15 of 22). The percentage reporting conducting trade is 23% (5 of 23). The percentage reporting entering into a technical agreements is 13% (3 of 22). The percentage reporting joint ventures/partnerships is 0% (none of the 22).

5. *Target marketing directions*

63% of the companies (14 of 22) showed a tendency to export. 18% of the companies (4 of 22) showed a tendency to import.

6. *Required action that must be taken if the peace process is to have a useful impact*

The most frequent actions cited as steps that must be taken if the peace process is to have a positive impact are local coordination (60%), regional coordination (50%) and the conducting of strategic studies (45%). Other factors mentioned include the establishment of business councils, the provision of government support, especially for disseminating information (technical and marketing), and incentives for R&D.

7. Major technologies/products affected by the peace process

No clear trend of negative or positive impact has emerged with regard to this aspect. However, the most cited areas to be affected are communications equipment, electronic components and packaged software (particularly in specialized applications).

It is anticipated that unless there is strong local coordination, many Israeli products will dominate the market if they provide good local support and/or local integration.

It is observed, however, that the above refers only to direct impact expected by the companies responding to the questionnaire. It is the authors' evaluation that the indirect impact will be greater than the direct impact.

V. CONCLUSION

In general, despite the importance of the electronics and software industries to economic development, they are not properly shaped in Egypt, although Egypt has the inherent capabilities that would make possible a higher level of development. Awareness, plans of action and aggressive corrective measures are required, however, at both governmental and private levels.

Many products/services of these industries, most notably semiconductor manufacturing, are non-existent in the case of Egypt. Most ongoing activities are related to the assembly of consumer products in hardware and to the development of basic software programs, albeit the local industries meet only a small share of the domestic demand for such things.

It is imperative to have strong supporting services to allow the small local companies to prosper, but on the other hand it is also necessary to actively pursue international companies to encourage them to establish facilities in Egypt for the six stages of industry.

The study found that there have been many attempts on the part of Israeli companies to secure a share of the Egyptian market. These attempts have in large part failed, although there are several Israeli products both in electronics and software marketed in Egypt. Examples include communications equipment, protection devices, word processing programmes and tourist software. Many of the Israeli products are marketed under other names to improve their chances of being purchased.

There is some cooperation in technical matters between Israel and Egypt, but it is limited. The sole case reported involved a software company arabizing Israeli-made software.

So far, Israeli products are generally not accepted by either the public or government authorities unless they are clearly superior.

It is anticipated, however, that if the political climate changed, there would be greater trade between the two countries. Israel would be the greater beneficiary, as the Israeli Government is more actively pursuing high technology in general, and electronics and software in particular. This is evident from the frequency of meetings of the Israeli Prime Minister with multinational executives, and from the level of projects in the incubator programme of Israel. The Arab Governments must perform at this same level, if not more vigorously.

There are some positive signs, but there are many shortcomings indicated by the study findings. The next chapter outlines the recommended actions.

VI. RECOMMENDATIONS

A. GENERAL RECOMMENDATIONS

The Government must consider the electronics industries as a strategic activity and must provide this industry with all possible support and facilities. The Egyptian electronics and software industries are subjected to real threats and competition from their Israeli counterparts. The extent of the threat is linked to the progress of the peace process. To improve on the balancing effect of inward flow of technology vs. the outward drain of resources (human/financial), several steps are needed to strengthen the position of these industries in Egypt.

Foreign companies must be enticed to establish electronic industries in the Arab region, not only through incentives and regulations but also via political and international relations.

It is also recommended that the private sector increase its investment in the field of electronics and information technology, especially the hi-tech elements of these fields.

In the electronic industry, cooperation and coordination between the Arab countries must increase.

B. SPECIFIC RECOMMENDATIONS

1. Government policy regarding R&D must be overhauled:

   - To give more support to R&D institutes, given that their output is tangible.
   - To provide incentives for companies to invest in R&D.
   - To enforce strong protection of industrial designs and patents.

2. More elaborate studies are needed. These should to include studies in the following areas: manufacturing automation, medical equipment, education and training,

communications and utilities. Any study of these sectors should include hardware and software technologies, market analysis, local capabilities, and needed expertise.

3. There is a need to establish support facilities–which it is strongly recommended be managed by electronic companies and supported by Government–to include at least:

- Prototyping of hardware
- Testing of both software and hardware
- Provision of market data

4. Deregulation of the market research and information sector.

5. In general work on all six stages of the industry–market research, design, engineering, production, distribution and sales, and after-sales support–not only the last three of these, which is the case for the current situation.

6. Equipment besides consumer electronics (in the electronics industry) and traditional applications (in the software industry) should be given more attention. Projects in the following areas should be considered:

- IT industry (computers, peripherals, monitors, office equipment).
- Photovoltaic industry (wafers, cells, panels, systems).
- Semiconductor industry (including silicon foundry).
- Telecommunications industry (including in particular the software component of the industry).
- Industrial electronics (measurement, automation and control using PLC and SCADA software).
- Environmental industry (pollution control and treatment): auto-detection sensing, apparatus and inspection measurement, noise control.
- Medical equipment industry.

All of this needs to be done by a complete synergy of Government and private industry. In summary, to compete in these industries, Arab countries must develop the industry and orchestrate a development strategy that is based on the active participation of all the concerned countries, who share the same strategic vision.

JORDAN'S HIGHER-TECHNOLOGY SECTOR (ELECTRONICS AND COMPUTERS): CHANGES IN THE LIGHT OF PEACE AND OTHER REGIONAL AND INTERNATIONAL DEVELOPMENTS

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I. OVERVIEW

A. SECTORAL BACKGROUND

The present study is an examination of the "higher" technology sector in the Jordanian economy. Comprising electronics and computers, this sector in Jordan cannot truly be described as "high tech," since it encompasses many relatively low-technology activities, such as simple assembly of some electronic products. Nevertheless, in relation to much of the rest of the economy, this sector's technology is "higher." In addition, parts of the sector are looking to progress towards high-tech and in a few cases have actually started to do so.

One of the toughest criticisms made against Jordan today is that it is weak in higher tech. This problem has many facets, in particular the slack pace of foreign investment coming into the Kingdom. Foreign investment is the tool for transferring both technology and efficient productive practices, thus improving quality and boosting competitiveness. However, the investment climate suffers from, among other things, weak implementation of laws and their unjustified complexity. Moreover, comparisons with the Israelis leave Jordan looking poor in terms of higher technology.

The mid-1990s were a period of extraordinary challenge for Jordan. Rapid technological progress and world trade liberalization offer enormous potential for evolving a more dynamic pattern of economic growth and industrial exports, but for this to happen, new partnerships between the agents of growth in the Jordanian community must be established, as well as more serious linkages with the public and private sector organizations of the regional and international economies.

In particular, foreign direct industrial investment into the country is limited. The challenge for Jordan is to harness the opportunities provided by the system of trade and production that peace is introducing and which accession to the World Trade Organization (WTO) and the establishment of European partnership would further accelerate. In particular, industry, which has traditionally been a carrier of technological progress, is called upon to play a leading role in this process.

In industrialization, the private sector has an obviously essential role. It cannot meet the current challenges alone, however; especially at the earlier stages of industrial technology development, a more proactive part has to be played by the State.

Development of the industrial sector as a whole–and in particular higher technology products–is among the priorities of the Government, but owing to the limits of domestic demand, this increase can only be sustained by an expansion of exports and a diversification of markets. The Jordan Export Development and Commercial Centres Corporation (JEDCO) is the specialized institution in Jordan dealing with industrial export promotion. This organization is nominally controlled in equal parts by the Federation of Jordanian Chambers of Commerce, the Amman Chamber of Industry and the Ministry of Industry and Trade. In fact, the Minister of Industry and Trade in an ex officio capacity chairs JEDCO, and the State has the lion's share of influence within this public/private sector organization, as is the case in other such organizations in Jordan.

Nevertheless authority concerning Jordan's industrial and export policies is scattered to a certain extent. The Ministry of Industry and Trade is technically responsible for the overall trade regime, but other ministries, including the Ministry of Finance, also carry out functions that have an important bearing on such issues. In the private sector, the Amman Chamber of Industry has an obvious interest in promoting manufactured exports and has been more active in the past few years. In the computer subsector, the Jordan Computer Society has been trying increasingly to promote the interests of its members.

There are profound divisions over government policies among the various segments of the economy and between the public and private sectors as a whole. In particular, relations between industrialists and merchants are strained. Their debate has been going on for some time, but what is different now is that the need for change is perceived as urgent in the light of major regional and international developments, including peace with Israel. The greater possibility for change is implicit in the Government's more business-oriented posture, and the shorter-term factor of recession makes the tone of the economic debate strident. There is no doubt that the country is in recession and that local sales of manufactured goods in general, including electronic products, have suffered. This situation is being taken seriously by industrialists, with the owners of factories regularly demanding, for example, facilitation of temporary entry and other customs procedures.

Jordanian industrial products are not particularly competitive, except to some extent in Arab economies, although in 1990 the impact of the Gulf crisis produced a set-back for Jordanian regional exports. Before the crisis, the Gulf Cooperation Council (GCC) States together with Iraq accounted for the lion's share of the total exports of the country. The electronics and computer sector was not a major player in this regard, owing to its relative youth, but a revival of the Iraq/GCC markets would be very important for the sector.

Today, the challenges to the sector are serious, in the light of major changes within the country and rapid developments in the regional and world economies. These include peace with Israel, but also the accession of Jordan and other regional economies to the WTO and their entering into other international economic agreements (including those in the context of Euro-Mediterranean partnership). A possible advantage that the electronics and computer sector has in this connection is its newness. Among the most recently established within Jordan's industry, many firms in this sector were founded in the 1990s. In some cases, however, the larger business that founded the electronics or computer firm

was much older. This could possibly indicate more progressive and modern attitudes among a new generation of managers unencumbered with old-fashioned ways of looking at technology, industry and trade.

B. SCOPE OF WORK

This paper will examine the following:

1. The Jordanian Government's policy towards the electronics and computer sector:

   - Incentives provided: subsidies, tax and/or financial incentives and export promotion
   - Government regulations governing the sector: entry barriers, licensing and trade regime
   - Support institutions: marketing organizations, export centres, information networks, extension and advisory services, standardization centres, design and R&D support, other facilities and support services
   - State ownership of the firms in the sector

2. Performance and competitiveness of the sector

   - Major problems
   - Productivity in relation to labour costs, capital intensity, level of technology, technology cost, value added content, cost and sources of raw materials
   - Competitiveness in export markets: export performance, problems faced in export markets, value of exports compared with production, and the position of companies in relation to major international competitors
   - Competitiveness of the Jordanian firm in the Jordanian market against local and foreign products
   - Subcontracting arrangements with foreign firms: volume, forms and conditions of subcontracting
   - Competitive advantage over foreign products

3. Perception of owners and managers of firms regarding the present and future impact of peace

- Relations with Israeli companies as perceived by firms, in terms of competitiveness, technology transfer, market outlets in Israel, cooperation and subcontracting

- Action undertaken or to be undertaken by firms to cope with peace: restructuring of the company, specialization, better technologies and partnerships

C. METHODOLOGY

Twenty-one Jordanian firms in the electronics and computer sector were surveyed. The firms were chosen to reflect broadly the country's electronics and computer sector, but by no means constitute a random sample. Interviews were carried out with owners or managers of these enterprises. Information was also obtained from other private sector organizations as well as from mixed and government entities.

Information in general (and statistics in particular) is often a problem in looking at the Jordanian economy. Traditionally, firms hide important details of their work from any outsider; this even applies to public shareholding companies who are obliged to publish annual reports. In the private sector, many are unwilling to provide information. For the public sector, the available information was not up to date.

D. THE ELECTRONICS SUBSECTOR

Jordanian industry only recently became involved in the electronics subsector. The first factory for producing colour television sets was established in Jordan at the onset of this decade and began production in 1992. There are now three plants for TV production in Jordan, and in all cases technology was imported from various firms in the Republic of Korea. Recently, these factories began to add new production lines for other items such as videos, recorders and radios. All the factories produce colour TV sets of different sizes and specifications. Ownership is Jordanian, and there is no significant shareholding on the part of other countries. The factories mostly operate one shift of eight hours a day except in special cases when a firm has committed itself to deliver a specific quantity in a limited period of time.

The production capacity of the three factories is a large multiple of their actual output, and they are thus seeking wider marketing of their products. Production processes are alike. The factory obtains the full design of the TV set from the mother company in the Republic of Korea and imports the components (integrated circuits and transistors) and the boards on which the components are assembled (also from the firm of the Republic of Korea). Components are separated and arranged, and then a worker on the production line takes a limited number of each type, for assembly in specific places on a board. After the board is assembled, the pieces are welded in place and the rest of the parts are put on to produce a finished set. During the production process, the quality of the set is checked in

different locations by several persons and pieces of equipment, so that after the set is fully assembled, quality should match that produced in the original factory.

These companies were established in Jordan to circumvent the high import tariffs set by the Jordanian Government. In this sense the products are "competitive" by Jordanian standards because they are cheaper than imported goods, but in fact these TV sets and other goods are only artificially cheaper because of import tariffs. However, Jordan wants to accede to the WTO and will thus have to reduce these and other tariffs. Another problem with these types of industries is that they are capital-intensive and are meant to serve large markets. This is obviously not possible internally in Jordan, so these firms will fail unless they secure substantial export sales. The prospect of the Iraqi market eventually coming back on line is particularly enticing.

Jordan has emerged as the site of yet another stage in the game of international market strategies being played out by the electronics giants of the Republic of Korea, imports from which have traditionally dominated the Jordanian market for television sets. In 1990, the first serious plan was made to manufacture TV sets in Jordan. Two years and a feasibility study later, TV sets were being assembled in Jordan for the first time, at the Sahab industrial estate, with the Republic of Korea supplying the technology, the technical training, and 90% of the input components. Twenty-four thousand sets were produced in the first year of operation alone, and the locally assembled models began to steal market share. The competition, who faced a 120% duty on imports of finished sets, was forced to respond. A second company commenced assembly of television sets in January 1993. The following year, a third began producing a range of TV sets, bringing the combined annual capacity of the Jordanian plants close to 300,000 units.

Although the Jordanian market is too small to attract direct investment of the Republic of Korea at this time, the type of relationships established nevertheless have distinct advantages for the Jordanian manufacturing sector. The Jordanian companies all view local production of products of the Republic of Korea as the first step on the road to establishing an independent electronics industry in Jordan. One firm is hoping to declare autonomy from its partner from the Republic of Korea by the year 2000. The management feels that now that production has been localized, the next steps are to manufacture electrical components in Jordan and then move on into R&D. Keeping to schedule would depend in part on the penetration of export markets, but foreign orders (from among other places France, Kazakhstan and Lebanon) are slowly coming in. These firms are optimistic about the issue of input substitution and already manufacture over 40% of their components on site. However, the problems of scale should not be played down. For example, if a Jordanian company invests half a million dollars in a new production mould and the style changes six months later, then they will have a problem. In any event, partnership with a firm from the Republic of Korea remains a necessity for the time being, and all three Jordanian companies concerned are in the process of localizing production of other appliances designed in the Republic of Korea. These include washing machines, refrigerators and microwave ovens.

Technology flow from the Far East carries a cultural imperative: Jordanians have to "industrialize" the minds of managers, foremen and others, and this takes time. The consumer has also been in for some surprises as the battle for retail sales spills over into advertising and customer service. The Asian 'tigers' represent a role model for Jordan's industrial sector, but there is a long way to go before Jordan emerges as the Singapore of the Middle East; the accelerating pace of techno-industrial development will not make the task any easier.

The rest of the specialized electronics factories in Jordan are smaller than these three, or newer, or both.

E. THE COMPUTER AND SOFTWARE SUBSECTOR

The Jordanian computer subsector comprises around 300 companies, mainly involved in the retailing of computer hardware, software, networks and peripherals. Since the 1980s some firms have been involved in arabization. At the end of the 1980s and with the onset of the 1990s, a few put together packages of ready-made programs. Packages have been developed in Jordan for financial and administrative applications (including accounting, payroll, inventory and others) as well as word processing, engineering drawing, and comprehensive implementations such as automating hospitals, banks and industrial works. Some companies manufacture such items as screens, bilingual printers or electrical circuits for arabizing most printers available in the Arab markets and for use with other applications for word and information processing.

Because of the large number of firms and the low income levels, as well as poor awareness of technical issues on the part of the Jordanian consumer, the hardware market is predominantly price-driven. This price dependence has reduced the justification for local hardware-related R&D. Nevertheless, there are a few enlightened, export-oriented companies that have taken risks in developing hardware, in areas such as arabization of peripherals, development and arabization of military management information systems (MIS) and communication devices, and development of hardware-based communications protocol converters. The few successful attempts at hardware manufacture have been in fairly specialized areas. This is because for generic computer hardware, only mass production makes economic sense. Where adequate economies of scale cannot be achieved, a strategy of targeting market niches could be successful, and the challenge for Jordanians, therefore, is to identify and exploit more such niches in the future.

The Jordanian software market is fragmented and highly competitive, with its fragmentation primarily attributable to low-entry barriers. At the most basic level, firms need only programming skills and some hardware. The large number of competitors, coupled with the low technical awareness of the general public, has made the Jordanian software market price-driven, like the hardware market. In the past, the situation was further exacerbated by the majority of firms focusing on providing customers with a limited set of applications in traditional areas such as accounting and personnel management. Nonetheless, there are indications that buyers are becoming better informed with respect to information technology. Similarly, as public awareness further increases,

price competition will become less important, and the basis of competition will gradually shift to quality and customer service.

Jordanian companies are involved in software development for Arab countries. Items thus produced have been well received because often these are not merely an Arabic version of a Western package, but are adapted to the practices followed in the Arab world. Firms working along these lines can help in technology transfer and even in developing indigenous R&D capabilities. On the other hand, a number of software firms appear to be in danger from the imminent international trade agreements. Already vying for a niche in their respective markets, the firms will have to compete with more advanced international companies.

Jordanian software development skills are currently both good and inexpensive. In recent years, there has been a move away from traditional coding, as more programmers with object-oriented programming skills have entered the market. There has been good development work in creating various types of arabized MIS and office automation software. There are also many cases in which Jordanian programmers have developed specialized software, such as AutoCAD tools and multimedia applications for education, and there have been attempts at developing artificial intelligence applications as well. The combination of high skills and low cost could comprise a considerable competitive advantage for Jordan. In many cases, locally developed custom software is substantially cheaper than Western off-the-shelf application software. Such a situation could serve as a base on which to create a more robust software industry, in which advanced applications could be developed.

Agents in Jordan for leading world suppliers of high-performance visual computing systems are trying to offer solutions in the areas of database servers, geographic information systems, visual simulation, film and video, defence, and research in the fields of chemistry, medicine and publishing. The chance that these will see application in Jordan is currently small, but as the country begins to emerge as a service centre in the area, it is believed that the scope for regional work, in the field of advertising for example, will increase substantially.

For information technology to begin to play a significant role in a developing country such as Jordan, several prerequisites are necessary, among them a well-developed telecommunications infrastructure, and a technically educated and cultured society.

Jordan's telecommunications system was developed by a government monopoly, the Telecommunications Corporation (TCC). While the telephone network witnessed substantial improvement in the past two decades, little attention was directed to developing the telecommunications infrastructure necessary for a modern information-based economy. Under these conditions, information businesses in Jordan have been restricted. On the other hand, neglecting the need to set up data- and multimedia-oriented infrastructure delayed the development of indigenous information businesses. The Jordanian Government is aware of the problems caused by delays in upgrading the telecommunications infrastructure, and owing to its (belated) realization that an advanced

telecommunications network is an integral part of a healthy and competitive information technology sector, efforts are proceeding at the time of the present writing to privatize the TCC. As a first step, licences have been issued to private paging and cellular telephone operators. Currently, the TCC is being moulded into an institution that will be responsible only for providing basic services (telephone, fax and telex) and for creating necessary infrastructure. The provision of data bank access, Internet service and all other information services of the future are going to be left to the private sector. As time passes, and as these private operators and the TCC learn to live with and trust each other, some believe there will be further private sector investment in telecommunications in Jordan. The telecommunications industry is increasingly becoming the domain of the private sector around the world, and Jordan is no exception. For example, there are already several Jordanian companies and institutions working around Jordan's infrastructure to provide additional financial information services, as well as database and Internet access. At the same time, little effort has been made with regard to the manufacturing of telecommunications-related hardware in Jordan. In the past this has been primarily due to security restrictions imposed by the military, as well as to the lack of a stronger local information technology industry. As a result, the development of an indigenous telecommunications hardware industry has been delayed. However, with the recent entry of private players into the telecommunications market and the current proliferation of new technologies such as satellite communications, some expect that more local effort will be exerted and more investment funds will be channelled into this field.

Jordan's educational system produces qualified personnel in the field of computer science. Their relatively low salaries compared with the West or the Gulf have helped Jordan focus on software production and not only for the Arab world. India's experience in this field is seen as partly applicable to Jordan. Jordanian universities grant B.Sc. degrees in electrical engineering (with specializations in telecommunications, electronics or computers) or in computer science to hundreds of graduates every year. These have on the whole proved themselves to be well qualified and have succeeded in the Jordanian and other Arab labour markets, before or after continuing their higher education. However, measures are needed to improve the educational system so that graduates will be encouraged to think creatively and will be more productive. The university in many countries is a true centre for R&D, but this is not the case in Jordan. (Spending on R&D in Israel amounts to 2.4% of national income, exceeding each of France, the Republic of Korea and the United Kingdom in this area, let alone Jordan.)

The lack of guaranteed intellectual property rights is proving to be an obstacle to the development of the Jordanian computer industry. Unfortunately, Jordan has weak enforcement of its copyright laws, and this has so far reduced the possibility for serious software development in the country. However, the Kingdom has recently committed itself to WTO membership, and this entails a near-term requirement that the Jordanian market start abiding by copyright laws. Respect for intellectual property rights would allow better prices to be charged for intellectual and creative work. In the process, Jordanian software developers would be forced to pool resources and integrate their efforts, while it is expected that less serious players would drop out of the market.

Intellectual property rights are becoming an increasingly salient issue in the computer subsector. Many firms are now aware of the new initiatives contemplated by the Jordanian Government concerning copyrights, patents and trademarks and how the implementation of these initiatives will improve business. Such issues are being stressed by, among others, the Jordanian Computer Society, which has helped raise the question of how the Kingdom's computer industry stands to gain from implementing intellectual property rights, and which participated actively in a national debate on intellectual property rights. The Jordan Computer Society sees many advantages for Jordan's computer industry arising from increased intellectual property protection, including the chance to do the following:

- Create economic incentives to produce local software applications or hardware for use in Jordan and elsewhere.

- Obtain international protection for Jordanian software and hardware in all Berne Convention countries.

- Provide access to more advanced software from outside Jordan and obtain necessary support for upgrades.

- Create jobs in the Jordanian computer services industry as increased foreign investment brought about by international confidence in the Jordanian system for protecting intellectual property rights creates a demand for additional programmers and operators.

- Provide greater access to high-technology information systems, such as e-mail, the Internet, multimedia, etc. as confidence is increased in the Jordanian intellectual property rights regime for protecting these systems.

- Facilitate joint ventures or other partnerships with foreign firms to jointly develop advanced technology, including local production of chips.

- Create compatibility between Jordanian-produced projects and products produced in other countries.

- Generate additional consumer demand for software as higher-quality products become available.

- Create greater respect for the computer industry as consumers, Government and the private sector realize that there is more to the industry than illegally copied software. This will become even more important as a new copyright law is enforced.

II. SURVEY RESULTS

A. OWNERSHIP STRUCTURE

All 21 firms surveyed were private sector organizations; they included 10 private corporations, 9 partnerships and 2 public shareholding companies.

B. LEVEL OF ACTIVITY

Nineteen of the companies are in the production stage, one is being established and one is stagnant.

C. CAPITAL INVESTMENT

This information was not provided by four companies. The value of capital investment for the rest per firm ranged between JD 12,000 and JD 22 million, with an average JD 2.7 million.

D. PERSONNEL

This information was not provided by two companies. The number of staff in each firm providing such data ranged between 3 and 412, averaging 70.

E. MAIN ITEMS SOLD

The items the surveyed companies produce include telephones, answering machines, security systems, elevator controllers (with and without speed control), distribution boards and control panels, in addition to banking, insurance and imaging systems, software systems, multimedia equipment, ERP (enterprise resource planning) packages, CIM (computer integrated manufacturing) products, air conditioning controls, computer cases, PCBs (printed circuit boards), printers, terminals, arabization boxes, televisions, videos, microwaves, electrical panels, controls for washing machines and refrigerators, audio equipment, personal computers and PLCs (programmable logic controllers); computer training is offered by some.

F. STATE POLICY TOWARDS THE SECTOR

1. Incentives

The response to the question on whether there were any incentives provided by the Government to the industry was mainly negative, and many companies even went so far as to say that the State was actually hurting their business. Questions about national policy towards the sector revealed that the Government does not give incentives to the overwhelming majority of the companies. No firms receive any subsidies or financial incentives, and only two received tax breaks (in the form of exemption of exports from income tax) and help with export promotion. All of the companies said that there were no

trade quotas or non-tariff barriers (qualitative restrictions for instance) governing the imported goods competing against them. Eighteen of the companies stated that there were tariffs on imports of similar products.

The abolition of income tax on exports in 1994 was important to some businesses; some companies have increased or intend to increase their production and investment for export.

A large majority of the companies reported that there were no institutions supporting the sector. Of the five who were helped by marketing organizations, two were assisted by public entities and three by private firms. Six companies were supported by export centres; five of these depended on JEDCO and one on a private company. Private information networks supported two companies. Only one company claimed that it was assisted by firms providing advisory services and design and R&D support, all private.

Firms made the usual complaints about the general difficulties in dealing with Jordanian government departments.

Procurement policy by State bodies was not a serious complaint, as the Jordanian Government was giving local suppliers an edge over foreign articles in purchasing.

2. Licensing

Government regulations concerning the sector required 16 of the companies surveyed to obtain a particular licence. However, business managers were largely unaware of the elimination of the requirement for "No objections" certificates from ministries, which is a step that could improve the process of registration with the Ministry of Industry and Trade.

3. Trade restrictions

Firms complained that they suffered from trade restrictions such as quotas or from non-tariff barriers such as qualitative restrictions when exporting to foreign markets, but that they could not count on the Jordanian Government to impose restrictions to help local companies compete against imported goods. ISO 9000 is increasingly hampering some exporters; it and other non-tariff barriers (related to quality) were seen as a problem by some exporters.

4. Customs

Only one company said that it did not have to deal with customs. Some of the other companies surveyed noted that the average time for customs clearance of goods had decreased over the previous two years, while others remarked that the quantity of required customs documentation per shipment had not decreased, but that the number of required signatures had. Company managers were generally not aware of imminent or actual changes in Jordanian customs regulations, for example, proposed changes in the law

requiring rationalization of the customs fines system or the new regulation whereby importers are no longer required to make a detailed declaration concerning the intended use of goods upon importation, and were likewise not aware of the development of an import/export guidebook by the Customs Department.

5. Institutions supporting the industry

The general feeling among firms regarding support institutions such as JEDCO was lukewarm, though some found this body useful. The country's Royal Scientific Society, on the other hand, was not recognized by most companies as trying to play a significant role in Jordan's higher technology.

For the computer subsector, the Jordan Computer Society was considered useful. Its meetings were felt to have some–though limited–impact, but the Government was "not listening" to problems facing the computer subsector in particular. On another level, it was admitted that the Jordan Computer Society was trying to improve the situation by helping to organize an annual technology exhibition in Amman, although the impact of this effort was perceived to be limited. The Society is also organizing symposia and meetings of firms in the subsector, but the overall usefulness of this support was questioned.

Nevertheless, most firms attend foreign exhibitions at their own initiative and have their own network of marketing and distribution. There was, in the opinion of most firms, no serious attempt to inform Jordanian firms about trade agreements and other aspects of international relations that might impinge on Jordan's business.

Services usually provided by marketing organizations, export centres and information networks, as well as advisory, design and R&D support, are provided by private organizations such as chambers of commerce. However, these services are not significant and their impact is seen as limited. Some efforts in these areas have been undertaken by the Jordan Computer Society, but the results are still very modest and do not involve strategic decisions or action to promote and sustain the industry as a whole; in general, it was private publications and magazines that provided information on the industry or on specific Jordanian companies. These publications are usually distributed only in the Middle East and do not reach markets or potential customers elsewhere.

On the whole, firms complained that there were no serious attempts to create institutions aimed at supporting this industry. The Amman Chamber of Industry tries to solve certain problems connected to the Jordanian Government (such as customs duties, power costs), but the impact of such action is very limited, partly because the Jordanian merchants' lobby is very influential.

The country's revamped Investment Promotion Corporation (IPC) is viewed favourably by some firms. Although most of those surveyed had neither visited the IPC nor received any of its services, companies rate the services of the IPC as potentially important. Locating an overseas partner is seen as a significant service provided by the IPC. The increased range of incentives of the 1995 investment law is important to some in

higher-technology businesses in Jordan. The customs and exemptions under this law are potentially of great importance to businesses, as are the law's provisions for tax exemptions.

G. Performance and Competitiveness of the Electronics and Computer Sector

1. Problems faced by the sector

Firms were asked to rank problems constraining production as "very serious", "serious", "moderate", "of little importance" or "unimportant." The order in which problems are listed below reflects their overall seriousness, with limited demand as the greatest problem and labour laws/social costs as the least for the sector as a whole.

- **Limited market demand** was seen as the major headache. No firm dismissed this issue as unimportant and only four saw it as of little importance. Seven firms considered it to be moderate and three serious. Seven companies saw it as a very serious problem.

- **Customs duties** was the second biggest issue overall for the sector: six firms saw it as a very serious problem, five as serious, seven as moderate, none as of little importance and three as unimportant. Customs formalities and extra costs relating to bribes were seen as a problem. One manufacturer complained about the lack of customs protection: his output was considered a raw material for the other producers, and importers competing against him paid relatively low customs. Other manufacturers noted that customs duties gave Jordanian industry only a small measure of protection.

- **Local competition** ranked third as an overall issue. This was a very serious problem for five firms, serious for none, moderate for ten and of little importance for four. Only two firms considered this issue unimportant.

- **Foreign competition** was seen as a very serious problem by three firms, with six others listing it as serious, five as moderate and three as of little importance; four companies dismissed it as unimportant.

- **Availability of skilled labour** was seen as a very serious problem by three firms. Five companies considered this issue to be serious, four moderate, four of little importance and five firms unimportant. No serious technical assistance to the subsector is being provided by the State or any other source. In order to improve production, some firms have undertaken in-house training at their own expense; firms noted that it was especially difficult to find qualified people for the technical and managerial levels.

- **Access to finance** was a very serious problem for four firms. Eight others considered it to be serious, three to be moderate, three to be less important and two unimportant. The need for medium- and long-term financing was noted.

- **Transport/port services** were a very serious problem for no firm. One saw it as serious, six as moderate, seven as less important and seven as unimportant.

- **Access to material inputs** was a very serious problem for only two firms. Eight firms saw customs as a serious problem, three as moderate, three as of little importance and four as unimportant. Customs duties on similar products were seen as too low. In particular, duties were low compared to neighbouring countries where the Government protects the industry with higher customs. On the other hand, some firms complained of high customs duties on imported raw materials. Temporary entry for raw materials was a possible way around paying customs duties, but there were complaints about temporary entry being subject to too many procedures and controls. Some firms thus preferred to pay duties rather than resort to temporary entry, which in practice turned out to be more expensive than paying duties.

- **Utilities (power, water and telecommunications)** was seen by only two firms as a very serious problem. Two others saw it as serious, two as moderate, three as less important and eleven as unimportant.

- **Labour laws/social costs** was the least important problem for the largest number of firms (ten). No firm saw it as a very serious problem, only one as serious, one moderate and nine as of little importance.

2. Productivity

- **Technology.** Of the companies surveyed, nine import their technology and know-how, eight of them obtain it locally, and four tap both domestic and foreign sources for technology. The countries from which the technology and know-how were imported included Singapore, Italy, the United States of America, Japan and the Republic of Korea. Many companies acquired their equipment from Taiwan Province of China, the Republic of Korea, Japan, the United States and Germany. Other countries include Spain, Switzerland, Turkey, Malaysia, the United Kingdom and Italy.

- **Material inputs.** Most companies (12 of them) import their major inputs, while three companies use locally produced inputs. Four companies obtain their inputs from abroad and from the local market, and two did not answer the question. Companies imported inputs from the United States, the Republic of Korea, Italy, Malaysia, Germany, France, Spain, Belgium and the United Kingdom, with the first three countries being the most important suppliers. The companies appear to have similar experiences concerning inputs. Sixteen of them do not find inputs difficult to obtain, four have difficulty and one did not answer. Only one company said that it does not pay any customs duties on imported inputs.

- **Machinery.** Thirteen of the companies had recently invested in machinery, eleven of them in new machinery, one in used items, and one in both new and used machinery. Seven refrained from answering the question, while only one had not invested in machinery recently. The age of machinery averaged seven years, ranging from

machinery acquired within the past year to eighteen years ago. Seven firms failed to answer the question about the age of their machinery.

The responses to the survey question concerning where the new equipment came from revealed that Japan, the United States, the Republic of Korea and Germany were main suppliers, while Spain, Switzerland, Taiwan Province of China, the United Kingdom, Turkey and Malaysia were less important.

On average, the companies produce at 46% of plant capacity.

3. Competitiveness in export markets

On the whole, the export market does not appear to be thriving for the electronics industry. Of the companies surveyed, 13 export. The share of total production being exported was 20%-60 %, with an average of 43%. The proportion of exports bound for Arab countries was 5%-100%, with an average of 83% (leaving exports to non-Arab countries at 0-95%, with an average of 17%). Export markets were established through participation in international fairs, through visits by foreign missions and through independent missions. Seven companies established export markets by participating in fairs abroad, three by foreign trade mission visits, and ten through independent initiative (these figures add up to more than the "thirteen" exporters reported, owing to the use of more than one method by some companies in the establishment of export markets).

Export markets were established and maintained in a variety of ways that showed the strength of the international network of the Jordanian private sector. The Gulf war does not appear to have weakened these connections. The more conventional methods of export marketing by participating in fairs abroad were cited by firms as were visits to Jordan by foreign trade missions. "Independent initiative" meant mainly going into markets through Jordanians living in Europe, Arab countries, the United States and elsewhere, with these Jordanians serving as intermediaries. The exporting firms that were surveyed typically had sister companies, offices, agents and/or other intermediaries in places abroad, in particular the United States. These affiliates tended to be in charge of marketing but sometimes performed other tasks. Jordan's Arab network was also important, though it tended to rely heavily on visits by independent Arab businessmen.

The main export items included air conditioners, PLCs, elevator control mechanisms, HMS, TLS, TV sets and audio products, software packages and electrical accessories.

Firms that were not exporting cited several reasons for this. One firm working with the Republic of Korea mentioned that it was that country's policy not to export goods produced cooperatively in Jordan. One firm mentioned that it was still working to obtain ISO certification before exporting. Weaknesses in marketing, uncompetitive prices, lack of financing and differences between international standards of products (software in particular) and Jordanian output were also cited as reasons for not exporting.

Major competitors in export markets were mainly Arab products but also included competitors from Cyprus and Turkey.

4. Competitiveness in local markets

Sixteen companies compete with foreign or locally produced products; the other five did not respond to this question.

Foreign products (as opposed to local products) were seen as competing with those of eleven respondents; two of these replied that their competitors were also local goods and two more agreed with this to a lesser extent. Italian and French products were specifically cited.

The estimated share of the market for local products was in the range of 5%-100%, averaging 48%. Total market share ranged from 1%-80%, averaging 14%, with competing goods from Taiwan Province of China and Italy specifically cited. Several firms had no clear idea concerning this.

5. Subcontracting

Of the seventeen companies who answered the question on subcontracting, five are subcontractors to foreign firms. The average share of output subcontracted was 41%. The subcontractors deal with the United States, Germany, Italy, the Far East and Dubai.

Outsourcing more technologically-oriented products was seen by some as one direction in the subcontracting chain. It was generally thought that cooperation and subcontracting would involve the Gulf countries, Egypt, Iraq, Israel, Jordan and the Syrian Arab Republic.

6. Competitive advantage

The advantages of Jordanian firms over their foreign counterparts were seen as mainly centring around lower cost, in particular that of the skilled labour involved in production, repair, maintenance, training, and technical back-up and support. This made Jordanian exports cheaper to produce and hence allowed them to compete more effectively with foreign products.

H. IMPACT OF THE PEACE PROCESS AND OTHER CHANGES

1. Eventual accession to the WTO

The impact of the WTO Agreement on business was seen as neutral by the management of six firms, while five think it will have negative effects. Those expecting a negative impact fear fiercer competition, the closing of new markets, copyright requirements and dumping.

2. *European-Jordanian partnership*

There was almost identical response to the question about the impact of the EC-Jordanian Association Agreement, in which tariffs between Jordan and the EU are to be eliminated by the year 2010. Again, six firms foresee no effect, and five foresee a negative effect. Two companies expect to reap benefits from the partnership agreement. Many companies are concerned about the greater competition they will face under the agreement. In addition to reducing Jordanian production it will, one firm claims, put "obstacles in the face of Jordanian exports", such as requiring quality certificates. A supporter of the agreement explains that it will reduce company costs and improve Jordanian firms' competitiveness.

3. *Peace with Israel*

Asked about the impact that the peace process will have on business, many firms omitted some or all of the questions. Five claimed that there had been no effect on business thus far; four claimed that peace with Israel was having a negative impact; and two said they were experiencing or anticipated a positive impact. Israel's robust market is viewed with optimism and pessimism. Those who would say the glass is half full look forward to having a wider and greater market to tap. Those who saw a half-empty glass deem Israel's abundance of capital and investment potential dangerous. One firm viewed peace with Israel as a means to export more easily to the West Bank. Many noted the obstacles placed by Israel on Jordanian exports. Other firms remarked that the Israelis had a great deal of investment in software, and that this was "very dangerous" for Jordan.

4. *Countries in the region that will affect the Jordanian electronics and computer sector*

Questions about which countries in the region will affect the Jordanian market indicated that most regional States will be influential in the local economy. Saudi Arabia, Turkey, the Syrian Arab Republic, Israel, Cyprus, Egypt, Iraq and the United Arab Emirates were the countries thought to have the strongest impact on the market in terms of competitiveness. The transfer of technology will be affected by the United Arab Emirates, Israel, Cyprus, Turkey and Egypt. The companies anticipate new markets to open in the Gulf countries, Iraq, the Syrian Arab Republic, Jordan, Israel and the West Bank and Gaza Strip. The Israeli market appears to have the greatest potential impact on the Jordanian market.

5. *Action being taken or planned, in the light of the peace process*

Asked about such areas as restructuring of the company, specialization, better technologies, new products and processes, and partnerships with other countries, firms tended to be pessimistic or even cynical. Many firms omitted some or all of the questions.

When asked what action is being taken and/or will be taken to cope with the peace situation, most companies did not answer. Of the six that did respond, two claimed that, on an individual level, they were doing well and did not expect to make any adjustments. The other four firms cited the need to introduce new technologies and new products. One firm expects to take a number of measures in addition to these actions to cope with the situation and plans to specialize and to enter into processes partnerships.

At the level of the sector as a whole, some firms advocated that the Federation of Jordanian Chambers of Commerce lobby the Government more strongly and effectively.

At the national level, the companies foresee that a great deal of action will be undertaken to cope with the peace situation, including economic restructuring of the company, specialization, introducing better technologies and new products, entering into partnerships with other countries, and adopting new business strategies.

6. Possible government action

Most managers of the companies surveyed became vociferous in explaining how the Government could make the electronics and computer sector more competitive. Firms felt that the Jordanian Government could make the sector more competitive in a variety of ways. Almost every company wants the Government to stop interfering with the industry. Companies object to the sales tax and call for: the reduction of customs duties on imported inputs; the elimination of excessive bureaucracy in government departments; the enforcement of intellectual property rights; the promotion of Jordan as an exporter of technology; the establishment of a body of 'quality and standards for technology'; the provision of aid to participate in international trade shows; and assistance in specialty training. Provision of databases and support in marketing regional exports were also called for.

III. CONCLUSION

The electronics and computer sector is rapidly becoming more important to Jordan's economy as well as to society as a whole, but a vision for the country's higher technology that includes serious planning and a clear strategy is lacking. As can be seen from the survey and as further confirmed by conversations in Jordan and elsewhere with others involved in the Jordanian sector, Jordan's government policy, such as it is, is seen as ineffective. Incentive measures provided (such as subsidies, tax and financial incentives, and export promotion) are seen as inadequate. State support institutions such as marketing organizations, export centres, and standardization centres, as well as information networks, extension and advisory services, and government provision of design and R&D help are viewed by firms as non-existent or at best grossly inadequate.

However, the performance and competitiveness of the private sector leave much to be desired. For purposes of serious regional and international competition, Jordan's electronics sector productivity (as gauged by labour costs, capital intensity and level of technology) tends to be low, output is small, and long-term financial capital is scarce.

Expenditure on R&D is severely limited owing to the absence of long-term planning. These elements are obviously not entirely under the control of the private sector, but the weaknesses in Jordan's higher technology are nevertheless clear.

Major problems related to the aftermath of the Gulf crisis continue to plague industry in Jordan. Meanwhile, a recession that began in 1996 threatens to become deeper, exacerbating structural problems. Competitiveness is threatened, and various problems are being faced by Jordanian firms in regional and other export markets. Competitiveness in the local market with regard to imported foreign products is also problematic. Subcontracting is seen as a way out by some firms, but this process is still in its early stages. The private sector under these circumstances is calling upon the State to do something; some of the industry's demands are reasonable and legitimate, but others smack of mercantilism.

Business managers' perceptions of the impact of peace are dim and vague. Relations with Israeli companies are seen by very few managers in terms of competitiveness, technology transfer, market outlets in Israel, specialization of the company, cooperation and subcontracting. Action undertaken or planned by the managers to cope with the peace situation–including restructuring of the company, developing specialization, adopting better technologies or entering into partnerships–is insufficient.

That the State should be called upon to do something under these circumstances is clear–but what? Higher tariffs are out of the question, but the emergence of an economic order based on the WTO will mean that Jordan's sector, given its present attitudes, may have a difficult time adjusting to a plethora of new rules.

Standards and specifications are still not a subject of serious attention in the higher-tech sector in Jordan. This will become a major problem, as standards such as ISO 9000 are being applied in other countries, in particular Israel.

Jordan cannot afford to neglect the higher-technology sector of its economy. Since Jordan has limited natural resources and significant human resources, economic prosperity will to a great extent depend on Jordan's ability to develop specialized, high value-added industries that could maximize the benefits of its investment in the education of its people. Few, if any, economic sectors offer the high value-added content of information technology. To achieve such an objective, focus should be placed on removing barriers to information technology development. This includes ending the telecommunications monopoly (which is already happening) and the speedy introduction and enforcement of copyright laws (which is in the process of happening). At the same time, Jordanian companies should begin in earnest to seek joint ventures in the field of specialized hardware manufacturing. More important, the software industry should focus on establishing R&D joint ventures, as well as marketing arrangements with organizations that have a worldwide reach. Only by expanding the market and integrating the country into the outside world can an advanced technology sector be developed in Jordan.

Merging and integrating existing industries may be a necessity at the local level and trying to merge at the Arab level is possible too (for example, the production capacity of just one of the three TV factories now operating in Jordan can more than meet Jordan's need for this commodity). Integrating makes it possible for producers to benefit from research, production and marketing possibilities available to them and the increased production capacity resulting from merger brings about a lower unit cost of products.

Industrial integration between Arab countries is a necessity if they are to produce electronic components and parts; also necessary is agreement between investors on how to achieve it. In the light of global changes and economic integration, this has become a pressing necessity.

On the other hand, working with the Israelis is also emerging as an option. This choice is being encouraged by the TRIDE scheme, a trilateral United States/Israel/Jordan project that seeks to encourage joint ventures among firms from the three countries. Funding for TRIDE comes from $1 million contributed in equal shares by each of the three States and, eventually, repayment income from companies participating in successful TRIDE-funded projects. TRIDE supports American-Israeli-Jordanian company partnerships dedicated to developing and commercializing non-defence-related innovative products or processes, though not necessarily exclusively in the electronics and computer sector. Funds are paid directly to the participating companies.

TRIDE actively recruits potential strategic partners from the United States and introduces them to target Israeli and Jordanian corporations. The companies meet and independently agree on a financial, legal and operating framework. In other instances, companies that have already decided to cooperate contact TRIDE directly. Target Israeli and Jordanian companies will have competitively priced technological and production expertise in the field in which the American firm has a relative market advantage. The Israeli and Jordanian partners must be willing to be guided by and/or cooperate with an American partner in the process of product development and commercialization and may thus gain access to European and Asian markets.

TRIDE funds 50% of the companies' expenses in developing a product to the stage of commercial readiness. Such funding, which is off the balance sheet, is provided in the form of a conditional grant, which does not entitle TRIDE to equity or intellectual rights. If the project is a commercial success, TRIDE receives repayments from the recipient, up to a maximum of 150% of the funding. Companies not realizing commercial benefits from the project are not under any obligation to repay TRIDE. The Jordan Technology Group (JTG) acts as the Jordanian technical consultant to TRIDE. JTG screens project proposals and the companies behind them before advising the Investment Promotion Corporation (IPC), which decides whether to allow the project to be presented to TRIDE for funding.

So far, three TRIDE projects have been approved. The first brings together an American company with the Israeli firm Shnud and the Jordanian firm Sedco to create a document management system in Arabic that uses optical character recognition to deal

with malleable texts. The second involves the Jordanian firm Computer and Communication Systems with the Israeli company Edusoft and a firm from the United States to arabize multi-media educational material, including technical and vocational material. The third links up the Jordanian company Computer Engineering Bureau (CEB) with the American and Israeli segments of Motorola to create Arabic language-based browser software.

TRIDE appears to have suffered from an excessive "veto" by the Israeli side, which appears to want to monopolize certain technologies and projects, instead of cooperating with the Jordanians. This is probably not surprising, and it goes without saying that Jordan and Israel have considerable distance between them in terms of business culture and entrepreneurship, not to mention political differences. These factors will act to slow down work with Israel, which admittedly could have a great deal to offer Jordan in the electronics and computer sector.

There seems to be a Jordanian potential in electronics and computers. The question is how skilfully can Jordanians use their modest but interesting resources in this sector to make it more dynamic and progressive. One test of this will come in the proposed joint venture between Jordan's Century Investment Group and Motorola. The two are in the advanced stages of negotiation to form a joint venture partnership to create a software engineering and development centre in Jordan. The purpose of this centre is to design and develop scientific software for Motorola products. Motorola will provide the technology expertise and specialized training while Century will establish the facilities and recruit Jordanian software staff. In addition, Century and Motorola have had discussions with the Jordan University of Science and Technology on developing a software-engineering curriculum so that future graduates would have improved skills upon entering industry. The joint venture will benefit Jordan through: the creation of about 70 high-tech scientific software jobs over the period 1997-1999; the acquisition of world-class skills in high-tech scientific software engineering and development, software quality assurance and software project management; and the export of scientific software products. (While researching the business climate for this software design centre, Motorola experienced an additional benefit of increased product sales in Jordan and identified two new business opportunities for electronics assembly.) This project's success or lack of success and that of the three TRIDE-sponsored schemes should become apparent in 1998, which may prove to be a crucial year for higher-tech in Jordan.

Annex

TABLE 1. MAJOR ELECTRONICS SUBSECTOR INDICATORS

Total firms	3
Total workforce	435
Output (JD)	12,465,000
Intermediate goods (JD)	6,034,000
Value added (JD)	5,217,000
Gross fixed capital formation (JD)	-
Average workforce per firm	145
Average output per firm (JD)	4,153,000
Gross output per employee (JD)	28,721
Value added as a percentage of output	41.9%
Average investment per firm (JD)	-
Total salary charges (JD)	860,000

TABLE 2. COST OF RAW MATERIALS AND SERVICES
(Thousands of JD)*

Total	1,214
Communications	11
Rent of buildings and equipment	26
Bank services	124
Cleaning and waste disposal	6
Travel expenses	20
Advertising and publicity	117
Accounting and legal fees	8
Other	775

Source: Jordan, Ministry of Industry and Trade, State Industrial Survey, 1994.

*JD 0.71 = $1.

THE HIGHER-TECHNOLOGY SECTOR OF THE SYRIAN ARAB REPUBLIC (ELECTRONICS AND COMPUTERS) IN THE LIGHT OF IMPENDING REGIONAL AND INTERNATIONAL CHANGE

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I. OVERVIEW

A. BACKGROUND

The next few years will be a period of extraordinary economic challenge for the Syrian Arab Republic. The country will be called upon to harness the opportunities provided by the system of trade and production introduced by eventual Syrian accession to the World Trade Organization (WTO) and the Euro-Mediterranean Association Agreements, and which comprehensive regional peace could enhance. These will be both cause and result of major economic changes taking place in the region. Meanwhile, rapid technological progress offers the potential of a more dynamic pattern of economic development, although for a positive scenario to unfold, much is required, and one of the toughest criticisms made against the Syrian Arab Republic today is weakness in high tech.

This is a study of the "higher" technology sector in the Syrian economy. Comprising electronics and computers, this sector cannot be described as high-tech, as it encompasses mainly relatively low-technology activities, such as simple assembly of certain electronic products. Nevertheless, in relation to much of the rest of the economy, this sector's technology is "higher." In addition, parts of the sector aspire to progress towards high tech.

Compared with some other countries in the region, electronics and computers are a subject generally absent from the Syrian media; economic meetings organized in the country by Government or private bodies (often in cooperation with international organizations) rarely discuss the electronics and computer sector. Economic studies carried out locally do not often choose electronics and computers as their subject, and decisions or information rarely come from the Government or a private party concerning this sector (for example on export encouragement, ISO, investment, meetings with visiting commercial delegations). Recently, however, international and regional organizations have been more active in studying the development of the electronics and computer sector in the country; among others, these include ESCWA, the Arab Fund for Economic and Social Development, and UNIDO.

B. SCOPE OF WORK

This paper will examine the following:

1. The Syrian Government's policy towards the electronics and computer sector:

- Incentives: subsidies, tax and/or financial incentives, export promotion
- State regulations concerning the sector: entry barriers, licensing, trade regime
- Support institutions: marketing organizations, export centres, information networks, advisory services, standardization centres, design and R&D support, and other facilities and support services
- State ownership of firms in the sector

2. Performance and competitiveness of the sector:

- Major problems
- Productivity in relation to labour costs, capital intensity, level of technology, technology cost, value added content, cost and sources of raw materials
- Competitiveness in export markets: export performance, problems faced in export markets, value of exports compared with production, and the position of companies in relation to major international competitors
- Competitiveness of the Syrian firm in the Syrian market against local and foreign products
- Subcontracting
- Competitive advantage over foreign products

3. Perception of owners and managers of firms regarding the impact of eventual peace:

- Future relations with Israel as perceived by firms, in terms of competitiveness, technology transfer, markets, cooperation and subcontracting
- Action to be undertaken by firms to cope with peace: restructuring of the company, specialization, better technologies, partnerships

C. METHODOLOGY

Twenty Syrian firms in the electronics and computer sector were surveyed. The firms were chosen to reflect broadly the country's electronics and computer sector. Interviews were carried out with owners or managers of these enterprises. Information was also obtained from other private sector organizations as well as government entities.

Information in general (and statistics in particular) is usually a problem in trying to study the Syrian economy. Traditionally, both firms and Government hide details of their work from outsiders. In the private sector, most firms were unwilling to give detailed or specific information. In the public sector, the limited information available was often not

up to date. In most cases it was not possible to obtain detailed answers to specific questions.

D. THE ELECTRONICS SUBSECTOR

Three larger firms make up the electronics subsector in the Syrian Arab Republic. The first, Syronics, was established in 1960 and started production in 1964, after which the industry developed very slowly. The Syrian private sector was unable to act in this regard, as it was hit by nationalization and other problems in the mid-1960s. On the other hand, the Syrian Government itself did not try to develop the electronics subsector. In the 1970s, dozens of factories were established by the Government, but very little State investment went into the electronics subsector, which was sorely neglected. Syrcotel, the second firm to be established in the subsector, was set up in 1975, but does not produce and is being liquidated. The subsector's third component, the Syrian-Korean Company (SKC), has just been established. The latter two firms will be discussed below, but the analysis will necessarily concentrate on Syronics.

Syronics is responsible for producing television sets, telephones and small telephone exchanges. The firm is a branch of the Syrian Engineering Establishment, an organization falling under the Ministry of Industry. Syronics manufactures some components of its final products (such as plastic television boxes and printed circuits) but is engaged mainly in the assembly of imported parts. The firm was established in 1960 as a branch of Al-Naser Company of the Egyptian part of the then United Arab Republic (which included the Syrian Arab Republic). The firm assembled black and white television sets from imported components, manufactured wooden TV cabinets and ancillaries locally, and undertook repairs and servicing for these sets in subsidiary workshops. By the early 1970s, the firm entered a period of expansion and began manufacturing some components for TV and telephone sets including printed circuit boards, specialized packing materials, and black and white TV tubes. The company also began to produce telephones and smaller switchboards. Syronics started assembling colour TVs in 1976 and ceased production of black and white sets in 1986. The firm has service centres in all major Syrian cities.

Syronics buys moulds and parts from a variety of international manufacturers such as Telefunken, ITT, Blaupunkt, Thomson, Eriksson, GoldStar, Samsung and others including Eastern European and South-East Asian companies. A very limited amount of technology transfer has been achieved by training Syronics' Syrian staff in the foreign factories of suppliers, as well as by experts from the latter visiting the Syrian Arab Republic, especially for the launch of a new line of production. No activity connected with R&D takes place at Syronics, however.

Syrian television assembly is currently restricted to Syronics, whose actual production in 1994 was 77,401 sets worth a total of 1.108 billion Syrian pounds (LS) or about $22.16 million (LS 50 = $1). Production in 1995 was 81,195 sets whose value was LS 1.129 billion (about $22.58 million). Assembly dominates production, which relies on ready-made imported components, with only a few non-essential parts locally produced.

Until 1986, black and white screens were made locally, but today colour TV screens are imported. The company does not depend on a permanent connection to any one importing company but imports its requirements from various sources through international tenders. Products of South-East Asia have recently won many tenders owing to cheap prices, but last year the French firm Thomson gained a contract to supply components for 25,000 colour TV sets.

The production of Syronics makes up the majority of the local consumption of TV sets. The Government forbids their import except for some tourist companies and first-class hotels, which bring in a few hundred foreign sets annually. However, Syronics production does not cover all the local market needs. In particular, the demand for sets of better quality has led to smuggling, especially of brands from South-East Asia and Japan; the quantity smuggled into the country in recent years has been estimated at between 10% and 20% of local consumption.

After stopping production for several years, Syronics' telephone production line is once again operating: in 1994 it produced 125,715 sets, whose value was LS 101 million ($2.02 million), and in 1995 its output of 35,700 sets was worth LS 29 million ($571,000). Production for 1996 is estimated at over 45,000 sets, with capacity of 300 sets per day in one shift. Syronics currently manufactures two phone models retailing at LS 1,170 and LS 1,350 respectively, with other more sophisticated models planned for early production. The company emphasizes that its sets are guaranteed for ten years and are easier to service than smuggled telephones currently retailing at LS 4,000.

Syronics' value added for 1995 was calculated at 21%, but the price of the firm's output is decreed by administrative regulation and not by the market. The most recent figures available from Syronics show that average annual production per worker in 1995 amounted to LS 1,250,000 or $25,000, which is a very low level for an assembly industry. The low productivity is related to the nature of the Syrian Government sector; thus, with the same number of workers it would be possible to more than double production, but absenteeism, disguised unemployment and similar problems keep productivity down. There are no more than 100 workers on the production lines at Syronics, with the rest, nine times this number, working in services and management. This ratio of 1:9 is very high.

Syronics' stated aims are not to make a profit but instead to do the following:

(a) Establish a local electronics industry to supply the local market and avoid imports;

(b) Create engineering and technical expertise and expand into other lines;

(c) Employ graduates from the country's technical schools, institutes and universities, allowing them to work in their lines of specialization;

(d) Transfer technology and adapt it for use locally;

(e) Eliminate the psychological impression that Arabs are unable to undertake electronics production.

Despite widespread criticism leveled at Syronics, UNIDO, for one, confirmed recently that the basic, "static" performance of the company is good (see the report of the UNIDO mission which visited the Syrian Arab Republic from 5 to 20 November 1994, specifically p. 50 of the Arabic text). Nevertheless, viewed "dynamically" over time, the company has failed. For example, Syronics has not developed any R&D capacity or solid international relations to support its production: it has not even engaged itself in long-term agreements with foreign companies for importing components or raw materials, or for developing technology transfer. Rather, Syronics announces its need for importing components, raw materials or machines through international tender. Price considerations are paramount, and any other factors, including technology transfer, tend to be neglected. Relations with international firms therefore not only did not develop but actually have deteriorated since Syronics' first contact with them in the 1960s. Syronics once produced black and white screens and other electronic items in addition to the TV box, cover and supplementary plastic and metal parts; today, the company imports its colour screens and most other components.

The value added of the Syrian electronics subsector as a percentage of that of the total economy is not significant and consists mainly of the output of Syronics. The 1994 UNIDO mission mentioned that the growth in value added achieved in the country's electronics subsector in 1980 was comparable with that of Singapore and Indonesia, but that the Syrian Arab Republic could not maintain or improve this level. Singapore and to a certain degree Indonesia have moved forward using developed industrial technology and then increasing the value added of higher-tech industry, while most of the value added of Syrian industry still comes from traditional manufacturing. The report's conclusion was that the incremental value added in higher-tech activities needed strong support to encourage the development of national technology over the long run. However, a firm such as Syronics, after over 30 years of production, still depends on imported technology just as it did when it was newly established.

Syrcatel (the Syrian Electronics Manufacturing Company) is a Franco-Syrian firm established in 1975. However, it never engaged in any significant activity and has now stopped production. The Syrian Telecommunications Corporation (STC) and the French firm CIT Alcatel jointly set up Syrcatel with the stated aim of transferring the technology for producing high-capacity electronic switching systems. In the first stage of the agreement, a factory was established and workers were trained. The factory was inaugurated in 1982 to produce switching systems with a capacity of 28,000 telephone lines. Soon after, Syrcatel stopped functioning except for some maintenance activity. The company is now about to be liquidated, and the Syrian side attributes this failure to several factors including:

(a) High prices for imports provided by the French partner, with component costs so high that a set produced by Syrcatel would cost 35%-40% more than an imported set;

(b) A drop in French shareholding in the joint venture to 13% (leaving 87% to the Syrian side), indicating no real foreign interest in a long-term relationship, except to sell components and other requirements;

(c) The intrusion of political issues, with European countries and the United States complicating or opposing the transfer of technology to the Syrian Arab Republic.

Recently, a new joint venture, SKC, was established between STC (with 51% ownership) and Samsung of the Republic of Korea (49%) for producing, equipping and constructing large and small electronic switchboards, and with a view to manufacturing other electronic products in the future including television sets, faxes, and video and other equipment. A 20-year agreement provides for transfer of the technology of these industries to the Syrian Arab Republic, the training of Syrian workers in the Republic of Korea for a short period (one month), providing the company with technical personnel from the Republic of Korea to train Syrians and supervise production, and of course, supplying components and raw materials from Samsung. This process has just begun, with the company recently being registered in the Syrian Arab Republic and the factory just starting production.

SKC is keen to avoid the shortcomings of the Syrian-French experiment. The cooperation contract provides for the transfer of technology through several phases:

(a) First, ready-made switching systems will be imported and installed;

(b) Second, half-assembled switching systems will be imported and locally assembled, tested and installed;

(c) Third, a mixture of primary products and components will be imported, and the switching systems will be locally manufactured, tested, constructed and installed.

The company was set up in accordance with the law on the encouragement of investment of 1991 (Law No. 10), which gives a new venture more flexibility and frees it from other government regulations, which are often confusing. The Syrian side hopes that this will set a new pattern in the electronics subsector in the Syrian Arab Republic. Low prices of the Republic of Korea and cheap Syrian labour should make it possible to produce inexpensive products with an appropriate level of technology. In particular, according to the chairman of Samsung in a statement made last year, it was felt that the nationals of the Republic of Korea could better understand Syrian desires to progress, as it was only until recently that the Republic of Korea was struggling to develop, as the Syrian Arab Republic was doing now.

However, this operation will not extend to manufacturing electronic components locally. Only certain non-electronic metal, plastic and other parts will be manufactured in the Syrian factory. Furthermore, technology flow from the Far East carries a cultural imperative; Syrians have to "industrialize" the minds of managers, foremen and others. The Asian 'tigers' represent a tough role model for the Syrian industrial sector, and the

accelerating pace of techno-industrial development will not make the task of adapting any easier.

Finally, some ready-made electronic components are used in a few local industries such as those making elevators and air conditioners. These firms use microprocessors and other electronic components, all of which are imported; there is no local production or processing in this case.

E. THE COMPUTER SUBSECTOR

The Syrian computer subsector includes over 100 companies involved in hardware and software.

Because of low Syrian income levels, as well as weak technical awareness, the hardware market is predominantly price-driven. This price dependence has reduced the justification for local hardware-related R&D. Nevertheless, some limited R&D activities are pursued at the State's Centre for Scientific Research and Studies (CSRS). They include among other things Arabic speech recognition using computers. The Centre envisages setting up a laboratory-scale "silicon foundry" to manufacture its developed designs.

The low technical awareness of the general public means that, like the hardware market, the Syrian software market is price-driven. This market is also fragmented and highly competitive. Its fragmentation can primarily be attributed to low entry barriers: at the very basic level, firms need only programming skills and simple hardware to establish themselves.

PC assembly in the Syrian Arab Republic has greatly expanded in the past few years; typically, trading companies rather than industrial companies become involved in such activity. Programming offices and institutes for training on computer applications, as well as specialized engineers with some practical experience in this activity, are also becoming involved. PC assembly is not controlled in any way by governmental or non-governmental organizations, and virtually anybody with some experience and simple equipment can purchase computer components from the companies which import them and assemble the components, with or without a trade mark. The value added of the assembly industry does not exceed 10%.

The PC components are all imported; nothing similar is locally produced. Most imported components are from the Far East or South-East Asia. Items from Malaysia and the Republic of Korea are particularly popular, but some European and American products are also gaining ground. Some companies assemble computers under "foreign" trade names, including the Ikrayim firm, which assembles and markets a computer under the name "Gold Teck" a trade mark registered in Taiwan Province of China and the Hamra Centre Company, which assembles and markets PCs under the name DTK, a trade mark registered in Austria. In fact this practice amounts to nothing more than using trade marks registered in a foreign country in cooperation with associates residing there. Computer

assemblers are not engaged in any agreement with foreigners for effective support of production.

Imports enter the Syrian Arab Republic either legally, mostly via the Jabal Ali Free Zone in the United Arab Emirates, or through smuggling via Lebanon or directly into the Syrian Arab Republic by air. A great deal of the officially imported or smuggled components are of inferior quality; they come with no guarantee, as the majority are from discounted stock. Some newly established Syrian workshops and computer firms, however, are looking to the future and provide assembled computers of good quality with a one- or two-year guarantee and paid maintenance thereafter; these firms sometimes give their production a trade mark to help ensure product quality. Some of the workshops have gained good experience in the assembly of PCs and have managed to ensure a certain degree of uniformity; they are now asking for government controls over the assembly process to protect the level and development of this area. However, to date this aim has been impossible to achieve, as is the case with quality control over industrial production in a number of manufacturing lines in the Syrian Arab Republic. The idea has been broached of a government authority to import computer components and distribute them to guarantee quality, but many doubt that this solution would be effective given the Government's performance in other fields.

Prices of computers on the Syrian market are approximately as follows:

(a) Locally assembled sets, about LS 70,000-100,000 ($1,400-$2,000);

(b) Sets produced in South-East Asia, about LS 80,000-115,000 ($1600-$2300);

(c) Sets produced in Western countries or Japan, about LS 95,000-135,000 ($1,900-$2,700).

It is estimated that around 20,000 PCs are in use in the Syrian Arab Republic. The number of computers assembled annually in recent years has increased to about 4,500, and in addition there are imports of about 1,500 PCs per annum. The main imports are, in approximate order of importance, ACER, IBM, Compaq, Apple, Epson, Sakhr and NCR brands.

In addition, there is some assembly of electronic Atari-like games with the local brand name Ali Baba or Sally, but this involves no more than putting together ready-made parts in the same manner as PC assembly.

There was consensus among public and private sector interviewees that establishing a local computer hardware industry in the Syrian Arab Republic would be difficult and would require special technology, large investments, major expenditure on research, a broad-based market, specific technical experience, trained workmen and other conditions unavailable locally. This makes establishing such an industry under present circumstances uncompetitive; even investors who have obtained licences to establish more sophisticated electronics industries based on assembly were unable to launch their projects and have

concentrated instead on trade or the very simplest assembly industry, which does not differ much from straight commerce. Most interviewees felt that the establishment of such industries should be carried out in direct cooperation with large international companies, but that the latter were still reluctant to work in the Syrian Arab Republic for various reasons.

The assembly of personal computers or electronic games requires nothing more than simple manual tools, and talk about enhancing the technological level is therefore not particularly relevant. Importing technology into the Syrian Arab Republic does not at present involve learning and so does not help in developing national skills.

Since the 1980s, some firms have been undertaking arabization of software. With the onset of the 1990s, a few were putting together packages of ready-made programs for financial and administrative applications. Software produced in the Syrian Arab Republic covers a variety of arabized applications, including: education; management systems for schools, hotels and hospitals; inventory control and accounting; CAD and geographic information systems (GIS); word processing and publishing; and special applications such as bar-coding, optical retrieval, archiving and microfilm.

Syrian companies are also involved in software development for Arab countries, with their work being generally well-received, since what they produce is sometimes not merely an Arabic version of a Western package, but is adapted to suit the practices followed in the Arab world. Firms in the Syrian Arab Republic working in this area could help in technology transfer and even in developing indigenous R&D capabilities.

Syrian software development skills are relatively good and inexpensive. This combination of skills and low cost could serve as a competitive advantage for the Syrian Arab Republic. In many cases, locally developed custom software is far cheaper than Western off-the-shelf items. Such a situation could provide a foundation on which to build a more robust software industry in which advanced applications could be developed.

The inventory control and accounting programs (these number around eight) devised by local offices have thousands of industrial, commercial and other users in the Syrian Arab Republic. The country is not considered a market for imported programs in English or other foreign languages, owing both to Syrians' weak English and to a general policy in the country that does not encourage the use of foreign languages in the various aspects of daily life.

The Syrian Arab Republic has some specialized programmers who can meet the market's needs at the required prevailing standard. Programming in the country is mainly undertaken by three groups:

(a) Government authorities (offering services mainly to other government bodies), including the National Information Centre (NIC) and the Syrian universities' unit for CAD programs;

(b) Agencies of non-Syrian firms such as Epson, Sakhr, NCR, IBM and Apple, which provide programs to purchasers of these systems, or which produce special programs by local programmers for local clients;

(c) Private Syrian firms which sell ready-made programs or produce specific programs according to client specifications; these firms include the Bazarji Company (producing the program al-Bazar), Ikrayim Company (selling the programs of the Egyptian firm Delta systems), the Hamra Centre (producing the program al-Aseel), the Idari Group (al-Idari) and Ufoq Company (producing the program al-Beiruni).

About 5% of the country's enrolment in vocational training centres is given training on various aspects of computers, including programming; about 60% of those receiving this training are students, with most of the rest being workers or job seekers. Initial training in programming takes around 70 hours, followed by another, advanced course in programming; completion of the latter course gives the graduate the capability to develop on his own through practice and private study. However, university qualification continues to be the main route through which programming skills are acquired, and most programmers are engineers in electronics or other engineering specializations.

The number of training institutes offering computer courses has greatly increased over the last few years in the Syrian Arab Republic. For example, there are 52 institutes affiliated to the Society of Vocational Education and Training Institutes in Damascus alone, and of these, about 20 are very active. The majority specialize in providing training for occupations and vocations outside the electronics and computer sector, but courses relevant to the computer subsector are becoming widespread.

The corporate and government demand for courses has increased. For example, the NIC is implementing a training contract for 400 employees of a government authority; the number of NIC trainees is increasing every year at a rate of 40% to50%, and the Centre works at full capacity, taking on 400 people per course. The NIC trains about 2,000 persons annually who receive official certificates upon successful course completion.

There are no foreign training institutes in the Syrian Arab Republic; the law still does not allow them to operate in the country; however, foreign companies' Syrian agents train customers in special courses not open to the public.

Syrian exports of computer programs are growing. Some programming offices and computer companies sell their programs in neighbouring Arab countries. For example, Bazarji Company sells its accounting programs in Jordan and has direct contact with clients (but has no office in Amman). However, the firm has three offices in Saudi Arabia bearing its name in each of Riyadh, Jeddah and Dammam, as well as a branch in Lebanon, and service and support offices through other companies in Kuwait and the United Arab Emirates.

Low cost and an Arabic format help Syrian programs to sell in neighbouring Arab countries, especially Saudi Arabia and the Gulf; competition comes mainly from Egypt,

with Lebanon following. Program export activity receives no support or direction from any governmental or other body. Every company depends on its own individual activity, which limits the possibility of expanding into other Arab or foreign markets, especially since the financial resources of these companies are small, larger businesses not having entered this area yet. The latter prefer to restrict their work to commercial activity dealing with well-known international brands of computers.

To date, the large international companies have not attempted to establish local programming offices in the Syrian Arab Republic; at any rate, local rules still do not allow this. Some Syrian firms have tried to establish programming courses in cooperation with international companies, but this also has not succeeded. The public's generally poor English plays a retarding role in using other than Arabic programs.

The Saudi and Gulf program markets are the most interesting, and many individuals and offices have specialized in programming work for companies there. Programming offices are also trying to extend their work to Jordan and Lebanon. Syrian activity in this connection can expand wherever Arabic is used, but under present circumstances cannot go beyond this particular market.

Syrian demand for computer programs is largely for locally produced programs basically because of their low prices and the public's weakness in foreign languages. Software industries from other Arab countries have tried to enter the Syrian market; thus the Ikrayim company sells the programs of the Egyptian firm Delta, for accounting, inventory and management for hospitals, schools, car rental, travel, tourism and other services. A few Jordanian programs are also found in the Syrian Arab Republic, but the Syrian software market remains dominated by local products.

II. SURVEY RESULTS

A. Ownership structure

Syronics is a Syrian public sector firm. Syrcotel and SKC are mixed Syrian public sector/foreign private sector companies. The remaining 17 establishments are in the private sector.

B. Age of Company and level of activity

Eighteen of the companies are in the production stage, while one is being established and one is stagnant and in the process of liquidation. A notable feature of the computer subsector is its very recent establishment. Among the newest within Syrian industry, many firms in this sector were set up in the 1990s (in some cases, however, the actual larger business which founded the computer firm was much older). This could possibly indicate more progressive and modern attitudes among managers unencumbered with old-fashioned ways of looking at technology, industry and trade. Unfortunately, this is not necessarily the case with the electronics subsector.

C. PERSONNEL

Syronics has close to 1,000 employees. Figures on staffing for Syrcotel and SKC are not available (the former is being liquidated and the latter is just starting up). The number of employees in the 17 remaining firms ranged between 3 and 97. Personnel in the electronics and computer sector are overwhelmingly Syrian. In Syronics there is no technician or engineer who is not Syrian, although the company sometimes brings in foreign expertise on a short-term basis to supervise the installation of a new plant, or for training purposes, or when major repairs need to be carried out. Syrian factories, hospitals, laboratories and the like that use electronic equipment, tools with electronic parts, or computers depend on foreign expertise only for major repairs. A rare hiring of non-Syrians can be observed at the Ikrayim company (agent of Delta Systems of Egypt), which uses a few Egyptian programmers to produce some locally required programs.

D. MAIN ITEMS PRODUCED

The items produced by the surveyed companies include telephones, software, televisions and personal computers; computer training for programmers is also an area of activity. Only the public sector is currently authorized to produce television sets and telephones, and the manufacture of these is monopolized by Syronics. The private sector monopolizes the assembly of personal computers and electronic games and dominates programming training on computer applications. The Government has licensed several electronics-assembly projects under Law No. 10, but most of them have not been implemented and none has yet reached the production stage. The Government has stopped granting new licences in the electronics assembly subsector under this law.

E. STATE POLICY TOWARDS THE SECTOR

A large majority of the companies reported that there were no institutions supporting the electronics and computer sector, and firms made the usual complaints about the general difficulties in dealing with Syrian government departments.

The investment climate suffers from, among other things, State interference. In particular, foreign direct industrial investment into the country is limited. However, the sector also suffers from neglect. There is no coherent national strategy and no national R&D centre for electronics and computer. No specific State policy exists towards the country's electronics and computer sector. Development of higher technology is not among the top priorities of the Government, and in an economy still dominated by the Government, the result of this neglect has been to slow down the development of the electronics and computer sector.

There is no specialized institution or organization in the Syrian Arab Republic dealing with export promotion. The Ministry of Economy has the lion's share of influence within this field, but there is also a certain amount of scattering of authority concerning the country's industrial and export policies. The Ministry of Economy is technically

responsible for the overall trade regime, but other ministries, including the Ministry of Finance, also carry out functions that have an important bearing on the matter.

On the private side, the country's chambers of commerce and industry have an interest in promoting exports and have been more active in the past few years.

In the computer subsector, the State's NIC has been trying increasingly to promote the practical applications of computers and informatics. Established in 1990, the NIC is a leader in introducing and developing new higher-tech ideas for the computer and related subsectors. For example, in 1996 the NIC held several symposia on processing information. These discussed the technology and applications of GIS to establish informatic rules in town planning, computerizing business and government organizations, setting up communication networks, and collecting geographical data. Another recent NIC activity included leading the National Cooperation and Coordination Committee for Information in an endeavour to link all the different sectors of the country that have or are about to set up a database and thus help in developing a national information system. An important part of the Committee's work involves putting together an Arabic information thesaurus, with help from the League of Arab States.

1. *Incentives*

The response to the survey question on whether the Government provided any incentives to the industry was mainly negative. No firms receive any subsidies or financial incentives. The Government does not offer any notable financial support to this sector, with the exception of the help given to the State company Syronics. This support is standard government policy towards public sector firms and includes support in providing liquidity by, among other things, allowing delays in repayment of debt to other government authorities or in payment of taxes and fees. However, it should be remembered that Syronics makes considerable profits compared with other government companies. Computer assembly firms in the private sector can sometimes obtain loans on easy terms from the country's industrial bank, but this is part of the Government's general policy towards manufacturing; there is no special support for the computer subsector.

Companies working in the electronics and computer sector pay the same taxes and fees as other businesses. Tax levels are not high compared with other countries, and indirect taxes predominate. However, the law exempts educational and vocational training organizations from taxes and fees, and this includes institutes offering computer programming. The exemption applies across the board to all such organizations. On the other hand, a consumption tax is levied on many electronic household appliances, as well as on personal computers and peripherals.

Procurement policy by State organs was a positive factor for firms, with the Syrian Government giving local purchases an edge over foreign articles.

2. *Licensing*

Government regulations stipulate that larger firms (such as the firms in the electronics subsector) require a particular licence, though no special legislation is applicable to the electronics and computer sector. Under the provisions of Law No. 10, Syrian and foreign investors alike are offered incentives such as exemption from customs duties and foreign-exchange regulations and tax holidays of up to seven years. The increased range of incentives provided by Law No.10 is potentially very important to the electronics and computer business. However, the Government continues to monopolize TV assembly, and despite the favourable general impact of Law No. 10, licences in this line have not been obtainable. The Higher Investment Council has refused many applications made under Law No. 10 by private sector organizations desiring to establish such a business, although the rest of the electronics subsector is open to the local and foreign private sectors.

For small operations, in particular in the computer subsector, many specialized engineers and businesspersons with some practical experience undertake manufacturing and commercial activity not required to submit to any form of licencing or control by governmental or other organizations. The irony here is that some in this subsector have been calling for various government measures to be applied, including licensing and import control. The Government has so far not responded to such requests.

3. *Trade restrictions*

Since the 1960s the Syrian Government has imposed a wide variety of restrictions on imports. These are designed to save on foreign exchange and to help protect local production, but their effect as part of an overall policy of State control has been stifling, according to most firms.

4. *Customs*

As is the case in many other parts of the region, the Syrian customs regime is onerous. However, some of the firms dealing with customs noted that the average time for customs clearance of goods has decreased over the past few years. Duties on imports of electronic components are 29%-47%.

5. *Institutions supporting the industry*

On the whole, firms complained that there had been no serious attempt to create institutions aimed at supporting this industry. For the computer subsector, the NIC was considered useful. Its meetings were felt to have some–though limited–impact.

On another level, some State and private sector institutions were trying to improve the situation by helping to organize exhibitions. The success of the second Damascus Computer and Telecoms Exhibition of March 1996 is an example of the heavy demand for this type of service. Local participation was strong and included State-owned firms as

well as private computer assembly, programming and training companies. The response of visitors was enthusiastic. Local fair activity and participation in international exhibitions has accelerated in recent years, and private fairs have started to appear. Since 1992, information and computer fairs have been held in local five-star hotels and at the site of the Damascus International Fair.

Most firms worked on their own to attend foreign exhibitions and have their own network of marketing and distribution. There had been, in the opinion of most firms, no serious attempt to inform Syrian firms about trade agreements and other aspects of international relations which might impinge on the country's businesses.

Services usually provided by marketing organizations, export centres and information networks, as well as advisory, design and R&D support, are all provided by private organizations such as chambers of commerce. However, these services were not significant, and their impact is seen as limited. Some efforts along these lines have been made by the NIC, but the results are still very modest and do not involve strategic decisions and actions to promote and sustain the entire industry. In general, it is only private publications and magazines that give information on the industry situation as a whole; these include the Arabic edition of *PC* magazine, which distributes about 1,500 copies of each issue in the Syrian Arab Republic. Its editor-in-chief, sub-editor, technical editor and three editorial consultants happen to be Syrian, serving as a further contact between the Syrian computer subsector and outside sources of information.

Official authorities are not involved in the international marketing process; the output of the private sector is marketed through the concerned company's own activity and through private commercial firms, or by direct sale to retail outlets. The Government restricts TV distribution to State corporations and establishments.

Syrian industry in general and the electronics and computer sector in particular lack databases and information networks. There are hardly any information centres in the country that provide what the electronics and computer sector needs. Information provided by the Government's Central Statistical Bureau is limited and not always accurate, up to date, or otherwise appropriate for the needs of business. Recently, the country's Union of Chambers of Commerce started to provide addresses and other basic information about European companies. The NIC has also recently begun to offer services to private sector clients. These are steps in the right direction, but far more is needed.

Syrian firms must depend on their own resources in establishing international or regional business relations. The services of commercial counselors in Syrian embassies around the world are inadequate. In the words of one interviewee, "They are not acquainted with the idea of offering services to the private sector, and very often, the advantages of Syrian exporters abroad are lost without the help that could be provided by these counselors."

Centres devoted to economic studies are still new, and their activities are developing only slowly. They are few in number and are dominated by one person or a

handful of people, meaning that such organizations have not yet taken on an institutional character. Since their resources are limited and their international contacts not widespread, business satisfaction with the services they provide is low; in addition, most local businesses are not fully convinced that economic studies yield tangible benefits and they believe that the money paid for such activity is wasted. This has a negative impact, of course, on development of such firms.

R&D generally seems backward, in particular in the electronics subsector; there are no government centres for R&D except the Centre for Scientific Research and Studies (CSRS). The universities carry out some simple theoretical research that is worth little to industry; more important research is shifted to the CSRS. The country's National Creativity Conference of 1987 described scientific research in the Syrian electronics industries sector as "nonexistent", and this assessment is still largely accurate ten years later.

F. PERFORMANCE AND COMPETITIVENESS OF THE ELECTRONICS AND COMPUTER SECTOR

1. *Problems faced by the sector*

The order in which problems are listed below reflects their overall seriousness. Access to finance was the greatest problem and labour laws/social costs ranked as lowest for the electronics and computer sector as a whole.

(a) Access to finance

The banking system is underdeveloped in the Syrian Arab Republic, which has still not permitted private banks. The primitive banking system means that 95% of business deals effected in the country are cash. Financial services provided by the public sector are poor, and talk about a reform of the banking sector and the establishment of mixed public-private banks has been stalled, as has the debate about opening a stock exchange. In this difficult situation, the plight of the manufacturer is even worse, with only 10% of bank loans going to industry. Syronics, for example, complained that past financing difficulties had deprived the firm of components and had slowed production.

(b) Customs

Customs was the second biggest issue overall for the sector. Customs formalities and extra costs relating to bribes were seen as a problem. Imports of electronics components are subject to tariffs of 29%-47%, which makes the finished product expensive and uncompetitive.

(c) Utilities (power, water, telecommunications)

Problems in the physical infrastructure, such as the electricity and telecommunications networks, were seen by several firms as very serious, though the situation is much better now than it was a few years ago.

(d) Availability of skilled labour

Availability of skilled labour was the issue on which the greatest differences of opinion were expressed. SKC says that its experience showed that Syrian workers learn readily, and that a certain amount of ambition pushes them. This was also apparent in training workers of the new company in the Republic of Korea. The technical manager of Syronics had the same positive opinion towards Syrian workers' capability to learn and develop quickly. SKC says it has engineers and technicians who know the basics of electronics and can develop through practical training. Syronics says that it is obliged to depend upon on-the-job training on the production lines. On the other hand, the departure of skilled technical staff in search of better wages was cited as a particular problem by Syronics.

(e) Access to material inputs

Access to material inputs, largely imported, was sometimes inadequate. For the computer subsector, the quality of some imported items was questionable; in particular those smuggled into the country. For Syronics, some of its suppliers were not serious about supplying raw materials, in particular electronic components; some sources were able to provide these materials and components. No viable, cost-effective local production has emerged. Furthermore, imports are severely regulated by the State, and access to them is sometimes problematic.

(f) Limited market demand/severe competition

Limited market demand/severe competition was not seen as a major problem for most. However, the difficulties encountered in attempting to transform Syronics' black and white TV tube factory to colour failed and was finally abandoned because of small production quantities. Syronics' inability to export and the country's small internal market meant that this difficulty could not be overcome, and the company ended up importing instead of producing locally.

(g) Labour laws/social costs

Labour laws/social costs were the least important problem for private firms. The government sector, on the other hand, suffers from overemployment, and Syronics is no exception. Such issues are now being discussed in the media; in recent years a number of measures were taken to correct them but these have had mixed results.

2. *Productivity*

(a) Technology

The "assembly" character of Syronics and other firms, their limited capacity, the high prices of advanced technology and limited local investment capacity, in addition to low Syrian labour productivity, all play a role in keeping down the standard of the technology of the Syrian electronics and computer sector. Assembly processes do not need complex technology, although testing and examining the television sets and the plastic injection lines at Syronics require equipment that is in line with prevailing international standards.

There has been reluctance by some Western companies to supply Syronics with complete technological information, and the general lack of contact between the Syrian Arab Republic and the main international sources of electronics and computer technology have had a negative impact. Moreover, the Syrian Arab Republic has not succeeded in developing its own technologies, and these two factors together have had a powerful downward impact on productivity.

(b) Material inputs

Material inputs are almost all imported, with no viable, cost-effective local production on the horizon. Furthermore, imports are severely regulated by the State, and access to them is sometimes problematic. This has had a negative effect on productivity.

The following table gives details of Syrian imports of PC components and others; brands are listed in order of importance.

Monitors	CTX, ADI
Processors	Intel Pentium, AMD 486DX4
Memory chips	Malaysia, Taiwan Province of China, and the Republic of Korea
Floppy disk drives	TEAC, Mitsumi
Hard disk	Western Digital, Quantum
Mouse	Genius, Microsoft
Multimedia	Sound Galaxy, Creative
Uninterrupted Power Supply (UPS)	APC, Emerson
Printers	HP, Epson, Star

(c) Machinery

The new firm SKC intends to use modern machines in its production lines. However, for Syronics, the period from 1980 until the present time has seen a greater reliance on more labour-intensive production and less investment in machinery. The

inability to bear the high cost of replacing old machines lessens the ability to compete. There is virtually no machinery in the private sector. The production tools and lines of plastic and metal terminal components needed for the production of some PC components are considered too expensive at current levels of production. The Syrian market is not big enough, and exporting is still distant, meaning that production levels are low and output is not competitive.

3. *Competitiveness in export markets*

The main export items in the field of electronics and computers are software packages. Export markets were established and maintained in a variety of ways that showed the strength of the international network of the Syrian private sector. The more conventional methods of export marketing by participating in fairs abroad were cited by some firms as were visits to the Syrian Arab Republic by foreign trade missions by other firms. "Independent initiative" meant mainly going through Syrian nationals living in Arab countries and elsewhere who acted as intermediaries. The surveyed exporting firms typically had sister companies, offices, agents and/or other intermediaries in places abroad. These affiliates tended to be in charge of marketing but sometimes performed other tasks.

Firms which were not exporting cited several reasons for this: weaknesses in marketing, uncompetitive prices, lack of finance, and discrepancies between international standards of products and Syrian output.

Major competitors in export markets were mainly Arab products.

4. *Competitiveness in local markets*

Syronics exists within a system of rigid import controls which the Government has imposed. It is only in this artificial situation that the firm's products are competitive. However, the eventual accession to the WTO means a dismantling of restrictions on imports. Another problem with this type of industry is that it is capital-intensive and is meant to serve large markets. This is obviously not possible internally in the Syrian Arab Republic.

5. *Subcontracting*

An increasing number of technologically oriented products are effectively being out-sourced in the assembly operations of Syronics and in the case of PC assemblers. However, these are not activities that are part of a subcontracting chain. Subcontracting is still virtually unknown in the country's electronics and computer sector.

6. *Competitive advantage*

The advantages of Syrian electronics and computer firms compared to foreign businesses were seen as mainly centring around their lower costs, in particular for skilled labour. This makes Syrian software exports cheaper to produce and allows them to

compete more effectively. A skilled worker in a local company does not receive more than $150 a month, and engineers do not receive more than double this amount. A program for bookkeeping and inventory such as al-Bazar, al-Idari, al-Aseel or al-Beiruni sells for LS 15,000-30,000 ($300-$600).

In addition to cheap manpower, the Syrian Arab Republic has skilful and capable businessmen. They are spread all over the world and active in various fields in different countries, where many of them occupy good positions. However, tapping into the potential that they represent would require fundamental changes in most factors affecting the investment climate in the Syrian Arab Republic.

G. Impact of the peace process and other changes

1. *Eventual accession to the WTO*

The impact of the WTO Agreement on business was not considered by most firms. There has been a certain degree of publicity in the Syrian Arab Republic to introduce the WTO to local producers and others, but the electronics and computer sector has not been a particular target of this activity.

Syrian businesses were divided on the subject of cooperation with more advanced countries and companies. Some had no fear of globalization, while others were more conservative. The latter were fond of citing the Syrian proverb "No one brings the wolf into his vineyard."

2. *Eventual European-Syrian partnership*

There was mixed response to the question about the impact of an eventual Euro-Mediterranean partnership agreement, which would eliminate tariffs between the Syrian Arab Republic and the EU by the year 2010. Many companies are concerned with the greater competition they would face under the agreement, with some firms claiming it would put obstacles in front of Syrian exports, such as requiring quality certificates. However, most businesses said that they had not made any preparations to face potential changes in the area because of such partnership.

3. *Peace with Israel*

Asked about the impact a future peace would have on business, many opted not to answer. Syrians view Israel's robust market with pessimism but not with fear. Some deem Israel's abundance of capital dangerous; but generally, serious attempts at evaluating the impact a regional peace would have on the country's economic environment were strikingly absent. Few studies or plans for economic responses have been undertaken, whether in the Government, universities or chambers of commerce and industry, on the economic repercussions peace would have for the Syrian Arab Republic. Neither the media nor other public fora debate the challenges the country would have to face after a peace treaty. The matter is not yet a topic of discussion.

There are objective fears on the part of Syrian policy makers, officials, academics, and members of the private sector about the challenges of a new and peaceful Middle East. To a large extent, these resemble the fears among the public in general: fears of further disunion and fragmentation in the Arab world, of Israeli economic hegemony, and of Arab economic dependence on Israel.

Many interviewees feared that the foreign aid which the country had been attracting from the regional system would most probably decrease with peace; at best it would only remain steady, they felt. To them, it did not seem as if the Syrian Arab Republic, in the short term at least, would obtain a fair share of the "peace dividend." International agencies' expectations that Israel would reap more economic benefit from regional peace than would Arab States have further increased Syrian anxieties.

It goes without saying that, to date, there are no commercial, industrial or educational relations of any kind between the Syrian Arab Republic and Israel. Syrian business managers are not enthusiastic towards peace talks between their country and Israel. The boycott by the Syrian Arab Republic of the Cairo, Casablanca and Amman economic conferences reflects the official position of the Government, as well as the position of business.

Syrian businesses today generally do not ponder the future of Syrian-Israeli relations and are conservative in discussing forms of tangible links that could in future be established between the Syrian Arab Republic and Israel. Few have much knowledge of Israel's electronics and computer industries.

4. *Regional players which could affect the Syrian electronics and computer sector*

Regarding the exchange of goods, Israel may prove to be of as limited interest for Syrian producers as the Syrian Arab Republic is for Israel's industries. It is possible, though, that the Syrian Arab Republic may gain a reasonable share of the Palestinian market. Historically, Palestine was the most important export market for Syrian industry, and the new Palestinian entity may offer market opportunities for Syrian products. At the same time, however, Syrian exporters may lose market share in the Gulf. Here, Israeli competition may threaten the Syrian Arab Republic.

In the longer term, Syrian electronics and computer businesses are likely to adapt to a new regional setting and find niches for their services and products. Syrians have often stated that their country's economic future lies in a regionally integrated economy. Peace with Israel is not the sole condition for this, however. Of similar importance to the Syrian Arab Republic is whether a framework for cooperation with the countries of the GCC can be established, and whether the Syrian Arab Republic could challenge some of the adverse results of Israel's entry into the region's economy by re-establishing economic links with an Iraq whose isolation has ended. From the late 1970s, when Syrian-Iraqi relations temporarily improved, until 1982, when trade relations between the two countries were

virtually severed, Iraq was the single largest Arab trading partner of the Syrian Arab Republic, absorbing up to 30% of its regional exports. To the extent that the new Middle East market may be Israeli-dominated, the Syrian Arab Republic risks finding itself at the fringes; with Iraq included, the Syrian role would undoubtedly be enhanced.

5. *Action that may be undertaken in the light of the eventual establishment of peace*

Asked about such moves as organizational restructuring, specialization, better technologies, new products and processes, and partnerships with other countries, firm managers tended to be cynical. When asked what actions would be undertaken to cope with eventual regional peace, most companies did not answer. Of those which did respond, most claimed that, on an individual level, they were doing well and did not expect to make any adjustments.

At the national level, the companies foresaw that a great deal of action would be undertaken to cope with the peace situation, including economic restructuring, specialization, better technologies, partnerships with other countries, and new business strategies.

6. *Possible government action*

There is no clear national programme for technology, and this must be the State's first task in the electronics and computer sector.

Standards and specifications are still not a subject of serious attention in the electronics and computer sector in the Syrian Arab Republic. This will become a major problem–and it is up to the State to take the lead in resolving it–as standards such as ISO begin to be applied in other countries.

Almost every private company surveyed called for the elimination of excessive bureaucracy in government departments. Many restrictions facing the private sector were mentioned: licensing requirements, export and import restrictions, financial regulations, laws on economic security, price controls and restrictions on establishing private technical teaching institutes. Some firms also said that they need State aid to help them participate in international trade shows, as well as the State's assistance in training. Provision of databases and support in marketing regional exports were also called for by a few firms.

III. CONCLUSION

The market for electronics and computer products and systems in the Syrian Arab Republic has been expanding steadily, especially in regard to software, TV sets, PCs and microprocessors. The electronics and computer sector is rapidly becoming more important to the Syrian economy as well as to society as a whole, but a vision for the country's higher technology that includes serious State planning and a clear strategy is lacking. Syrian government policy, such as it is, is seen as ineffective. Incentive measures

provided (such as subsidies, tax and financial incentives, and export promotion) are inadequate, and State support institutions such as marketing organizations, export centres, information networks, extension and advisory services bodies and standardization centres, as well as the provision of design and R&D help, are viewed by firms as non-existent or at best ineffective.

On the other hand, the performance and competitiveness of the private sector leave much to be desired. Much of the private capital that accumulates in the Syrian Arab Republic today is being smuggled abroad. With regard to the electronics subsector, it was the Government that invested in Syronics, Syrcatel and SKC. The private sector has invested almost nothing in the electronics subsector: personal computer assembly, programming training and programming do not involve investment of any considerable value. On the other hand, the private sector is still discouraged from investing in the electronics subsector: the ambition of private business was to obtain permits for TV assembly, but the Government continues to insist on monopolizing this activity.

For purposes of serious regional and international competition, the Syrian electronics subsector tends to have low productivity, output is small, and long-term financial capital is scarce. Expenditure on R&D is severely limited because there is no long-term planning. In the Syrian market today, there is no demand for industrial research; this obviously discourages research, which at any rate is seen as particularly costly for the electronics and computer sector. Prevailing conditions in the government sector do not encourage research; a researcher's very low salary is–in practical terms–no different from that of other government employees. Thus, the Syrian Arab Republic is characterized by backwardness in R&D. This is also true in services such as investment studies, engineering design, construction management, experimental manufacturing and the training of technical staff. Syrian industry is highly dependent on foreign technology, which puts it in a subordinate position, raising costs, and weakening the country's ability to compete.

The Syrian Arab Republic cannot afford to neglect the higher-technology sector of its economy. The country has significant human resources, and economic prosperity will to a great extent depend on its ability to develop specialized, high value added industries. Few sectors offer the high value added content of electronics and computers, but if the industries in this sector are to develop, focus should be placed on removing State barriers to information technology development. At the same time, Syrian companies should begin in earnest to seek joint ventures in the field of specialized hardware manufacturing. More important, the software industry should focus on establishing R&D joint ventures as well as marketing arrangements with organizations that have a worldwide reach. Only by expanding the market and integrating the country with the rest of the world can an advanced electronics and computer sector be developed in the Syrian Arab Republic.

For higher-tech electronics and computer production in general and information technology in particular to start playing a significant role in a developing country such as the Syrian Arab Republic, several pre-requisites must be in place. These include a sound

telecommunications infrastructure, a serious intellectual property rights regime and a solid educational system.

The telecommunications system of the Syrian Arab Republic was developed by a government monopoly, the Syrian Telecommunications Corporation. While the telephone network witnessed substantial expansion, with about a million new lines installed in the past few years, little interest has been directed at developing the telecommunications infrastructure necessary for a modern information-based economy. Under these conditions, information businesses in the Syrian Arab Republic have thus far been restricted, and neglecting the need to set up data- and multimedia-oriented infrastructure has delayed the development of indigenous electronic information activity. The NIC is aware of the problems caused by delays in upgrading the telecommunications infrastructure and has been urging the modernization of regulations related to information identification and other factors dealing with new techniques and technological systems that have not been yet mentioned in the country's laws. The NIC has been strongly in favour of Internet accessibility and ISBN.

The lack of guaranteed intellectual property rights is proving to be an obstacle to the development of the Syrian computer industry. Unfortunately, the Syrian Arab Republic does not seriously enforce its copyright laws, and this has so far reduced the possibility of serious software development in the country. Respect for intellectual property rights would allow better prices to be charged for intellectual and creative work. In the process, Syrian software developers would be forced to pool resources and integrate their efforts, while it is expected that less serious players would drop out of the market.

Intellectual property issues are being more seriously discussed now than at any previous time in the Syrian computer subsector. The NIC has helped raise the question of what the country's computer industry stands to gain from implementing measures to protect intellectual property rights, and stresses that new laws must also take into consideration future technology which will be developed. At the present time, no attempt is being made by the authorities to deal seriously with software piracy, a problem which also affects locally produced programs. A solution here is not readily forthcoming, especially in the absence of laws and established practices relating to intellectual property rights.

The Syrian educational system produces qualified personnel in the field of computer science, and their relatively low salaries compared with the West or the Gulf have helped the Syrian Arab Republic focus on software production for the Arab world. Syrian graduates have on the whole proved themselves to be well-qualified and have succeeded in Syrian and other Arab markets, before or after continuing their higher education. Still, certain measures are needed to improve the educational system so that graduates will be more productive and encouraged to think creatively. In many countries the university is a true centre for R&D, but not in the Syrian Arab Republic.

Academic organizations in the Syrian Arab Republic have only weak ties to manufacturers and producers; this is even truer for the electronics and computer sector

than it is for other sectors. The research carried out by universities has a theoretical character that is basically related to teaching in the universities. Limited budgets cannot support serious scientific research, and therefore the universities direct research projects to the CSRS to deal with them in the way it deems suitable; however, the relationship of the CSRS with the electronics and computer sector is weak.

Higher education related to the electronics and computer sector is restricted to Syrian universities and the Higher Institute of Science and Technology. Graduates of the latter do not work in industry, and universities are therefore the principal source of specialized engineers for the electronics industry; there are also a small number of graduates from abroad. In addition to the universities, intermediate industrial institutes offer mechanical, electrical and electronics specializations. There are many industrial secondary schools in the Syrian Arab Republic, which attach importance to technical education. Students there pursue a three-year course of study, and graduates are qualified to work as professional technicians in different industrial occupations such as maintenance of electrical and electronic equipment.

Factors which adversely affect the quality of graduates from higher educational institutions include: lack of specialization, which means that the graduating student acquires a great deal of broad information as opposed to a more profound knowledge of specific, narrower sectors; small numbers of professors and tutors compared with the number of students; low salary level of professors; poor financial resources of universities; and weak interaction with the electronics and computer sector.

Although universities and technical schools provide adequate education in electronics to an increasing number of students, most graduates face difficulty in finding jobs in their fields of specialization because of the limited local industry. Consequently, university graduates do not have the opportunity to acquire practical design and manufacturing experience, and many of them resort to working in unrelated fields. Teaching, electronic sciences and training in electronics industries in the Syrian Arab Republic are still generally backward in comparison with world levels, and there is a great need to upgrade these activities. The link between on the one hand electronics and computer industries and on the other hand education and training in them matters greatly in developing both; without industry there will be less need for teaching and training, and without effective teaching and training, the electronics and computer sector will not develop.

Technological links with developed outside partners are almost non-existent. Some interviewees believed that relations with developed outside partners and the support that these could provide are what the Syrian electronics and computer sector really needs. This sector, which requires costly R&D, a great amount of capital, and large markets, cannot be developed except by working with strong global partners. Even with government support, development will in general not be achieved without such partnerships. An exception might be the programming industry, where human resources play a major role. This industry could develop relatively quickly and begin to generate exports but in its present form cannot expand beyond the Arab world.

The principal problem that the growth of this sector faces is technological. Electronics and computers has no domestic tradition, and there are no electrical industries which could contribute experiences similar to those faced by the electronics subsector to help it along.

Capital is another major problem. The Syrian Arab Republic has great numbers of unemployed educated people and artisans who, if provided with capital, could establish successful companies. The Government is becoming a less important source of finance, yet in the private sector, capital flight has continued, owing to a number of economic, social and political factors. A just, lasting and comprehensive peace is desirable and may yield some profit, but will not provide a definitive solution for the economic problems faced by the Syrian Arab Republic, in particular the problems being encountered by the electronics and computer sector. The orientation of the Syrian economy is not related only to peace but to factors such as the WTO and Euro-Mediterranean partnership, both of which are indirectly related to peace negotiations. Economic problems will not be solved by the peace process alone but through domestic reform.

New partnerships between the agents of technological development in the Syrian community within and outside the country are required. More purposeful linkages with the public and private sector organizations in the regional and international economies are also needed in the area of technology. Foreign investment is a tool for transferring technology and efficient productive practices, thus boosting competitiveness, a certain general technological level is itself required in the economy and society, and this cannot be reached quickly. Industry, traditionally a carrier of technological progress, is called upon to play its part in this process, and at the same time, industry is a beneficiary of such progress.

There are divisions in the Syrian Arab Republic between the public and private sectors over economic policies. The need for change is perceived as increasingly urgent in the light of major regional and international developments. The greater possibilities for change are now present, in the context of the regime's increasingly private sector-oriented posture.

Business managers' perceptions of the impact of peace are dim and vague. Relations with Israel are seen by very few managers in terms of competitiveness, technology transfer, market outlets in Israel, specialization of the company, cooperation or subcontracting. Plans by the managers to cope with the peace situation, including organizational restructuring, specialization, introducing better technologies and entering into partnerships, are scant. However, Syrian readiness to contemplate peace has been evident since 1991. In the long run, a comprehensive peace settlement is likely to serve the interests of all the countries of the Middle East. Syrians interviewed for this study, however, feel that the "peace dividend" which is expected to accrue to the region will be unequally divided, and the Syrian Arab Republic does not for the foreseeable future expect to receive its fair share.

Whether the Syrian Arab Republic will gain a peace dividend or not depends on more than the conclusion of a peace treaty with Israel. Syrian development policies pursued till the mid-1980s included import-substituting industrialization. Since then, the Government has embarked on a cautious economic reform programme that has: led to the reduction of State control over production, foreign trade and consumption; broadened the scope of the private sector; and given more importance to economic rationality.

Various mechanisms may provide economic benefits to the Middle East after a peace settlement is reached. These include: intraregional trade and cooperation in a new Middle East with reduced trade barriers; investments from regional and international sources which a pacified and integrated Middle East would attract; and reduced State expenditures and the freeing of resources for economic development. The Syrian Arab Republic may well find itself the loser in such developments. In the short term, the integration of Israel's advanced and more efficient economy into the region poses a threat to the Syrian Arab Republic, which nevertheless does not have to fear a flood of Israeli products into its domestic market. Israeli industry undoubtedly offers a range of comparatively advanced industrial products which neither the Syrian Arab Republic nor other Arab States produce, but Syrian consumers in the foreseeable future will probably prefer to buy such goods from Europe or Japan. Few Israeli products will have a promising future in the Syrian market, and there is nothing to prevent the Syrian Arab Republic from continuing to protect its own industrial trade arrangements with Arab neighbours such as Lebanon, Jordan and the West Bank and Gaza Strip.

It is generally expected that regional stability and peace in the Middle East will encourage the inflow of foreign capital and help repatriate private money that has fled in the past decades. Capital flight from the Syrian Arab Republic has been particularly high: savings of Syrian residents abroad have been estimated at $26 billion. There is no doubt that even a partial reversal of this could promote economic growth. The Syrian Government, in the course of the cautious economic liberalization programme that it has been pursuing since the mid-1980s, has expended considerable efforts to attract local, expatriate and foreign investment. As a result, funds taken out of the Syrian Arab Republic may now re-enter as expatriate capital. There doubtless exist investment opportunities in the Syrian electronics and computer sector. Generally capital-poor, it could benefit if foreign and expatriate investments were to flow in. Some difficulties remain, however, regarding the country's prospects for attracting foreign investment or even expatriate capital. In a regional economy after a peace settlement, the Syrian Arab Republic will have to compete for investment with Lebanon, Jordan, Israel and the West Bank and Gaza Strip.

It was felt by most interviewees that the Syrian Arab Republic will not, in the short term, receive substantial economic gains from a peace settlement with Israel. The Syrian Arab Republic must be able to pursue necessary reforms to make use of its human capital and innovative forces and thus begin to deal constructively with the challenges and options of a new regional environment. This will require an overhaul of the country's foreign trade system and an emphasis on certain types of industrial exports, including some in the electronics and computer sector.

The State has involved itself in various ways over the past few decades in foreign trade, trying to regulate imports and expand exports, but meeting with limited success. Measures to encourage exports have had no impact on the electronics and computer sector. The Government's export policy tends to change in reaction to changing circumstances and is highly influenced by Syrian economic and political conditions. A complex regulatory system for exports and imports prevails. In general, the export promotion policy of the Government is ineffectual as far as the electronics and computer sector is concerned, and the private sector still depends on the scattered individual efforts of exporters.

In official meetings in the Syrian Arab Republic on export development, electronics and computers are not discussed, with the exception of exports of computer programs, which have become active over the past few years. On the other hand, the Syrian Arab Republic exports workers. Many of the country's graduates go to the Gulf States, including Saudi Arabia, to teach and train others on implementations and programming. These Syrians have proven to be successful in their work, and there is a demand for them in these markets. However, it is only when they and the country's expatriate capital come home that the Syrian electronics and computer sector will have the chance to establish itself fully as a serious producer and exporter.

Syrian imports of selected electronic goods, 1995*

Calculators and cash registers	28
Audio recorders	209
Radios and TV sets	170

Syronics key indicators, 1994*

Cost of materials	979
Salaries and compensation	71
Consumption	11
Total costs	1062
Value of production	1261
Other income	136
Total revenues	1395
Profit	333

*All figures are in millions of LS, rounded off.

IMPACT OF THE PEACE PROCESS ON THE HIGH-TECH INDUSTRY IN LEBANON*

Team International

Introduction

The peace process is changing the status quo in the ESCWA region, as well as the established political and economic relations and consequently is creating a high level of uncertainty regarding the future regional economic structure. It has already brought about economic and political changes in the region and is expected to result in more fundamental changes in the future.

The objectives of the present study on are the following:

- To analyse the changes that have already occurred in the industrial sector in Lebanon.
- To attempt to predict future changes resulting from the progress being made towards peace in the region.
- To examine the opportunities and threats that will arise over the course of such progress.
- To formulate policy recommendations that may help the development of the high-tech industries in Lebanon.

Team was asked to address the following issues:

- The size and importance of the high-tech industry in Lebanon.
- Policies toward the sector.
- Opinions of those interviewed (government officials and private sector industrialists) on the impact of the peace process on the industry in Lebanon.
- Recommendations for supporting the high-tech industry in Lebanon.

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* Team International wishes to express its gratitude to all those who contributed to this study with their suggestions, information and advice on where to find further information. In particular the authors appreciate the cooperation of the government officials and industrialists who gave their valuable time to respond to queries. It is hoped that this work will serve as a contribution to the national recovery plan of Lebanon.

The methods used to collect the necessary information were as follows:

- The study team carefully reviewed the requirements of ESCWA and FES as outlined through the documents presented to Team.
- The team compiled a list of private organizations and officials to be contacted and requested assistance in providing the necessary information.
- A detailed questionnaire to be filled out by high-tech industries in the private sector (annex 1) was prepared by the study team; a set of questions for officials was also prepared (annex 2).
- The interviews were held with high-level managers of the selected organizations, and data were collected.
- The information was compiled and analysed.

I. HIGH-TECH INDUSTRIES IN LEBANON

A. EVOLUTION OF THE HIGH-TECH INDUSTRIES IN LEBANON

Lebanon has traditionally been viewed by the Arab and Gulf States as the leading Arab exporter in terms of quality and in terms of the variety of manufactured goods, agricultural produce and commercial services. The 15 years of civil strife (1975-1990) had a negative impact on the Lebanese economy in general and on the industrial sector in particular.

According to the Report of Industrial Census issued by the Ministry of Industry and Petroleum, Lebanese industry has for the most part a brief history. Of the 23,518 Lebanese industrial enterprises (satisfying the criteria of having at least one machine, one worker, one material input and a finished product), only 12% were established before the 1970s. The period 1990 to mid-1994 saw the rise of 7,000 industrial entities, 1,808 of which were established in the first half of 1994. More than 41.3% of the enterprises producing equipment and electric products were set up in the 1990s immediately following the cessation of hostilities.

The Electricité du Liban was the first among its Arab counterparts–in the mid-1960s–to be computerized. Computer companies including IBM, Olivetti and others set up their regional offices in Beirut. However, like other economic activities, the high-tech industry in Lebanon found its growth and development severely hampered by the 15 years of civil strife.

The early 1990s saw a surge in the high-tech industry in Lebanon. New enterprises began to manufacture uninterrupted power supply (UPS) units, electronic boards and other electronic products, as well as information technology products and services. However, a

slumping economy and stiff competition from cheaper imports limited the high-tech industry's ability in software development and in the assembly and maintenance of personal computer hardware.

The entire high-tech industry is now lagging behind, compared with the momentous pace of progress characterizing this technology internationally.

High-tech industries will continue to become more sophisticated and worldwide demand for the output of these industries will grow.

Lebanon should prepare itself to take advantage of this opportunity for the following reasons:

- The high-tech industry requires large numbers of highly skilled and semi-skilled personnel. With the general and traditional tendency among the Lebanese population to pursue higher education, and the current large number of qualified job-seeking Lebanese technicians and computer engineers, the expansion of this industrial sector should be feasible with regard to human resources. This should also be seen as an opportunity to avoid future unemployment.

- The electronics, information technology (IT) and software industries are relatively clean and environmentally friendly industries that cause minimal noise and air pollution and that can be established in a relatively small space. These considerations are important for geographically small countries, such as Lebanon.

- For the IT and software industry, the opportunity is even wider and can be exploited immediately. In addition to the general advantages shared with the electronics industry, the software industry does not require intensive capital investment and provides white-collar jobs, which suits the typical Lebanese job seeker.

B. CURRENT STATUS OF THE HIGH-TECH INDUSTRY IN LEBANON

Banque Audi, in its fourth quarter report of 1996, stated that the volume of agricultural and industrial exports increased by 27.6% in 1996, in comparison with 1995, from $824 million to $1,019 million. This was in spite of weak demand. This growth in production, in the context of stagnation in bank loans to industry, reflects an improvement in the competitiveness of Lebanese products, in spite of the permanent appreciation in the real exchange rate of the Lebanese pound (LL). This effort demonstrates both the need to reconstitute the fixed capital of businesses and to extend industrial activities to new high value added products reflecting the comparative advantages of the Lebanese economy.

In 1996, the volume of bank loans to agriculture and industry was 16.2% higher than in 1995, and the import of industrial machinery was 2.7 times the volume in 1995, increasing from $115.5 million to $313.4 million.

According to the statistics of the General Directorate of Industry, 459 new industrial enterprises were founded in 1996 (compared with 431 in 1995), employing 3,414 persons and requiring an investment of almost LL 100.9 billion.

The software industry in Lebanon is an emerging industry with promising potential, an important industry for the future of the Government, businesses and society. Most of the software activities carried out in Lebanon are applications, developed to meet the needs of users. These applications deal mainly with accounting, stock management, and budgeting. However, some firms develop larger systems for local and international markets.

The past few years have put new demands on the software industry. Managers of large companies as well as small and medium-size enterprises have started to perceive the value added of software to their business. In spite of the economic hardships, these companies started to invest in software and hardware, which resulted in a significant growth for the IT industry in Lebanon. The government policy toward modernizing public administration has also had a considerable impact on the software industry growth in the country.

According to the report of a UNIDO mission to Lebanon ("Software technology in Lebanon: realizing a potential") by Michael Hobday and Abbas Taher, the computer industry consists of around 650 firms, 250 of which develop and maintain their own software (only 70 of the 250 firms have been in business for more than two years). The remaining 400 companies are small shops supplying personal computers to the local market.

According to the same report, the software and hardware suppliers in Lebanon are divided into six categories:

- Category A: Brand-name hardware vendors. This category consists of 20 firms, mostly distributors or agents of major foreign computer makers such as Olivetti, SUN and IBM. These firms buy brand name computer hardware and sell it to local users.

- Category B: Niche specialists, fully customized package developers. This category is an emerging group and consists of 10 to 15 companies which provide fully customized solutions for specific market niches in Lebanon and overseas. In contrast to Category A, they develop fully tailored packages for individual clients and are software-led.

- Category C: Niche specialists, standard package developers. This category consists of around 15 firms, which sell a standard package to a wide range of

customers. Although they may tailor their products, the degree of customization is much less than in category B.

- Category D: Assemblers, micro-enterprises and individuals. This category is made up of between 200 and 300 suppliers, many of which are retail outlets that conduct some software activity. Of the assemblers, 10 to 15 are fairly large companies which buy parts directly from Taiwan Province of China and other sources and produce low-price PC clones. The vast majority are very small firms which purchase hardware from category A to produce clones.

- Category E: Software teams within large user organizations. This category represents an important group of software producers and consists of around 85 organizations, including banks, manufacturers, hospitals, large distributors and universities.

- Category F: Agents for brand-name (foreign-built) software packages. This category consists of around 5 firms in Lebanon which supply foreign brand-name software packages to the local market and provide some degree of internal software modification, support, training and backup.

Table 1 shows turnover estimates for the period 1991 to 1994 and forecasts for the period 1995 to 1997. These data are from a 1995 report by Team International; table 2 is an updated version.

The two tables reveal a sharp decrease in UPS manufacturing. Owing to enhancements in the electricity supply in Lebanon, most clients prefer low-cost, high-tech imported UPS units with internal batteries (where local competition is minimal). UPS manufacturers shifted from selling locally made units to imported goods. Instead of the forecasted 50% increase in UPS manufacturing in 1995, the industry shrank by about 15%. The more advanced technology characterized by smaller-size components, smaller batteries and consequently smaller products facilitated the imports of UPS and gave an edge to large international manufacturers.

Besides the categories mentioned in tables 1 and 2, new sectors such as digitizing of data and the Internet have begun to flourish in Lebanon (see table 3 and figure 2).

It is noteworthy that the Lebanese Government is expected to be the leading user in the future in Lebanon. Although the computerization of operations at public institutions lags behind that of banks, hospitals and retailers, nevertheless the reconstruction programme and the modernization of various public administration offices will bring about brisk demand in the future.

A substantial part of government budget allocations for 1996 for computer technology was not spent owing to difficult laws and purchasing procedures, which have not yet been adapted for this sector. Some of the unspent money will be transferred to the 1997 budget; some of the allocations were cancelled, however.

C. CURRENT PROBLEMS AND CONSTRAINTS OF THE HIGH-TECH INDUSTRY IN LEBANON

Severe problems and constraints confront the high-tech industry in Lebanon; these include poor infrastructure, lack of capital, high interest rates and inadequate technological support facilities.

Thirty-one high-tech companies were identified, and 17 of them were interviewed.

Five of these companies declared that they have discontinued their business in manufacturing UPS and other electronic products, as they were unable to compete with imported goods, in particular from Taiwan Province of China, in terms of price and quality.

Of the remaining 12 companies, 7 responded positively and answered the questionnaire, while the remaining 5 refused to cooperate.

The problems and constraints faced by those who responded to the questionnaire are the following:

- Low volume of exports compared with production, owing to the non-competitive prices of Lebanese products.
- General lack of appreciation in the Lebanese market of the value of high-tech and poor understanding of the possible uses of software in promoting business and enhancing education.
- Absence of government financing and investment banks.
- Absence of research and development financing.
- Security problems arising from the unstable situation in Lebanon, which affects the trust of foreign customers.
- Management personnel lack sophistication.
- High taxes on raw materials.
- Employment laws are highly complex and involve too much bureaucracy for start-up firms.
- High risk of piracy resulting from and contributing to the undervaluation of the industry.
- High turnover of staff.
- Telecommunications infrastructure still very slow and unreliable.
- High rates of interest on bank loans.

TABLE 1. 1995 STUDY: TURNOVER ESTIMATES FOR 1991 TO 1994 AND TURNOVER FORECASTS FOR 1995 TO 1997

(Thousands of US$)

	Estimate				Forecast		
1995 Study	1991	1992	1993	1994	1995	1996	1997
Hardware	18	22	25	38	45	80	120
Software	6	9	14	20	30	45	60
Consultation	••	••	••	1	2	6	12
Computer training	1	1	2	3	5	10	15
Uninterrupted power supply (UPS)	14	16	18	20	30	40	50
Hardware and software support	32	35	35	40	50	70	90
Total	71	83	94	122	162	251	347

Source: Team International.
Note: Two dots (••) indicate that data are not available.

TABLE 2. 1997 STUDY: TURNOVER ESTIMATES FOR 1995 AND1996 AND TURNOVER FORECASTS FOR 1997 TO 2000

(Thousands of US $)

	Estimate		Forecast			
1997 Study	1995	1996	1997	1998	1999	2000
Hardware	22	45	80	120	130	190
Software	28	42	45	60	90	120
Consultation	2	5	20	40	45	76
Computer training	3	4	6	15	18	30
UPS	16	12	10	12	14	16
Hardware and software support	41	52	55	90	110	125
Total	112	160	216	337	407	557

Source: Team International.

TABLE 3. 1997 STUDY: TURNOVER ESTIMATES FOR 1995 AND 1996 AND TURNOVER FORECASTS FOR 1997 TO 2000

	Estimate		Forecast			
1997 Study	1995	1996	1997	1998	1999	2000
Digitizing of data			15,000	45,000	30,000	20,000
Internet (connection, page-Design, hosting and Updating, advertising)		2,000	10,000	50.000	60,000	80,000
Total	112,000	162,000	241,000	432,000	497,000	657,000

Source: Team International.

Figure 1. Market distribution for the year 1995

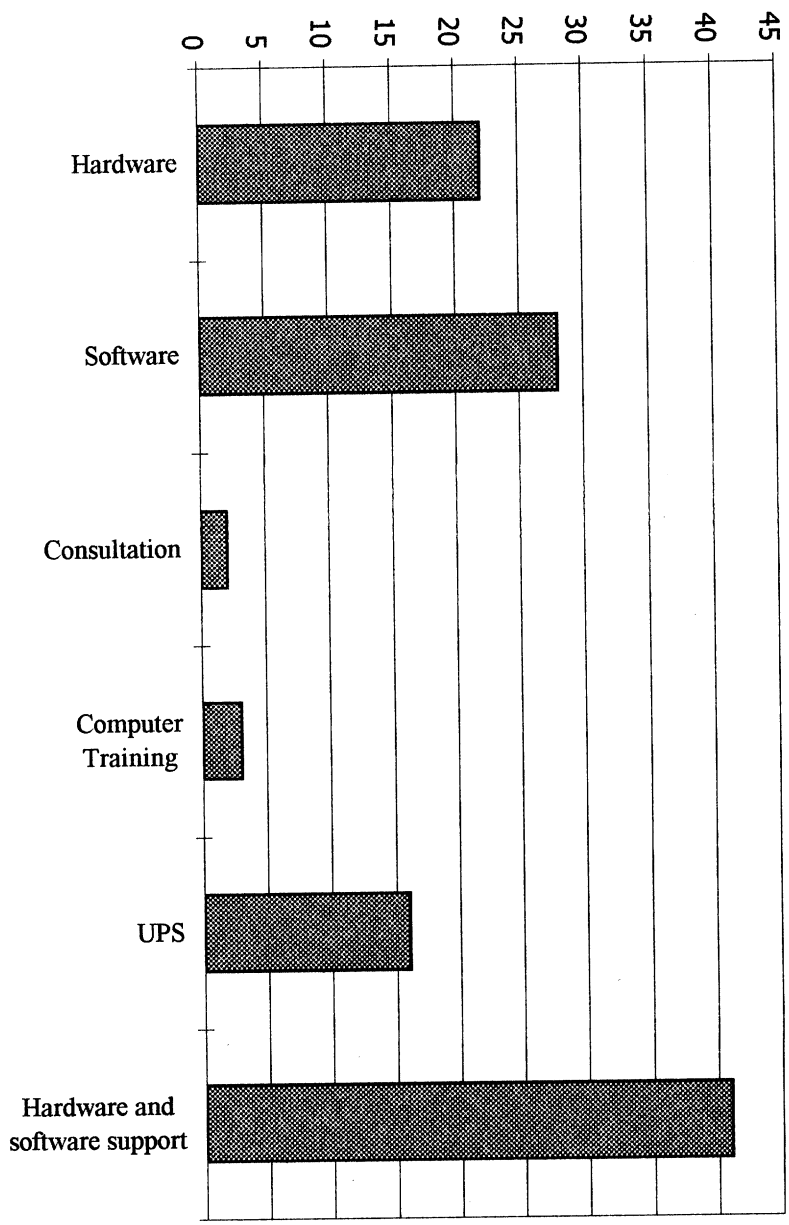
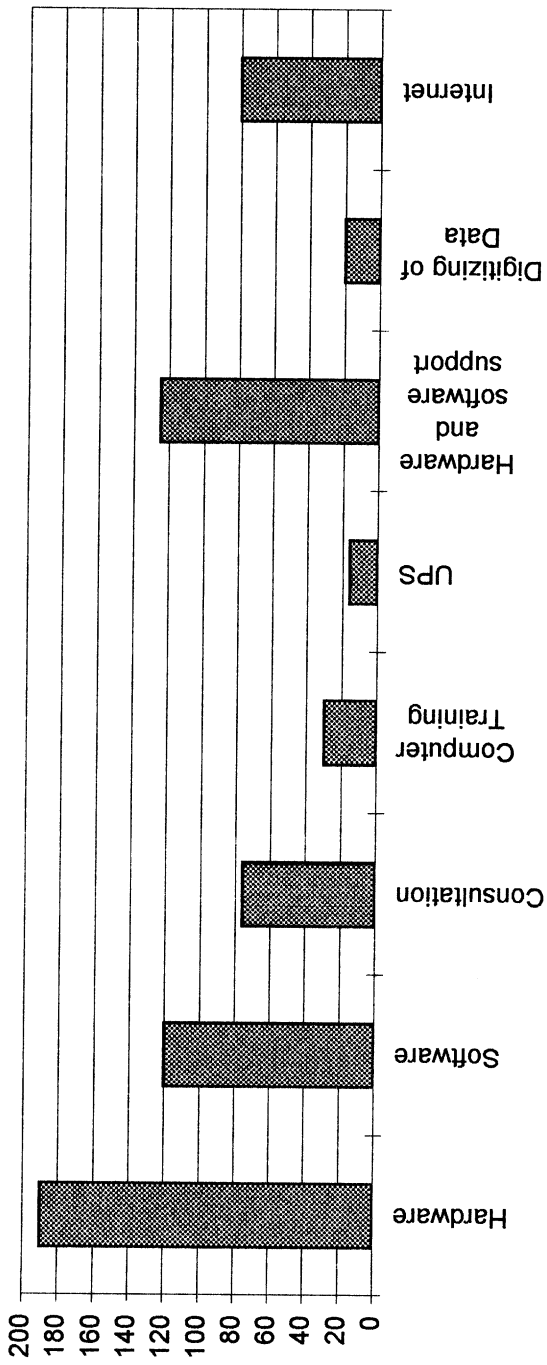


Figure 2. Market distribution forecasts for the year 2000



II. IMPACT OF THE PEACE PROCESS ON THE HIGH-TECH INDUSTRY IN LEBANON

A. POINTS OF VIEW: LEBANESE OFFICIALS

In order to find out the Government's opinion regarding the impact of the peace process on high-tech industries in Lebanon, the authors met with officials from the Ministry of Industry, the Ministry of Economy and Trade, UNIDO, the Chamber of Commerce and Industry, the Investment Development Authority of Lebanon (IDAL) and the Association of Lebanese Industrialists. Most of the officials interviewed stated that because Israel's high-tech industry is far more advanced than that of Lebanon, there would not be a great deal of competition. However, it was believed that competition might take place in software, where Lebanon has an industry that is somewhat developed and may be able to face imported Israeli products. As for trade relations, most of the officials interviewed noted that it would be quite some time before Lebanese consumers began purchasing Israeli products.

Mr. Nadim Salem, Minister of Industry, stated the following:

- In its 1997 budget, the Government allocated LL 8 billion to subsidize industries in Lebanon. This subsidy will cover up to 5% of the interest rate above the London Interbank Offering Rate (LIBOR) plus 2 on loans from commercial banks to industries.

- The Government has adopted a policy requiring all public institutions to buy locally made products.

- The Government is currently studying two projects, one of which would give a tax break to industries that set up outside the major cities, and the other of which would set up a bureau to promote Lebanese exports abroad. This bureau may function along the same lines as the tourism bureaus worldwide.

- There are no regulations to protect the local industries at this time, because Lebanon has a free market economy.

- The Government will be formulating a strategy in the context of certain treaties and organizations with which Lebanon is involved, namely GATT/WTO, the Euro-Mediterranean partnership, and the Arab common market.

- Public institutions such as Libnor (Lebanese Norms Organization) and the Scientific Institute for Industrial Research are being reactivated, so that they can help in setting higher quality standards for imported as well as for manufactured goods.

- If there is going to be peace with Israel, trade and industrial relations, as well as subcontracting activities, will be conducted through a third party (the United States and/or Europe); however, these relations should be made direct, so that there would not be any additional cost on goods.

- There should be a common regional industrial strategy whereby industries would be distributed all over the region. This would foster cooperation and coordination among the countries of the region, as opposed to their competing among themselves to the detriment of all.

- Lebanon could benefit a great deal from the technological advancement of Israel, since the civil strife left Lebanon technologically behind other countries such as Israel.

- All that Lebanon needs at the present time, is technology transfer; it has all the required capital and qualified human resources. In addition Lebanon can always call on its huge emigrant population worldwide for either capital or skills.

- The Lebanese Government must support the high-tech industry, because it is the industry of the future.

- The Lebanese people have a technology potential that should be developed through technical and vocational schools.

Mr. Haïtham Al-Bawab, Head of the Department of Trade at the Ministry of Economy and Trade, said the following:

- The Ministry of Economy and Trade supports foreign trade through trade relations and by facilitating procedures related to foreign trade, as well as by organizing and/or participating in international expositions.

- The European industry represents a clear danger to the Lebanese industry.

- As Lebanon is about to take part in the GATT/WTO and the Euro-Mediterranean partnership, Lebanese high-tech industry must be ready to face the new challenges.

Dr. Mehdi Al-Hafedh, UNIDO's Country Director (Lebanon, Syrian Arab Republic and Jordan), stated that:

- A comparative study, covering the whole region, should be carried out in order to assess the areas of cooperation and competition.

- Israel may not be the biggest challenge to Lebanon's high-tech industries, but rather industry giants from South East Asia.

- The competition from South East Asia may force the Arabs to cooperate with the Israelis, a situation which may threaten the Arab industry.

- Since the Israelis are not willing to share their technological know-how with any other country, for security reasons, the Arabs must formulate a long-term strategy to support their high-tech industry in fields such as new materials, bioengineering and genetic engineering.

- If political and religious issues are set aside, then trade relations and mutual subcontracting may take place through a third party, possibly Europe and/or the United States, leading to direct relations and mutual subcontracting at a later stage.

- There will not be any Lebanese private or public investment in Israel.

Mr. Rashid Beydoun, Vice President of the Chamber of Commerce and Industry, said the following:

- The Government provides no support or protection for Lebanese industry.

- The Lebanese Government offers no support, even for the Lebanese industries participating in the international expositions, whereas other countries do support their local firms in such expositions.

- Israel will not have any special comparative advantage to compete in the Lebanese market, because Lebanon already imports most of its goods from Europe and the Far East.

- Israel will not have any special advantage among other countries exporting to Lebanon.

- A real problem may arise if Israeli investors start buying shares in Lebanese industry.

Mr. Saad Oueini, General Manager of the Association of the Lebanese Industrialists, stated the following:

- Only a software industry can be truly said to exist in Lebanon; the hardware sector involves assembly only.

- There is hope that the many promises of the Government will be followed through with action to support the industry in Lebanon and protect it from foreign imports.

- The Government is planning to set up a high-tech industrial zone in Lebanon.

- With regard to the impact of the peace process, "the Lebanese people will not psychologically accept trade relations with Israel. Egypt is proof of that."

Mr. Imad El-Moghrabi, engineer at IDAL, along with his colleagues Mr. Tarek Takieddiene and Mr. Ghassan Tannous, made the following points:

- Lebanon cannot compete with Israel, since the Israeli industry is subsidized by the Government, and this is not the case with the Lebanese industry.

- Even if the peace process goes into effect, there will still not be any trade relations with Israel in the near future.

- The Lebanese Government will be supporting industry in general by setting up free zones and industrial zones where the "tenants" will enjoy tax breaks and many other incentives to help them produce and export.

B. POINTS OF VIEW: LEBANESE INDUSTRIALISTS

This section presents the point of views of some industrialists on the impact of the peace process on the high-tech industry in Lebanon. The consensus was that although Israel has a much more highly developed industry, Lebanon can compete if the right policies are set to help local industry develop and sell their products locally and abroad.

Mrs. Rania Monla, Manager at CDC Systems, a local software company, believes that Lebanese companies can compete with their Israeli counterparts if the right support is provided. The Government must provide the software industry with funds to finance R&D and long-term projects. This support could be in the form of grants, incentives, tax breaks, soft loans, etc.

Dr. Fadi Chehayeb, president of SMI, a software company based in Lebanon and the United States, said that the peace process will have a positive impact on his business, as American investors will have more confidence in his or any other company in Lebanon. Peace will certainly bring more business to Lebanese industry. However, he believes that there will not be any exchange of products and skills between Lebanon and Israel before at least three or four generations. He added that "the Government has to play its role in providing incentives to help the industry prosper."

Mr. Michel Nseir, General Manager of Software Design, a local software company, believes that Israel will take a maximum of 30% of the local market, which would not fundamentally affect the overall software industry in Lebanon. He would like the Government not to interfere with private business in any way that may hinder its performance.

Mr. Moufid Charafeddine, General Manager of Professional Consultants, a local software company, said that as of mid-1996 the private sector began to invest in upgrading their hardware and software, taking advantage of advances in technology (resulting in cheaper and better hardware), the new generation of software (Windows 95) and the Internet invasion of the business world. The mid-1995 price cut on RAM chips caused the overall price of PCs to go down by more than 25% and to give more confidence to the clients of Professional Consultants. He also said that Lebanese dealers were offering free international support ranging from three to six years in order to be in line with the policy of the major hardware companies. With better infrastructure and political stability, the software industry (already possessing good human resources) would become more competitive, especially if it used the Internet as a fast and efficient way of communication and marketing. Thus, turnover figures for the software market would be higher if investment in software export were encouraged.

III. POLICY RECOMMENDATIONS

In a press conference held 13 March 1997, the Lebanese Prime Minister, Mr. Rafik Hariri, set out several policy recommendations and guidelines to revive the industrial sector in Lebanon, as follows:

- The Government will support all industries that could compete worldwide; it was left to the Ministry of Industry and IDAL to identify these industries.
- The Council of Ministers agreed to prepare a decree to encourage and direct investments in Lebanon.
- The Government should facilitate the entry of foreign investors into Lebanon.
- The Government will reduce the complex bureaucratic and administrative procedures now required for start-up firms.

In addition, government bodies such as IDAL are helping prepare drafts of decrees that would provide investors with many incentives, if such decrees are approved by the Council of Ministers and the Parliament. The incentives include tax exemptions for a certain period of time, reduced utility rates, allowing investors to rent spaces in the free zones, and more lenient labour laws, for example, exempting employees from the CNSS[1] charges; however, this means that the employer is forced to provide an alternative health insurance programme, which may be just as expensive.

The industrialists interviewed for this study suggested a number of recommendations for the improvement of the industry:

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[1] Contribution to National Social Security.

- Unhealthy rivalry at the national level among the numerous concerned institutions should be resolved by instilling community spirit and a true sense of responsibility for the coordination that is so badly needed.

- Mechanisms to enforce favourable legislation and decrees should be created.

- There needs to be support for the formation of an independent advisory body/bodies for the high-tech industry aiming at organizing this sector. This authority should then be responsible for dealing with illegal competition as well as problems related to matters such as quality, prices and consumer protection.

- Educational programmes and publicity campaigns aimed at maximizing the productivity of traditional industries on the electronics industry must be formulated and implemented.

- Establishment of liaisons between educational institutions and the industry, to facilitate R&D activities, which is the essential requirement for making progress in this sector.

- A modern and reliable data bank for researchers and investors must be established and maintained.

- Rehabilitation programmes aimed at reversing brain drain must be accelerated.

- Higher educational and technical training curricula need to be reviewed.

- The possibility of exporting to third world and Arab markets, especially the Syrian Arab Republic, should be investigated; these are important extended markets where this industry could flourish and grow.

- The level of the education and skills of the software workforce must be upgraded to current international standards.

- The performance of technical institutes should be monitored and these institutes should be encouraged to provide training on the latest computer technology.

- There needs to be legislation against software piracy, including legislation to prevent software piracy.

- Investment banks that could provide soft loans to companies for their R&D and long-term projects needs to be established.

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Annex 1

SURVEY QUESTIONNAIRE FORM

Company:_____ Date: __/__/__

Interviewer: _____

Persons interviewed (attach business card):

Name	*Title*

Telephone:_____ Fax: _____

A. PERFORMANCE OF THE SECTOR

1. Please specify your production capabilities and your market share for the last three years. Itemize by product.

Quantity of production (units)				**Market share (percentage)**		
	1994	**1995**	**1996**	**1994**	**1995**	**1996**
Consumer electronics						
-						
-						
-						
Software						
Telecommunications						
Industrial instrumentation						
Specialized applications						
-						
-						

2. Trade relations (itemize by product to the greatest extent possible).

	1994	1995	1996
Export as percentage of production			
Major export countries			
Major import countries			
Main imported items			
Main exported items			

3. Make a list of your relations to more advanced production partners.

Export agreements (division of labour)	
Division of market	
Subsidiaries/subcontracting	
Partnership/joint ventures	

B. TECHNOLOGICAL CHARACTERISTICS OF THE SECTOR

4. Specify the level of production technology (compared with international advances in this area).

Machinery	Poor	Average	Good	Excellent

5. Level and availability of local skills.

	Number
Managers	
Engineers	
Technicians	
Others	

6. Level and availability of imported skills.

Managers	
Engineers	
Technicians	
Others	

7. Are there any links between any industrial R&D and academic R&D, if R&D exists?

8. Specify any systematic educational and/or training programmes you offer to your personnel.

9. Specify any technological links to more advanced partners, if any.
- Sharing of innovations
- Local R&D
- Advanced training
- Updating of machines/production techniques

7. Major problems faced.

C. COMPETITIVENESS OF THE SECTOR

10. Analysis of productivity: Output/employment.

11. Analyse the export performance of your firm with respect to:
- Problems faced in export market
- Volume of exports versus production
- Competitive position
- Major competitors

12. Analyse the competitiveness in the local market of your firm with respect to :
- Imported foreign products
- Volume of imports versus production

13. Competitive advantage of your product(s).

14. Production advantage:
- Skills
- Size of market
- Available investment, capital

Annex 2

QUESTIONS ADDRESSED TO GOVERNMENT OFFICIALS

A. What is your country's policy towards the industrial sector?

1. What are the incentives provided by the Government?
   - Subsidies
   - Tax incentives
   - Financial incentives
   - Export promotion

2. What are the government regulations that govern the sector?
   - Entry barriers
   - Licensing
   - Trade regime

3. Does the Government provide any support institutions?
   - Marketing organizations
   - Export centres
   - Information network
   - Extension and advisory services
   - Standardization centres
   - Design and R&D support
   - Other facilities

4. Who owns the firms in the sector?
   - Public
   - Private

B. What are your expectations with regard to Arab/Israeli industry and trade relations if the peace process succeeds?

1. Trade relations

   (i) What trade relations would emerge? (import and export)
   - Direct
   - Subcontracting
   - Via a third party

   (ii) Could Lebanese products compete in the Israeli market?

   (iii) Could Israeli products compete in the Lebanese market?

2. Industry relations

(i) Do you expect any emerging or potential cooperation relations?
- Exchange of skills and information (fairs, conferences, training)
- Subcontracting (software/hardware)
- Joint ventures
- Strategic partnership

(ii) Do you think there would be links to a more advanced third party (United States, Europe)?
- Direct
- Subcontracting
- Subsidiary investment

(iii) What would be the implications of cooperative relations on:
- Capital investment
- Technology transfer
- Attraction of third partners

C. Subcontracting arrangements

1. What would be the actual activities performed under subcontracting arrangements (for example, the occupied territories)?

2. What would be the potential activities performed under subcontracting arrangements?

3. What would be the forms, types and mechanisms of operation in the country (of potential subcontracting arrangements)?
- Areas of specialization
- Exchange of services
- Benefits to each side

4. What is the profile of entrepreneurs that would be expected to operate in subcontracting?
- Skills
- Labour cost
- Capital investment
- Exporting advantages

5. What Israeli cooperation links would there be with the industrial sector in Lebanon?
- Investment
- Know-how contracts
- Transfer of technology
- Partnership

Part VI

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS AND RECOMMENDATIONS

A. PROVISIONAL ASSESSMENT OF THE IMPACT OF THE PROGRESS ACHIEVED

1. The peace process, though facing a serious crisis, has brought new economic realities to the region, which have to be dealt with by the ESCWA member countries. A new economic entity is slowly becoming an actor in the region's economic relations, an economic entity with a different level of development and different economic, industrial, trade and financial structures and magnitudes. The wide economic disparities between ESCWA member countries and Israel will be a critical factor in determining the shape of emerging economic relations, as and when more progress is achieved in the "peace process".

2. Although they declined over the period 1990-1995, economic disparities between many ESCWA member countries and Israel are still wide. With a total population of around 20 times that of Israel, the neighbouring countries and areas—Egypt, Jordan, Lebanon, the Syrian Arab Republic and the West Bank and Gaza Strip—had a combined gross domestic product barely equal to that of Israel in 1990 and exceeding that of Israel by around 12% in 1995. The GDP of Israel, amounting in 1995 to $86.8 billion, exceeded that of Egypt by more than 43%. In this respect, it should be noted that the average annual growth rate of GDP in Lebanon and the Syrian Arab Republic surpassed that of Israel during the period 1990-1995.

3. Such drastic figures uncover serious differences with respect to living standards. With a per capita GDP of more than $15,000 in 1995, Israelis are able to enjoy a much higher standard of living compared with the populations of neighbouring ESCWA members. Lebanon ranked second, with a per capita GDP of $2,950, as the country has been able to recover from the civil war. Without adjustment to the purchasing power index, the per capita GDP in Israel is 15 times, 13 times and 10 times that of Egypt, the Syrian Arab Republic and Jordan respectively. In this respect, it should be noted that these differences in per capita GDP between Israel and ESCWA member countries would be smaller if the real purchasing power in various countries were taken into consideration.

4. The contribution of major manufacturing branches to total manufacturing value added differs widely between the selected ESCWA member countries and Israel. In the former countries, labour-intensive industries—food, beverages, tobacco, textiles and garments, and wood products—are dominant, constituting in 1992 more than 50% of total MVA in Egypt, the Syrian Arab Republic and the West Bank and Gaza Strip, and one third of total MVA in Jordan; in contrast, the manufacturing sector in Israel is dominated by capital-intensive industries, mainly machinery and fabricated metal products, which accounted for 43.8% of total MVA in 1992.

5. With total exports of around $19 billion in 1995, Israeli exports were more than five times those of Egypt and the Syrian Arab Republic together. The growth of exports in Israel during the period 1990-1995 was faster than that of all neighbouring countries, though Egypt, Jordan and Lebanon recorded high export growth performance during the same period. On the other hand, Israel's large volume of imports (more than $28 billion in 1993)

accentuates a chronic trade deficit which has historically plagued the country. A combination of heavy military spending with the ongoing need to import raw materials and consumer goods has resulted in a sustained trade deficit. Recently adopted trade liberalization measures have brought about a marked increase in imports of consumer goods.

6. The structure of trade also shows large differences between Israel and its neighbours. In 1995, manufactured exports accounted for more than 91% of Israel's total exports, as compared with 81% for Lebanon, 59.2% for Jordan, 46.2% for Egypt, and only 18.2% for the Syrian Arab Republic. Manufactured goods dominated the import structure of ESCWA member countries and Israel. They accounted for 83.6% in Israel, around three quarters of total imports in Lebanon and the Syrian Arab Republic, and around 62% in Egypt and Jordan. Intraregional trade among ESCWA member countries is limited, as the total intraregional trade (excluding oil) of ESCWA members amounted to only 26.6% in 1994, declining from a peak of 28.2% in 1991.

7. Tariff and/or non-tariff barriers are used in several ESCWA member countries and in Israel to protect domestic industry. However, recent global changes, in particular the liberalization of international trade through the WTO, and for some countries the transition measures towards a free-market economy, have led many countries, including Israel, to introduce economic reforms and to consider reducing the established tariff rates.

8. The Israeli economy is heavily subsidized by foreign donor countries, in particular the United States, and also by world Jewry. Furthermore, prior to the 1990s, the Israeli economy was highly protected. The country adopted a protectionist trading policy consisting mainly of administrative controls designed to help its economy. Most imports were subject to prior licensing and quantitative restrictions. The trade liberalization programme implemented since 1991 has made tariffs the main instrument for protecting local industry. However, Israel is currently reducing its tariff rates, in order to comply with WTO rules. Accordingly, the tariff rate on textiles, for example, will be reduced drastically, from 72% to 12%, by the end of the transition period in January 2004.

It should be pointed out that global fair-trade agreements, as stipulated by the WTO, require the reduction of outright subsidies, at least for exported products. Israel, in its effort to join the WTO, has been reducing all apparent subsidies to the manufacturing sector and to exports. However, there are still various forms of subsidies, including government preferential purchases, incentives to investment in selected geographic areas, and generous support to R&D, industrial research and start-up companies. All these subsidy forms have to be considered, in the light of the rules of "fair trade", when dealing with neighbouring Arab countries.

9. As the tariff structure is gradually dismantled, the countries in the region, including Israel, are turning to other means to protect their industries from outside competition, such as non-tariff barriers imposed on imports. Quotas are among the most widely used forms of such non-tariff barriers.

10. In addition to quotas, entrepreneurs in the region must deal with a host of rules and regulations restricting business activities, such as: licensing and registration requirements; delays in import clearances; standards and (recently) environmental requirements and procedures; labelling rules; and kosher requirements. These are just a few of the many forms of non-tariff barriers imposed in the region to control trade and business activities. In addition, there are other inconveniences at border crossings, such as: security checks; shortened working hours; recurrent and long border closures; documentation requirements; vehicle registration laws; unreasonable customs notification requirements; non-computerized facilities; and a host of other costly and time-consuming bureaucratic measures which must be followed. These measures have turned the routine practices incidental to trade into serious bureaucratic and administrative barriers and have severely constrained trade activities in the region.

11. The present study attempted to analyse the nature of emerging regional economic relations and the extent to which trade relations would be a major factor in economic relations between Israel and its Arab neighbours and other countries as well, as a result of progress achieved in the "peace process" and in view of the latest global developments. To this effect, emerging trade in manufactured products between Israel and neighbouring countries was examined.

The economic agreements that Israel signed with Egypt and with Jordan have as yet had little impact on trade relations. This is more apparent in the case of Egypt, which signed the agreement 18 years ago; trade with Jordan is still relatively new. Available data indicate that trade between Egypt and Israel was at a very low level until 1993 ($10 million approximately for both imports and exports, excluding oil). With developments in the "peace process" in 1994, the volume of trade more than doubled between the two countries. Notwithstanding the dramatic growth, the volume of trade is still very small when compared with the total trade volume of the two countries. In 1995, the share of exports of Egypt was less than 0.2% of total Israeli exports, and the share of Israeli products in the total imports of Egypt was below 0.3%.

12. It may be too early to assess the trend in trade relations between Jordan and Israel. However, early figures are indicative. Israeli exports to Jordan were insignificant in 1995, amounting only to around half a million dollars, and rising only to $8.7 million in 1996. The trade balance of Jordan with Israel shows a deficit in favour of Israel, amounting to $3.6 million in 1996.

13. It is very clear that the signing of peace accords and economic agreements alone do not give Israel the status of a privileged trade partner in Arab markets. Trade with other more competitive countries will continue to be the practice, in particular as more and more local markets are opened and trade is liberalized as required by the WTO.[1]

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[1] Exception is made here for the Palestinian market where, according to the terms of the Paris Economic Agreement of 1994, the Palestinian economy is still closely linked to the Israeli economy.

14. Trade liberalization and the reduction of protectionist measures—whether as a result of new peace accords with Israel, further Association Agreements with the EU, or the accession of more Arab countries to the WTO Agreement—would create a very challenging and dangerous environment for the manufacturing sectors in most Arab countries. This situation would necessitate, on purely economic grounds better inter-Arab cooperation and the rapid implementation of a pan-Arab free trade area (AFTA), leading to a more meaningful Arab economic bloc, which could better face these challenges.

The establishment of AFTA needs serious efforts from all Arab countries concerned, in particular since there is clear opposition to it on the part of Israel, and to a lesser extent the EU, both preferring, in line with their own interests, to deal with each Arab country on a bilateral basis.

15. The impact of the "peace process" on economic relations would be limited without economic reforms (on both sides of the borders) to address problems relating to tariff and non-tariff barriers, controls on business activities, the complexity of bureaucratic procedures, and other restrictions. The progress of economic reforms and the impact of the peace process are therefore interlinked. The emerging relations could also be hampered by difficult non-economic barriers, including cultural barriers, and by the rate of progress in reaching a final settlement, including the questions of Israeli settlements, Jerusalem and the Palestinian refugees.

16. Given the current difficulties facing the Arab economies in the ESCWA region and the gains the Israeli economy has already realized from the provisional progress made towards peace, the absence of complete and immediate independence of the Palestinian economy from the stranglehold of the Israeli economy will give even greater advantages to Israel and extract more costs from the Palestinians. The precedents set by the pauperization of the Palestinian economy under a "common market" with Israel during the years of occupation do not augur well for the future of the Arab economies of ESCWA under peace.

Under peace, the interests of the Arab economies would only be met by greater cooperation and broader economic integration, as a first step. This would increase their economic size, reduce the existing gap with Israel and prepare them better for possible cooperation with Israel under peace.

17. It should be pointed out that there is a strong theoretical economic foundation for the expectation that liberalized economic interactions among unequal partners would bring about increased polarization of advantages. This outcome could be minimized if the disadvantaged partners were to develop their primary economic sectors, differentiate their production and broaden their options for exchange with other partners.

Thus, the real economic issue facing the countries in the ESCWA region, under the challenges of the coming peace, is how quickly and how well can they restructure and reform their economies and coalesce their common interests, to create an economic entity of a size that could face up to the expected exploitation and domination by more advanced and articulated economies with a strong desire to dominate.

B. THE PEACE PROCESS AND THE GLOBALIZATION OF THE WORLD ECONOMY

1. In recent years, the global economy has undergone radical changes, with important implications for future economic relations between ESCWA member countries and the rest of the world. These changes include: the transformation of most centrally planned economies into market economies; the increased domination of market forces; the recent conclusion of WTO agreements leading to globalization and liberalization of international trade; and the establishment of large economic blocs such as the European Union and the North American Free Trade Agreement (NAFTA).

The above changes, along with the impact of the "peace process", will shape to a large extent the economic relations between ESCWA countries themselves, as well as between these countries and the rest of the world, including Israel. The Euro-Mediterranean initiative, leading to the conclusion of bilateral trade agreements between the European Union and individual ESCWA member countries, is another factor that will have an impact on future economic relations between ESCWA member countries, the EU and Israel. The free-trade agreements Israel has signed with both the European Union and the United States will also affect future regional economic relations.

2. Globalization of the world economy covers all economic sectors, including the industrial sector, with giant transnational corporations (TNCs) increasingly dominating all aspects of production and trade. Large-scale production of consumer items is being globalized by TNCs, with various steps of the production process being undertaken in various localities and/or being subcontracted or out-sourced to smaller partners. This tendency is driven by the desire to minimize production costs, to maximize access to markets and profit, and to respond more effectively to the ever-growing expectations of a global market that comprises a tapestry of wants, tastes, demands and desires. However, there may be exceptions in niche market applications, where the real value added is embedded in the high knowledge-intensive innovations of application-specific products targeting selected end-users with very specific demands.

3. Under these conditions of globalization, and after the many failures of earlier uncoordinated import-substitution industrialization strategies (which were implemented without vision, in particular in small countries), many countries, including some Arab countries, have been reviewing their industrialization approach and have adopted a more outward-oriented industrialization, based on trade and on strategic alliances with TNCs. The hope and expectation are that TNCs, at the insistence of the partner developing country, would provide management skills (in particular for large-scale production facilities), transfer of technology and know-how, quality control, marketing, timely distribution, and, more often than not, foreign direct investment. To face this growing trend towards globalization and the increased role of TNCs, many countries have elected to join large regional economic groupings, where "national interests" are fostered through regional alliance with countries that have related cultures and traditions as well as shared economic interests and geographic proximity.

4. Arab countries have been working for a lengthy period of time towards the formation of AFTA, an Arab common market, and various forms of subregional and bilateral economic agreements and partnerships. Some of these efforts have been successful, in particular investment projects jointly financed and managed by several neighbouring Arab countries. However, efforts to implement a regionwide AFTA have not yet materialized, for various reasons.

Israel may not be very eager to see serious efforts exerted towards the establishment of AFTA—or other forms of Arab subregional free trade agreements—since such agreements may strengthen a unified Arab negotiating stand politically and economically and may put more hurdles in front of the Israeli economy, along with the long-standing Arab boycott. This Israeli opposition to any pan-Arab grouping has persisted, even with progress achieved in the "peace accords", through the insistence on negotiating bilateral economic agreements with each of the neighbouring countries, instead of working with these countries towards the development of a larger regional economic grouping.

5. Many industrialized countries, as well as many TNCs, consider the area as a high-risk region to be avoided for any large-scale, long-term investment, owing to recurrent wars and military confrontations, mutual economic boycotts, and above all the fragmentation of the regional market into mutually exclusive small local markets.

With the "peace and security" hopes of the early 1990s, many industrialized countries and TNCs reviewed their stand on the region, seriously examining the opportunities for participating in the development of the region's promising resources if comprehensive and just peace and security for all parties eventually prevails, leading to some sort of a regional free-trade area. Many entities have begun reinvesting in the region, in particular in Israel, and/or opening facilities and representative offices.

6. Among the instruments currently available to ESCWA member countries to foster international cooperation are the WTO agreements and the proposed Euro partnership agreements. However, the kind of commitments that countries in the region will bind themselves to, under these agreements, will shape the type of regional relations that are expected to develop among Arab countries, or with Israel. Under the proposed Euro partnership agreements, for example, if countries in the region concluded bilateral agreements with the EU, in the absence of regional cooperation arrangements among themselves, it could tremendously harm regional trade relations. A hub-and-spoke model could emerge, with the EU in the centre (the hub) and having separate bilateral trade arrangements with the countries of the region, including Israel (the spokes). The homogeneous set of agreements in a variety of areas, under the WTO and the Euro partnership agreements, could potentially form the framework for regional cooperation arrangements adapted to the reality and specificities of the ESCWA region.

7. The region as a whole has huge resources and potentially a large market with considerable purchasing power, if all trade barriers were abolished. The total population of Egypt, Iraq, Jordan, Lebanon, the Syrian Arab Republic and the West Bank and Gaza Strip is more than 100 million, with a combined GDP of more than $100 billion in 1996; eventually

the strong Israeli economy would be added to this. Considering the strong cultural and economic links with the nearby Gulf and North African countries, the resources of the region may be extended to a total population of more than 250 million and a total GDP of more than $300 billion.

However, it must be pointed out that the eventual formation of such a region would depend not only on a setting of comprehensive and just peace and security, but also on a real commitment from all sides to effective regional economic cooperation. This would mean that Israel would have to stop its insistence on bilateral relations (that is, Israel and each of its Arab neighbours separately). Continued fragmentation of the market—even if mutual boycotting were ended and bilateral relations normalized—would hamper the competitiveness of the region in the eyes of third parties, most of which are themselves engaged in large regional economic groupings, in particular the EU, NAFTA and recently the Asia Pacific Economic Cooperation Forum. If market fragmentation continues, other potential international partners will try to impose their own conditions on a bilateral basis as well, which is already the case with the EU and the cumulative rules of origin in trade.

8. Changes in Arab-Israeli economic relations may not be the most dominant changes brought about by the peace process. Emerging regional and global developments will also bring about changes in the economic relations between the region and the outside world. New forums of cooperation are expected to develop, particularly with NAFTA and the EU, as well as with giant TNCs. A clear dynamic will be established between the reality brought about by the "peace process" and that of global events (for example, the establishment of the WTO and the Euro-Mediterranean Association Agreements), with opportunities for various forms of tripartite partnerships. The emerging partnerships would also lead to increased foreign direct investment in the region.

9. It should be noted that, although trade relations between Israel and its Arab neighbours are still at a very low level, owing mostly to the deadlock in the peace process and to political and emotional sensitivities, various forms of cross-border industrial relations are emerging, slowly but clearly, as was seen in the textiles and garment sector. An increasing number of Israeli firms, usually in strong partnership with TNCs, are setting up industrial work relationships in Egypt and Jordan, and in the area under the Palestinian Authority when security measures allow, to benefit from the much cheaper wages of the unskilled and semi-skilled labour and to dampen the negative effects of the WTO requirements and the opening up of the Israeli market.

These emerging cross-border industry relations, in particular those involving partnerships from outside the region, must be seen as part of the international trend towards the globalization of the manufacturing process, which takes advantage of the new regional and global realities. It should be noted that these industry relations are less conspicuous and thus less sensitive to political hurdles and more flexible in coping with trade liberalization rules.

1. Goods, capital and labour flow in the direction where they can make the best profit and the fastest return, unless faced with non-economic barriers such as political, emotional or procedural hurdles. Economic relations between countries need to be developed over time: they have to be ongoing, a continuous fabric of relationships, woven from the fibres of trade, technology and resources, in order to achieve sustainable and substantive gains for all sides and in order to balance advantages and risks on both sides of the borders, so as to overcome non-economic barriers and political and cultural sensitivities.

2. Relations between companies and countries may include competition and any form of cooperation, including: trade in components, parts and machines; subcontracting and out-sourcing; licensing; joint venture; transfer of technology and know-how; joint production; mergers and acquisitions; and strategic alliances. The type of relations that would be selected and would prevail would be what is mutually profitable. In any one locality, the form of relation prevailing would usually be the one that is optimal to all sides; it would not last otherwise, since the party benefiting less would seek to change the partnership relation or quit it altogether, when better options became available.

3. Sustainable and mutually profitable relations would also depend to a great extent on the level and sophistication of the industrial technologies involved, the capability of the supplying side to provide the needed technology and related skills, the capability of the receiving side to absorb the supplied technologies and skills and services, the comparative advantages of both parties with regard to the technology concerned, and an atmosphere that would provide incentives and encouragement to all parties to engage in the mutually profitable relation built around the particular technology. The same would be true for other skills and services that would be exchanged, including management, marketing and distribution.

4. Industrial technologies vary tremendously in sophistication and complexity, from the traditional, mature technologies (with long product life cycles and with minimum "trade secrets" to be exchanged) to the rapidly changing, knowledge-intensive, innovation-based products and production processes on the cutting edge of technology, with very short life cycles (and involving "trade secrets" acquired at high cost and requiring a high degree of trust and confidence between the partners involved). Industrial technologies cover the entire spectrum between these two extremes. Thus, the type of relations to be developed around a given technology will depend on its level of sophistication and on the tangible advantages and benefits to be expected from the exchange of trade secrets and other benefits.

5. The different comparative advantages that could contribute to enhancing the competitiveness of the factors of production would play an important role in the nature of the relations established. For example, the technology/innovation factor in the production function varies from a few per cent for mature technologies—where the unskilled and semi-skilled labour cost may be the more important factor—reaching more than 90% at the other extreme for the cutting edge of technology, where the unskilled labour cost may be trivial and the skilled human resources cost very high. In the latter case, the skilled human

resources may account for the largest part of the technology factor, in particular where the embedded knowledge represents more than 70% of the value added and is based on expensive R&D. Here it is very important to differentiate between the unskilled labour cost factor and the high-level skilled human resources factor. The former is the traditional labour production factor, while the latter is now being increasingly included in the technology and innovation factor.

A typical mature, labour-intensive industry is the textiles and garment industry. Examples at the other extreme are the industries involved in the innovative applications of information technology, in particular in intelligent communications, data security and encryption, multimedia and networking, where the cost of the highly skilled human resources is the more crucial factor.

6. Sustainable relations would have to be based on the exchange of comparative advantages: needs on one side of the border must be supplied by the other side; advantages provided by one side must be easy to absorb on the other side; and/or advantages on both sides may be easily combined to attract a third party (a TNC) in a tripartite partnership, where the competitive strengths of all sides benefit all sides of the relation.

7. Relations between firms and countries, at the trade and/or at the industrial level, usually develop on the basis of the mutual exchange of economic benefit and the rapid exchange of profit. However, many times the prevailing environment—political conditions, cultural values and behaviour, security problems, stability—may override for a long period of time the apparent profitability factor, as is clearly the case of relations between Arab countries and Israel.

8. A review of the case-studies on textiles and garments and on electronics and related industries reveals that the status of the manufacturing sectors on both sides of the border show many more differences and discrepancies than similarities; this would lead to the conclusion that, as it stands now, the opening of the borders between the Arab States and Israel as a result of further progress in the peace process would not pose an immediate threat to the manufacturing sectors in the Arab countries. If a suitable environment is nurtured through the normalization of political as well as economic relations, there would be many areas of potential exchange of benefits to industries on both sides. These areas would have to be identified so that proper conditions could be developed to enhance the peace process and to enhance the realization of peace dividends to all parties to the peace accords.

D. EMERGING RELATIONS IN TEXTILE AND GARMENT INDUSTRIES

1. The current Israeli transfer of production of textiles and garments to cheap-labour countries (including to its neighbours) is part of the global trend to distribute manufacturing to different localities where better profit is expected. However, it is also the result of a deep crisis that is subjecting Israeli firms to increased competition. The current trend observed in the Israeli transfer of garment production to neighbouring countries can be considered (mainly for large exporting Israeli firms) as a survival measure, in order to avoid losing the accumulated comparative advantages gained earlier in American and European markets.

The crisis is mainly the result of increased international competition brought about by the liberalization of international trade and by the implementation of the related agreements of the WTO, and by the liberalization of the global economy and the increased domination of market forces. Bilateral agreements with the EU and the United States and global events are having an impact at the country level as well, reflected in the economic and trade policies of the Government of Israel. Under these conditions, the Israeli textiles and garment industry is facing increased competition in the export as well as in the local markets, in view of the high cost of labour in Israel as compared with that of competing cheap-labour countries, the increased liberalization of Israeli policies (and thus the reduction of subsidies and incentives), and the new environmental regulations which have imposed greater restrictions on dyeing and printing of fabrics, thus increasing the cost of local production. The signs of the crisis are reflected in the continuous growth of imports since the early 1990s, the significant decline of investment in the sector, and the closure of several factories in Israel.

2. The transfer of Israeli production of textiles and garments to outside the country is taking on increasing importance, in particular since the textiles and garment sector is one of the major industrial branches in Israel, generating in 1995 around $3.4 billion in sales revenues, of which one third (around $1 billion) came from exports, in particular to the United States and the EU.

In order to survive, face the above challenges, and continue to compete in local and international markets, Israeli textiles and garment companies are seeking out countries where production could provide higher profits, and where they could benefit from cheap labour and other advantages of a friendly business environment. The implementation of peace agreements has provided Israeli firms with opportunities to seek subcontracting or joint venture arrangements and to develop industry relations with Egyptian and Jordanian companies, not to mention the Israeli subcontracting deals with Palestinian firms.

3. Labour costs are not the only factor influencing the relocation of Israeli production of textiles and garments; other important factors should also be taken into consideration. These involve trade regulations and policies, political stability and the business environment, the availability of fabric, the quality of product, the fashion sensitivity of the product and delivery times.

4. In order to compete in international markets, Israeli textiles and garment companies have been producing for the upper-end market niches, developing new fabrics and novel products, placing greater emphasis on design, and introducing sophisticated, computer-controlled machinery, as well as modern manufacturing methods and management techniques. In their relations with Arab firms, Israeli companies, benefiting from their accumulated experience, are providing some or all of the following services: (a) marketing and securing export markets; (b) designing garments; and (c) transferring know-how for the production of specialty fabric, utilization of modern machinery, and advanced production process.

5. Since the main export markets of Israel are Europe and North America, Israeli producers wishing to delocalize production to neighbouring countries need to take into consideration the free-trade agreements Israel has signed with the European Union and the United States, as well as the trade regulations that govern the exports of textiles and garments of the host countries or areas—Jordan, Egypt and the area under the Palestinian Authority—to Europe and the United States. These free-trade agreements exempt Israeli exports from customs duties, but each agreement stipulates different conditions for Israeli exports, in particular with regard to cumulative rules of origin. In this regard the rules of origin imposed by both the European Union and the United States on textile and garment articles put limits on Israeli companies willing to operate in neighbouring countries. Israeli companies have been able to use a number of mechanisms in order to overcome the obstacles posed by the rules of origin.

6. Israeli companies are transferring the production of textiles and garments to the occupied territories, Egypt and Jordan through one or more of the following types of arrangements: subcontracting (from only part of the fabrication process to sourcing the whole of the process); joint ventures; and relocation (establishment of a factory with 100% Israeli ownership). In the occupied territories, subcontracting arrangements have been the only means used so far for delocalizing Israeli production. In Jordan, delocalization is carried out through subcontracting and joint ventures. In Egypt all of the above-mentioned arrangements have been used to varying degrees.

7. TNCs, as partners of large Israeli companies, are encouraging the latter to establish joint ventures in neighbouring countries. For these TNCs, the establishment of joint ventures would contribute to building regional work relationships, would allow them to benefit from the opening of new markets; in addition, joint ventures would perhaps be less vulnerable to political instabilities, compared with trade or other forms of industry relations.

8. Israeli out-sourcing of garment production to suppliers in Egypt has been the dominant form of relation there; it is expected that it will continue to expand in the future as well, mainly because of the availability in Egypt of a more appropriate textiles production infrastructure than elsewhere. Other forms have proved to be not as mutually profitable. Furthermore, in view of the higher political sensitivity in Egypt, sourcing appears to provide more independence to the Egyptian manufacturer than subcontracting or joint venture.

9. It is postulated that the phasing out of the Israeli production of textiles and garments and the partial transfer of production to neighbouring countries may result in the following: (1) the orientation of investment in Jordan may favour the establishment of more joint ventures with Israeli firms; (2) increased possibilities will be available in the future for Egyptian and Jordanian companies to operate directly with foreign firms, possibly without Israeli intermediation. In the long term, the Arab firms would be better known by foreign companies, which may find it more profitable to work directly with Arab firms; (3) Palestinian companies facing difficulties in operating under subcontracting arrangements with Israeli firms, in view of the harsh security measures and the recurrent border closures, would have opportunities for subcontracting or setting up joint ventures in the new industrial zones being established in the border area between Israel and the areas under the Palestinian Authority.

10. It is also postulated that the Arab garment sector in particular will benefit more in cooperating directly with foreign firms. Arab firms may take advantage of the Euro-Mediterranean Association Agreements to build alliances (subcontracting, joint ventures) with European garment companies, in particular since Arab garments would have free access into countries of the European Union (provided the rules of origin are respected). Several garment companies in Egypt, Jordan and the Syrian Arab Republic have achieved impressive export performance through operations undertaken with European firms. In this respect, it should be noted that the Syrian Arab Republic has great export potential, in view of the availability of raw cotton, the good infrastructure in the textiles industry, and the existence of a skilled, experienced and relatively cheap labour force.

11. The results of the findings on the textiles and garment industry cannot necessarily be extrapolated directly to other labour-intensive industries, though many emerging trends in cross-border industry relations may be repeated in other branches, if a suitable environment is in place. It is thus recommended that in-depth studies be conducted on other labour-intensive industries, in order to examine the extent to which the conditions obtaining for the emerging relations in the textiles and garment industry could be extrapolated to other industrial branches, or whether different relations will be developed. These studies would have to consider how to better prepare Arab industrial firms for the coming cross-border relations.

E. EMERGING RELATIONS IN ELECTRONICS AND SOFTWARE INDUSTRIES

1. Consumption of electronic products in the Arab countries is high, but production facilities are limited, meeting only a small portion of demand. Most production facilities are involved in assembling consumer electronics under special arrangements with foreign suppliers; no serious technology transfer takes place, and there is likewise little local value added. Most of these facilities target their local markets and have no export experience, tendency or capacity.

In spite of the huge volume of regional consumption, there are as yet no regional or national plans to develop and/or support a sustainable Arab electronics industry that could compete in international markets. The local markets are very small, and there are no serious plans to coordinate a regional market.

2. The region has a large pool of human resources in areas related to electronics technologies and industries. Semi-skilled industrial labour is relatively expensive compared with cheap-labour countries and has only limited experience in the assembly of consumer electronics. The large pool of graduates of universities and technical institutes has gained a good education but lacks practical, hands-on experience. Most scientists and researchers working in electronics-related fields are employed by academic and research-oriented institutions and do not have the opportunity to gain any real experience in product design and development or in the commercialization of research results. However, the satisfactory qualifications and the low wages of these scientists and researchers may attract TNCs to set up design and R&D facilities in Arab countries in the region, as is happening now in Israel.

3. The region may offer good opportunities for joint business ventures for foreign investors and TNCs, if reasonable measures are taken to facilitate trade among all countries of the region. The promising areas for new investment in electronics-related industries include industrial instrumentation and controls, specialized embedded software, optical fibre cables and medical electronics. Large-scale consumer electronics and communication equipment may also represent opportunities for TNC involvement, if many countries in the region participate in setting up production facilities or in carrying out the production steps, and are willing to open their markets to the products of such ventures.

4. Israel's electronics industry is highly subsidized and is sustained by a "national vision" formulated and implemented by the Government and the military.

5. The current growth of the Israeli electronics industry is based on the proliferation of small start-up companies exploiting niche market products which are military spin-offs or which are converted cheaply from military research. These companies' comparative advantages are as follows:

(a) The (to date) cheap pool of highly qualified scientists, engineers and technicians;

(b) Financial and managerial support from the Government to high-tech companies starting up;

(c) A plethora of bilateral agreements providing cheap and easy access to markets in industrialized countries;

(d) The availability of floating venture capital, encouraged by the high degree of credibility of Israel's electronics industry;

(e) The various forms of strategic alliances with foreign partners who can provide marketing, distribution and after-sale services.

6. One important weakness of Israel's electronics industry is the lack of consumer-electronics mass manufacturing, as the factors of production are extremely non-competitive:

(a) The unskilled labour needed for mass production is expensive;

(b) There is a lack of giant companies and a lack of the managerial skills and capabilities to manage the investment and finance that would allow established companies to grow;

(c) The local market is small and at some distance from major export markets.

7. Since the signing of the peace accord between Egypt and Israel in the early 1980s, and during the short duration since the signing of the peace accords between the Palestinians and

Israel and between Jordan and Israel, little activity has been recorded between the Arab side and Israel in electronics and related areas. Among the more commonly known initiatives in this field is the TRIDE partnership programme between Israel, Jordan and the United States. Similar programmes are still being negotiated between the United States, Israel, Egypt and the Palestinians.

8. Even if a comprehensive and just peace prevails, the current status of electronics firms in the region on both sides of the border will not provide any serious opportunity for industry relations on a regional basis in the short term. Future relations would first require drastic changes in structure and in production strategies, on both sides of the border. If the needed restructuring steps were taken in Arab and Israeli electronics firms, then a large number of joint business opportunities may be identified, in such areas as consumer electronics, telecommunications equipment, instrumentation and control systems, and, above all, specialized software development and application-specific products, targeting export market niches. Most of these business opportunities would best be exploited in partnership with giant TNCs, who may be willing to provide know-how, skills to manage large-scale production, and marketing and distribution in export markets.

9. Currently there is an urgent need in the Israeli market for software expertise from neighbouring countries and from other cheap-expertise countries. However, only limited subcontracting arrangements and the recruitment of a small number of experts (from Egypt, Jordan and the occupied territories) to work with Israeli companies has been observed to date. There are serious technical and non-technical factors slowing down possible regional cooperation in this field.

F. CONCLUDING REMARKS

1. It should be noted that the "peace process" is a process that may need to go on for an extended period of time, in particular owing to the current political hurdles and the delays in implementing the agreed-upon commitments. To this effect the following comments can be made:

(a) There is a dynamic interplay among the political and economic factors affecting the progress in the peace process and in the implementation of the peace accords. Thus, the economic factors and incentives relevant to each of the parties concerned, including Israel, must be studied thoroughly, identified, highlighted, enhanced, and broadly publicized—on both sides of the border—to increase public awareness about peace dividends and about the potential beneficiaries of these dividends, as well as to encourage and support the segments of the population working for peace, in particular on the Israeli side, and to discourage and weaken those working against peace;

(b) Although the transition period is full of uncertainties and of political barriers and sensitivities, a just and equitable peace for all, when established, will bring about more stable conditions to the region as a whole and will certainly lead to tangible peace dividends, in particular the diversion of at least part of the huge resources allocated to military and security measures, and the increased attractiveness of partnership and foreign direct

investment of giant economic players interested in harnessing the enormous latent resources of the region;

(c) With the slow progress in the peace process, and the uncertainties brought about by the style and the degree of implementation of the signed accords, it is not very clear as yet what form the final settlement will take and what type of regional relations will be established. In fact, many "shades" of peace may be established between various Arab countries and Israel, each entailing a different form of regional cooperation—from the forced quasi-entanglement of the Palestinian economy with Israel to the very cold economic relation, if any, expected with a country such as the Libyan Arab Jamahiriya. It is therefore recommended to carry out a more in-depth study about the various forecasted shades of peace in the final settlement and the spectrum of regional relations that these will entail.

2. The impact of the peace process on the Palestinian economy must be studied separately and in depth, whether during the transition period, or after the final settlement, for it differs drastically from the impact on other Arab countries. The Palestinian economy is going through a painful disengagement from the total domination of the Israeli economy, into a stage of more normalized relations with the latter and into a stage where it will be possible to reopen sound relations with other countries, in particular with the neighbouring Arab countries.

The implementation of the Protocol on Economic Relations, signed in Paris in April 1994, is reorienting the Palestinians away from their traditional trading partners and blocking the chances for wider Palestinian-Arab cooperation efforts. The Protocol on Economic Relations does not allow the Palestinians to manage their economic affairs as they choose or to protect their economy in the manner they see best serves their interests. The Palestinians' economy is subsumed under the Israeli import and tax regimes, with very few exceptions. Quotas are imposed on the entry into Israel of a number of Palestinian agricultural products. Israel still has exclusive control and management of water, and controls most of the West Bank and Gaza Strip.

Furthermore, the introduction by Israel of a relatively permanent border closure on all residents of the West Bank and Gaza Strip has increased uncertainties, raised the cost of production and reduced sales. At the moment, the border closure policy is the largest deterrent to investment in the industrial sector in the occupied territories.

3. It should be noted that the peace process is being undertaken at the same time that major global economic changes are taking place, in particular: the implementation of WTO accords; the emergence and strengthening of giant regional economic blocs, one aspect of which is the various Euro-Mediterranean Association Agreements with their opportunities—and threats—for the region; and the fast-paced and profound innovations in science and technology and their rapid application in the various economic sectors, including the industrial sector. It is necessary to study the interplay of all these factors with the peace process. More specifically, these global developments, in particular innovations in information technology and in communications, open up a broad spectrum of alternatives besides those engendered by the peace process. It is therefore recommended to undertake in-

depth studies of the interplay of all the above-mentioned regional and global developments and their impact on the economies of the region, to identify the opportunities and alternatives brought about by this interplay.

4. Like other regional and global developments, the peace process entails many threats as well as opportunities. The threats will become more apparent to all Arab economies if economic fragmentation is to continue, and if each Arab country is to deal separately with the stronger economic entities around them, whether it is Israel, the European Union or any other economic bloc. On the other hand, the opportunities will predominate if proper action is undertaken. It is recommended to carry out further in-depth studies on the tangible advantages to be gained by each Arab country and by the region as a whole with the establishment of a pan-Arab free trade area (AFTA) or an Arab common market, in particular in the light of regional and global events. These studies would also have to identify the concrete steps to be undertaken to facilitate the establishment of AFTA and to overcome any potential political difficulties from within each country, from Israel, or from other international players such as the European Union who might feel threatened by the establishment of AFTA.

5. The threats that might arise from the peace process or from other global developments owing to the strength of potential partners and competitors will only materialize if Arab economic weaknesses endure and if no serious action is undertaken to prepare for these coming threats. Besides the above-mentioned economic fragmentation of the region, other weaknesses that were noted include: the region's archaic economic structure; the heavy dependence on a few sources of income, mostly oil revenues; the obsolete manufacturing sector; the lack of a coherent vision about the role of the State; and the extremely rigid and outdated educational system.

It is recommended to carry out detailed studies on the weaknesses of Arab economies and on the alternative courses of action that could be taken to lead these economies into the economy of the twenty-first century. It is important that a pan-Arab economic vision, as well as a national vision in each Arab country, be formulated to face up to challenges posed by: the declared Israeli vision, in particular with regard to advanced technologies and more so in electronics and software industries; and the declared "European vision", including the role Arab countries are to play in the proposed partnership between Europe and the Mediterranean, which is the "backyard" of and a market for European industry.

6. The stipulated vision would have to elaborate clearly the new role anticipated for the State in macroeconomic planning and in formulating and implementing incentive schemes away from direct involvement in the production sector and in micro-economic activities. The proposed role of the State may be summarized as follows:

(a) Analyse the weaknesses and points of strength of the economies of the region, in particular of the manufacturing sector, identifying successful economic sectors that could be the prime movers of Arab economies into the twenty-first century;

(b) Work out concrete plans for restructuring economies and for preparing for the economy of the twenty-first century;

(c) Provide the needed support, incentives and institutions for:

R&D and industrial research
Modernization efforts
Small and medium-sized enterprises
Promising start-up enterprises

(d) Provide guidance to the various sectors of the society, to assist in the transition towards the new economy, in particular by preparing the education sector to cope with global changes and to prepare the needed human resources for the tasks of the new economy.

7. It can be stated that in Israeli society there are sound and tangible arguments, including economic arguments, against peace. Many Israelis feel that their economic future is with Europe and with industrialized Western societies rather than with the lesser developed neighbouring Arab countries. In fact many Israelis feel that peace may lead to lower standards of living in Israel and may mire the more advanced but small Israeli society in the weaknesses of the much larger but less developed Arab societies. The real challenge for Arab researchers is to identify clearly the tangible dividends of peace to all sides, including Israel, through regional cooperation and through improved relations with the large economic players in the world. The challenge, in other words, is to build the case for peace, against all odds, and to show that Israelis, as well as Arabs, would really gain from a just and equitable peace.

To this effect, the "peace dividends" gained in the 1990s, in particular in Israel after the signing of the Oslo accords, may be noted. Among these were: the steady growth of per capita income; the increased flow of foreign direct investment; the renewed interest of TNCs and other giant economic players in the region and the steady increase in their investment along with their establishment of new R&D centres and production facilities; and above all, the opening of huge new markets—China, India and several Muslim and Arab countries—in particular with the intentional reduction of Arab boycott. It should be pointed out that all these gains witnessed clear reverses in the mid-1990s, considering the current political hurdles and the deadlock facing the peace process.

Finally, it should be noted that among the more relevant peace dividends would be more stable conditions in which to carry out the internal economic reforms needed on both sides of the border as well as any further planned internal political reforms. One important internal reform expected to take place when total peace prevails is the transformation of Israel's quasi-war economy into an economy of peace; many businessmen, Arab and non-Arab, find it burdensome to deal with Israel's mobilized war economy.

8. The two case-studies, on textiles and garments (a labour-intensive industry) and electronics and related industries (an advanced, knowledge-intensive industry), have identified trends and analysed the impact that can be expected on similar industries, as

progress is achieved in the peace process. However, to gain more insight into other sectors, in-depth, specialized studies must be undertaken in other industrial branches and in other economic sectors, according to a priority list. Among the higher priority sectors, the following can be identified:

(a) Branches of the industry and sectors of the economy that are of particular relevance to the Palestinian economy;

(b) The services sectors, such as transport and tourism, which are important in regional cooperation.

Studies on these sectors should give full consideration to the impact that the commitments of the countries of the region under the WTO accords in the areas of trade in goods and services would have on regional cooperation.