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NORTH AFRICAN INDUSTRIAL HARMONIZATION STUDY.

Contents

This study was prepared by a consultant for ECA and the views expressed are those of the author and do not necessarily reflect those of ECA.

M72-803

1 Present Situation

1.1 Introduction

This report attempts to project the future economic development of the six countries in the North-African sub-region, in particular the development of their manufacturing industries. The description of the present economic situation in the North-African countries given in this chapter serves therefore several purposes; it provides for a general introduction to the economy of the countries (and of the sub-region as a whole) to which the projections will be applied, it is part of the statistical basis on which the projections are based, and, more specifically, this chapter throws some light on the industrialization problems in the various countries of the sub-region.

In describing the present economic situation, the present is usually defined as the period between 1965 and 1968. Statistical information for 1969 or 1970 is hardly available, so usually 1968, and sometimes 1967, was chosen as the reference year. Moreover, for the purpose of comparison, data for the time period 1960-1965 as well as data on Africa as a whole have occasionally been used.

The actual description of the present situation covers the following aspects: population (section 1.2), macro-economic data, such as gross domestic product (section 1.3), its industrial origin by broad economic sectors (section 1.4) and the confrontation of resources (GDP and imports) and uses (all categories of demand) in section 1.5. Some characteristics of the manufacturing industry are described in section 1.6. Chapter 1 concludes with some data on foreign trade (section 1.7).

1.2 Population

1.2.1 Total population

The countries of the North-African sub-region show a rapid growth of population during the sixties.[M] In 1960 total population in the sub-region amounted to 66 million inhabitants. In 1965 population amounted to almost 75 million inhabitants, while in 1970 more than 85 million inhabitants were forecast. The annual rate of

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[M] Data and estimate in section 1.2 have been derived from "Notes on the demographic situation in Africa", U.N. Economic Commission for Africa, E/CN.14/POP/6; 17 April 1969.

growth of population is increasing from 2.5 per cent between 1960 and 1965 to an expected 2.7 per cent between 1965 and 1970. This annual rate of growth of population is estimated to accelerate even more during the seventies: 2.9 and 3.1 per cent annually during 1970-1975 and 1975-1980, respectively. For Africa as a whole population growth is expected to increase from 2.3 per cent during 1960-1965 to 2.4 per cent during 1965 - 1970 and estimated to reach 2.7 per cent during 1975-1980. The widening difference in population growth between North-Africa and the rest of Africa observed during the sixties will thus remain in the near future if no additional measures of population control are taken in the sub-region.

The relevant data for the countries of the North-African sub-region as well as for Africa as a whole can be found in the following table. Population growth in Morocco is remarkably high.

Table 1.2.1

Size and rates of growth of population for countries of the North-African sub-region and for Africa, 1960-1970

Country	Size in millions of persons				Annual rates of growth in percentages	
	1960	1965	1968	1970	1960-1965	1965-1970
Morocco	11.3	13.3	14.6	15.6	3.2	3.3
Algeria	10.8	11.9	12.8	13.6	2.0	2.6
Tunisia	3.9	4.4	4.7	4.9	2.1	2.2
Libya	1.5	1.7	1.8	1.9	2.1	2.2
U.A.R.	25.9	29.4	31.9	33.6	2.5	2.7
Sudan	12.3	13.7	14.7	15.4	2.2	2.4
North Africa	65.7	74.6	80.7	85.1	2.5	2.7
Africa	278.9	311.9	334.8	351.2	2.3	2.4

1.2.2 Urban population

In 1965 the urban population in North Africa amounted to 27.4 per cent of the total population. On the basis of past trends it is estimated that this share will increase to more than 30 per cent in 1970, implying an average annual rate of growth during 1965-1970 of 4.7 per cent. For Africa as a whole these shares are only 15.4 and 17.2 per cent, respectively.

Table 1.2.2 summarizes the relevant data for the countries of the sub-region as well as for Africa as a whole. Within the sub-region the United Arab Republic is by far the most urbanized country, whereas in the Sudan more than 90 per cent of the population still live in rural areas.

Table 1.2.2

Share and rates of growth of urban population for countries of the North-African sub-region and for Africa, 1965-1970.

Country	Share of urban in total population in percentages		Annual rates of growth in percentages
	1965	1970	1965-1970
Morocco	27.0	30.3	5.7
Algeria	25.3	30.7	6.8
Tunisia	22.8	25.7	4.8
Libya	20.7	23.7	5.0
U.A.R.	38.6	41.1	4.0
Sudan	7.1	7.5	4.2
North Africa	27.4	30.2	4.7
Africa	15.4	17.2	4.7

1.3 Gross domestic product

1.3.1 Size of gross domestic product

The following table gives information on the size of GDP in 1968 and its development over time for the individual countries of the North-African sub-region and for Developing Africa (Africa excl. the Republic of South Africa).

Table 1.3.1

Gross domestic product in 1968 (in millions of U.S. dollars) and average annual rates of growth of GDP during 1960-1965 and 1965-1968 (at constant 1960 market prices in percentages) for countries of the North-African sub-region and Developing Africa.

Country	Size of GDP in millions of dollars		Average annual rates of growth in percentages	
	1968 in market prices of 1960	1968 in market prices of 1960	1960-1965	1965-1968
Morocco	2,530	3,020	3.7	5.8
Algeria	2,860	3,330	-.5	5.0
Tunisia	1,020	1,360	5.4	3.0
Libya	2,170	3,300	28.0	19.6
U.A.R.	5,860	7,040	7.2	-.8
Sudan	1,170	1,670	5.8	2.5
North Africa	15,960	19,720	5.7	4.1
Developing Africa	38,180	47,960	4.6	3.3

Source: A Survey of Economic Conditions in Africa, 1969.

Although the North-African sub-region takes up a considerable part of total GDP in Developing Africa -- more than one third -- it should not be forgotten that the absolute level of output in North Africa remains very low. The 1968 figure for GDP, amounting to some

20 milliards of dollars, is below the GDP in a European country of medium size in terms of population, such as the Netherlands, which had a GDP amounting to more than 25 milliards of dollars in the same year. The annual rate of growth of GDP in the sub-region has been lower during 1965-1968 than in the preceding five-year period. Nevertheless, due to the extremely rapid expansion of the Libyan economy, it is still higher than for the whole of Developing Africa.

The performance of individual countries has been rather different, and was, in particular during 1965-1968, influenced by short-term fluctuations like a good harvest in 1968 against harvest failures in 1966 and 1967, a severe decline in output in the United Arab Republic during 1967 as a result of war circumstances, and a rapid increase in the oil production in Libya in 1968. The Algerian economy recovered from the serious disruptions during the early sixties.

1.3.2 Per capita gross domestic product

For the sub-region as a whole per capita GDP is substantially higher than in Developing Africa (245 dollars against 152 dollars in 1968). Within the sub-region Libya takes a special position with a per capita GDP approaching the income levels of developed European economies. Sudan has the lowest per capita income of the sub-region, with a per capita GDP which is even lower than the average of Developing Africa. The relevant data can be found in the table below.

Table 1.3.2

Per capita gross domestic product in countries of the North-African sub-region and in Developing Africa, 1965 and 1968 in U.S. dollars at constant 1960 market prices, 1968 at current market prices.

Country	1965 constant	1968 constant	1968 current
Morocco	161	173	207
Algeria	211	223	263
Tunisia	236	241	293
Libya	728	1,223	1,809
U.A.R.	206	184	221
Sudan	104	104	114
North Africa	193	200	245
Developing Africa	118	121	152

Source: A Survey of Economic Conditions in Africa, 1969

1.4 Gross domestic product by industrial origin

Before presenting the industrial origin of GDP in the individual countries of the North-African sub-region in a specific year, the development over time of the sectoral distribution of GDP for the sub-region as a whole will be briefly discussed. Table 1.4.1 summarizes the sectoral development in North Africa and Developing Africa during 1960-1968.

Table 1.4.1

Industrial origin of gross domestic product at current factor cost in North Africa and in Developing Africa, 1960, 1965, 1968; in percentages of GDP

Region	Year	Agri-culture	Mining	Manu-facturing	Construc-tion	Services
North Africa	1960	31.2	4.6	12.7	5.9	45.6
	1965	27.2	11.5	13.9	5.3	42.1
	1968	23.9	16.9	13.2	5.5	40.5
Developing Africa	1960	41.0	4.7	9.7	4.9	39.7
	1965	36.0	8.2	11.2	4.7	39.9
	1968	33.3	10.3	11.7	4.8	39.9

Source: A Survey of Economic Conditions in Africa, 1969.

Throughout the sixties, mining, manufacturing and construction each take up a higher share in GDP in North Africa than in the whole of Developing Africa. The share of agriculture is continuously lower, whereas the share of services approaches the - remarkably stable - level for Developing Africa at the end of the sixties. During 1960-1968, the mining sector increases its share in a spectacular way, causing, among others, a decrease in the share of almost all other sectors. In this connexion the slight increase in the share of manufacturing is not unsatisfactory.

The next table gives the industrial origin of GDP in the six countries of the sub-region for the most recent year included in the preceding table, (Table 1.4.2 on page 1-7).

Among the countries of the sub-region considerable structural differences exist. Most striking are (1) the very high share in the Sudan and the fairly high share in Morocco for agriculture, (2) high shares for mining for the two well-known oil countries, Algeria and Libya, (3) in manufacturing relatively high shares in Tunisia and the United Arab Republic and a relatively low share in Algeria.

Table 1.4.2

Industrial origin of gross domestic product at current factor cost in the countries of the North-African sub-region and in Developing Africa, 1968; in percentages of GDP

Country	Agri-culture	Mining	Manu-facturing	Construc-tion	Services
Morocco	33.7	4.7	14.5	4.7	42.4
Algeria	17.0	20.3	10.7	6.5	45.4
Tunisia	17.1	2.5	20.2	7.7	52.5
Libya	2.4	59.0	1.9	8.5	28.2
U.A.R.	27.6	3.5	21.5	3.5	43.9
Sudan	54.5	.1	6.8	4.6	34.0
North Africa	23.9	16.9	13.2	5.5	40.5
Developing Africa	33.3	10.3	11.7	4.8	39.9

Source: A Survey of Economic Conditions in Africa, 1969.

1.5 Expenditure on gross domestic product

First the development over time of resources (GDP and imports) and uses (gross capital formation, private and public consumption, exports) for the sub-region as a whole will be presented. Next, data on resources and uses available for the most recent year in the individual countries of the North-African sub-region will be analyzed.

Table 1.5.1

Resources and uses at current market prices in North Africa and Developing Africa, 1960, 1965, 1968; in percentages of GDP

Region	Year	Gross capital formation	Private consumption	Public consumption	Export.	Import.
North Africa	1960	20.2	71.9	15.0	22.6	29.7
	1965	17.8	65.3	17.5	23.3	23.9
	1968	17.5	61.4	17.0	25.6	21.5
Developing Africa	1960	16.7	73.5	13.1	25.2	28.5
	1965	16.1	69.8	14.8	24.3	25.0
	1968	16.0	67.5	15.2	25.1	23.5

Source: A Survey of Economic Conditions in Africa,1969 (forthcoming).

Table 1.5.1 shows that during the period 1960-1968 the share of imports in North Africa decreases strongly. The share of exports, however, increases, rather slowly till 1965, but afterwards more pronounced due to the exploitation of new oil wells. As a result the deficit on the balance of trade, amounting to 7.1 per cent of GDP in 1960, turns into a surplus which reaches a level of 4.1 per cent of GDP in 1968. Shares of gross capital formation and public consumption are more or less stable during 1965-1968, implying that both shares remain well above the average for Developing Africa.

Table 1.5.2 gives information on resources and uses in 1968 for the individual countries of the sub-region. For Libya it should be kept in mind that all exports consist of crude oil.

Table 1.5.2

Resources and uses at current market prices in the countries of the North African sub-region and in Developing Africa, 1968; in percentages of GDP

Country	Gross capital formation	Private consumption	Public consumption	Exports	Imports
Morocco	16.9	70.9	13.9	20.0	21.7
Algeria	20.3	61.4	20.5	24.4	26.6
Tunisia	21.0	65.0	19.4	22.0	27.4
Libya	23.4	31.1	14.4	59.6	28.5
U.A.R.	14.2	67.8	18.5	13.5	14.0
Sudan	10.4	78.0	14.0	16.5	18.9
North Africa	17.5	61.4	17.0	25.6	21.5
Developing Africa	16.0	67.5	15.2	25.1	23.5

Source: A survey of Economic Condition in Africa,1969 .

1.6 Manufacturing industry

1.6.1 Value added

In discussing table 1.4.1 attention was drawn to the relatively large contribution of the manufacturing industry to GDP in North Africa when compared with Developing Africa - including North Africa - as a whole (13.5 per cent against 11.5 per cent of GDP during 1965-1968). The North-African sub-region is clearly one of the more industrialized sub-regions within developing Africa. Taking into account the size of its population - one fourth of Developing Africa - and its income level per head - almost twice as high as in the rest of Developing Africa - it can be expected that in the North-African sub-region a considerable part of Developing Africa's manufacturing activities takes place. Exact figures on the relative importance of the manufacturing sector in relation to Developing Africa for the sub-region as a whole as well as

for each of the six countries in the sub-region are given in table 1.6.1. This table shows that North Africa accounts for more than 48 per cent of total value added of the manufacturing industry in Developing Africa. Within the sub-region the United Arab Republic contributes as much as the other five countries together.

Table 1.6.1

Value added in manufacturing industry for sub-regions and countries of the North-African sub-region, 1968, in percentages.

Country or sub-region	Value added as a percentage of North Africa	Value added as a percentage of Developing Africa
Morocco	18.6	9.0
Algeria	14.6	7.1
Tunisia	8.8	4.3
Libya	2.7	1.3
U.A.R.	50.5	24.4
Sudan	4.8	2.3
North Africa	100.0	48.4
West Africa		15.0
Central Africa		11.4
East Africa		17.9
Other Africa		5.5
Developing Africa		100.0

Source: A Survey of Economic Conditions in Africa, 1969.

1.6.2 Capacity

It is a well-known experience from the industrialization policies in the developing countries that the limited national markets of most countries may prohibit for quite some time the full utilization of the productive capacity of the new industries. This situation is also characteristic for North Africa as can be illustrated by some fragmentary information for the Maghreb countries for a few industrial products in 1964

Table 1.6.2

Capacity (in tons) and rate of utilization (in percentages) of selected manufactured products in the Maghred countries, 1964.

ISIC	Products	Morocco		Algeria		Tunisia	
		Capacity	Rate	Capacity	Rate	Capacity	Rate
35	Taps	110	63	300	21	--	
	Household wares, plated & galvanized	2,000	50	200	75	430	75
	Item, chromium plated	1,500	56	--		--	
	Item, aluminium	1,000	29	650	50	--	
	Item, metal plates	1,200	72	2,000	34	1,000	8
33	Cement	1,150,000	70	990,000	79	720,000	55
	Cement products	35,000	60	185,000	26	107,000	52
	Cement tiles[M]	.		1,200,000	42	1,345,000	26
	Red bricks	100,000	85	734,910	51	167,000	55
32	Petroleum refineries	1,510,000	70	2,700,000	60	1,000,000	67
27	Pulp products	35,000	100	20,000	70	28,000	52
31	Hydro Chlorides	5,000	79	2,550	55	..	
	Chlorine	4,000	86	4,000	49	1,500	48
	Sodium	4,500	82	5,000	49	3,000	45
	Superphosphates, 16%	--		130,000	74	--	
	Composed fertilizers	130,000	77	270,000	44	150,000	52
	Phosphatic fertilizers	130,000	34	--		460,000	38
	Organic fertilizers	--		18,000	28	--	
	Explosives	4,900	52	24,300	24	4,500	48
	Plastics	15,400	59	7,100	48	3,200	69
30	Rubber	4,000	60	1,400	50	--	

M capacity measured in m^2

Source: Report of the Industrial Mission, United Nations Sub-regional Office, Tangiers.

For the Maghreb countries together it turns out that the degree of capacity utilization for the various industries producing products mentioned in table 1.6.2 varies, on the average, between 40 and 70 per cent. This gives clear evidence of the difficulties which an industrialization policy in these countries of the sub-region has to overcome.

1.7 Foreign trade

1.7.1 Commodity exports and imports

A short survey of the development of total exports and imports of commodities for the countries of the North-African sub-region is given in table 1.7.1.

Table 1.7.1

Exports f.o.b. and imports c.i.f. of commodities for countries of the North-African sub-region and for Developing Africa, in millions of U.S. dollars, 1965 and 1968; annual rates of growth in percentages 1965-1968

Country	Exports f.o.b.			Imports c.i.f.		
	Value 1965	Value 1968	Annual rate of growth	Value 1965	Value 1968	Annual rate of growth
Morocco	430	450	1.6	445	551	7.4
Algeria	637	759	6.0	671	788	5.4
Tunisia	120	158	9.7	245	217	-4.1
Libya	797	1,876	33.0	320	645	26.4
U.A.R.	604	621	1.0	933	692	-9.6
Sudan	196	223	4.5	208	258	7.4
North Africa	2,784	4,087	13.7	2,822	3,151	3.7
Developing Africa	7,650	9,720	8.3	7,940	8,740	3.2

Source: A Survey of Economic Conditions in Africa 1969.

The annual rate of growth of exports is rather high for algeria, Tunisia and in particular for Libya due to the oil exports. As for imports Tunisia and the United Arab Republic show decreases between 1965 and 1968 which were caused by the deterioration of the balance of trade during the early sixties.

1.7.2 Composition of exports and imports

The next tables present the composition of exports and imports by commodity groups for each of the six countries in the sub-region for the year 1967.

Table 1.7.2.1

Imports c.i.f. by commodity groups for countries of the North-African sub-region, 1967, in percentages of total commodity imports.

SITC	Commodity group	Morocco	Algeria	Tunisia	Libya	U.A.R.	Sudan
0	Food and live animals	26.6	25.6	21.3	15.4	33.8	21.6
1	Beverages and tobacco	1.0	.5	.7	1.1	2.2	1.3
2	Crude materials except fuels	8.1	4.9	8.0	2.4	8.6	2.4
3	Mineral fuels, lubricants	4.9	1.6	4.1	3.4	7.1	4.0
4	Animal and vegetable oils and fats	3.1	1.9	5.2	1.7	5.4	.3
5	Chemicals	8.4	9.6	7.9	4.5	8.6	11.2
6	Manufactured goods	20.1	25.0	24.6	24.1	12.7	29.0
7	Machinery and transport equipment	24.9	24.1	23.9	35.7	20.1	22.7
8/9	Miscellaneous manufactured articles	2.9	6.8	4.3	11.7	1.5	7.5
0-9	Total commodity imports	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.N. Yearbook of International Trade Statistics, 1967.

In most countries about three quarters of total commodity imports consist of food products, manufactured goods (as defined in the SITC classification) and machinery and transport equipment.

Table 1.7.2.2

Exports f.o.b. by main commodity groups, Morocco, 1967, in percentages of total commodity exports

SITC	Commodity group	Share of total exports
03	Fish, fresh and preserved	6.0
05	Fruit, fresh and preserved	19.6
	Vegetables, fresh and preserved	17.4
271.3	Natural phosphates	25.9
28	Metal ores and scrap	8.9
	Other products	22.2
0-9	Total commodity exports	100.0

Table 1.7.2.3

Exports f.o.b. by main commodity groups, Algeria, 1967, in percentages of total commodity exports

SITC	Commodity Group	Share in total exports
05	Fruit and vegetables, fresh and preserved	5.2
112	Alcoholic beverages	8.0
33	Crude petroleum and petroleum products	72.9
341.1	Liquefied natural gas	3.9
	Other products	10.0
0-9	Total commodity exports	100.0

Table 1.7.2.4

Exports f.ob. by main commodity groups, Tunisia, 1967, in percentages of total commodity exports

SITC	Commodity group	Share in total exports
05	Fruit and vegetables, fresh and preserved	11.2
112.1	Wine	6.8
271.3	Natural phosphates	16.0
28	Metal ores and scrap	4.5
33	Crude petroleum and petroleum products	14.8
421.5	Olive oil	10.2 N
561.2	Phosphatic fertilizers	14.2
	Other products	22.3
0-9	Total commodity exports	100.0

N exceptionally low, value for recent years preceding 1967 by about 17 per cent.

Table 1.7.2.5

Exports f.o.b. by main commodity groups, United Arab Republic, 1967, in percentages of total commodity exports

SITC	Commodity group	Share in total exports
042.2	Rice, glazed or polished	12.5
05	Fruit and vegetables, fresh and preserved	5.8
263	Cotton	50.8
65	Textile yarn, fabrics, etc.	18.4
	Other products	12.5
0-9	Total commodity exports	100.0

Table 1.7.2.6

Exports f.o.b. by main commodity groups, Sudan, 1967, in percentages of total commodity exports

SITC	Commodity group	Share in total exports
081.3	Oil seed cake and meal	5.6
221	Oil seeds, oil nuts and oil kernels	20.0
263	Cotton	55.3
292	Gum Arabic	11.4
	Other products	7.7
0-9	Total commodity exports	100.0

Source Tables 1.7.2.2-6: U.N. Yearbook of International Trade Statistics, 1967.

No table for Libya has been included as the share of crude oil in total exports amounts to 99.8 per cent in 1967.

Tables 1.7.2.2-6 show that the composition of commodity exports is dominated by agricultural and mining products. Industrial products appearing in the tables are mainly based on the availability of specific natural resources (wine, olive oil, phosphatic fertilizers, textile yarns). As the foreign trade statistics follow the Standard International Trade

Classification the exact share of industrial products cannot be derived directly from the tables. After conversion of the export data from the SITC into the International Standard Industrial Classification the share of industrial exports in total exports (including invisibles) appears to amount to about 20 per cent for Morocco and Algeria, 50 per cent for Tunisia, 15 per cent for the United Arab Republic and less than 1 per cent for Libya and the Sudan.

1.7.3 Intra-sub-regional trade

Again information is only available for the four Maghreb countries Morocco, Algeria, Tunisia and Libya. Table 1.7.3 presents exports, imports and intra-trade by commodity groups of the four Maghreb countries together.

Table 1.7.3

Intra-trade f.o.b., exports f.o.b. and imports c.i.f. by commodity groups for the Maghreb countries together, 1967, in millions of U.S. dollars

SITC	Commodity group	Intra-trade	Exports	Imports
0	Food and live animals	7.5	283.0	430.0
1	Beverages and tobacco	.1	81.6	16.1
2	Crude materials except fuels	1.4	237.5	105.2
3	Mineral fuels, lubricants	7.6	1,718.2	61.8
4	Animal and vegetable oils and fats	.7	18.6	49.8
5	Chemicals	.9	66.6	146.5
6.	Manufactured goods	4.3	41.2	443.0
7	Machinery and transport equipment	.8	10.5	515.0
8	Miscellaneous manufactured articles	2.1	8.4	125.2
	Total	25.4	2,465.6	1,892.6

Source: CNUCED, Commerce des pays du Maghreb en 1966 et 1967, 18 février 1969.

The figures above clearly show the very modest size of intra-trade for the Maghreb. In 1967 e.g., intra-trade amounts to about 1 per cent of total exports of the Maghreb countries. For commodity groups the picture is rather diversified, oils and fats, manufactured goods and machinery and transport equipment showing relatively more intra-trade.

2. Macro-economic projections

2.1 Introduction

Projecting the manufacturing industry in order to gain some insight in the possibilities for industrialization in a country is almost impossible without some basic information about the future macro-economic development. Therefore, a brief outline of the main macro-economic aspects of the economic development during the period 1970-1980 in the six countries of the North-African sub-region will be presented in this chapter. The projections include estimates for gross domestic product, imports, categories of demand like consumption, gross fixed capital formation and exports, savings, the balance of payments and the industrial origin of gross domestic product for broad sectors like agriculture, mining, construction, energy, services and, of course, manufacturing.

The year 1970 was taken as a common base year for the projections over the periods 1970-1975 and 1975-1980. Originally, however, 1964 was chosen as the common base year, implying that all projections are in constant 1964 prices. As no statistical information about the exact economic situation in 1970 is at this moment available, estimates for 1970 have been made on the basis of current trends. This means that data for 1970, apart from being in 1964 prices, will not always correspond to the actual figures of that year, but rather represent extrapolated values of trends during the period 1965-1968.

For all the six countries of the sub-region the macro-economic development up till 1980 has been estimated with the help of simple projection models. It should be emphasized, however, that these models have not been applied mechanically to the relevant sub-periods 1970-1975 and 1975-1980. E.g., the economic structure of the countries has not been supposed to remain unchanged during the seventies. Hence, those parameters in the models reflecting this structure have been adapted over time accordingly.

The methodology of estimating the future economic development as well as the models used for the projections are briefly described in sections 2.2 and 2.3 respectively. Results covering the two sub-periods 1970-1975 and 1975-1980 for the six countries of the sub-region are summarized in section 2.4.

2.2 Methodology of the macro-economic projections

In projecting the macro-economic data on the economic development during the seventies three stages have been distinguished. In the first stage provisional estimates for the years 1970, 1975 and 1980 on gross domestic product, its industrial origin, consumption and capital formation have been supplied to sector experts to facilitate the preparation of their sector studies. These data were provided as a rough, first orientation about the future economic development of the sub-region.

In the second stage the provisional estimates, especially on gross domestic product and capital formation, were taken as a starting point for a detailed and systematic analysis of the possible future development within the framework of simple projection models for an open economy. As a result, a consistent set of projections was obtained for gross domestic product, imports, categories of demand, savings and the balance of payments. Special attention was given to the realization of the highest possible rate of growth of GDP.

Given the projections arrived at in the second stage, the future sectoral development by broad economic sectors has been investigated in the final stage. Projections were made of the development during the seventies of agriculture, construction, energy and services to determine which rate of growth of manufacturing (including mining) would be compatible with the projected rate of growth for GDP. In chapter 4 these growth rates for manufacturing, determined on the basis of a macro-economic framework, will be compared with the estimates prepared by all the sector experts as proposed in their reports.

2.3 Projection methods

Depending on the stage of projecting - see section 2.2 - different types of projection methods have been applied. Thus, in the second stage several types of projection models were used, one e.g. being applied to Morocco, Tunisia and the U.A.R., another to the Sudan. Because of lack of data, only a very simple model could be used in the case of Algeria. For Libya projections were made in a special way due to the dominant role of the oil sector.

In the third stage, the same projection method for all countries of the sub-region has been followed to determine the industrial origin of GDP.

The main characteristics of the projection methods used will be briefly described in the next sub-sections.

2.3.1 The projection model for Morocco, Tunisia and the United Arab Republic

To project the macro-economic development during the seventies for Morocco, Tunisia and the U.A.R., an extended Harrod-Domar model for an open economy has been built with the following characteristics. The core of the model consists of a production function relating changes in capital formation to changes in GDP. This implies that capital is assumed to be the most scarce factor of production. Changes in GDP lead, through a marginal savings ratio, to corresponding changes in domestic savings. Commodity imports have been subdivided by end use into consumption goods, investment goods and raw materials and semi-finished products, each category depending on appropriate variables. Imported services and export of both commodities and services show autonomous rates of growth. The same has been assumed for government consumption. Balance equations complete the model.

The projection model described above, called model I, is completely determined, the rate of growth for GDP depending on the initial level of capital formation, the incremental capital-output ratio, the marginal savings ratio, the level and rate of expansion of exports and the several marginal import ratios. However, this endogenously determined rate of growth of GDP may differ from a desirable target rate of growth. Or, an endogenously determined inflow of foreign capital may exceed what is to be expected in the period under consideration. Therefore, the model was changed in such a way as to allow a target rate of growth for GDP or a certain expected inflow of foreign capital to be fixed in advance. In this connexion, two sub-models of the so-called model I have been formulated. All three models are included in appendix 2.I.

For the three countries 1970 has been chosen as the projection base year, estimated on the basis of trends prevailing in the late sixties. As to the parameters appearing in the model, first so-called historical values have been estimated on the basis of time series

from the beginning of the fifties onwards. Secondly, depending on expected structural changes or government policy, some of the parameters were adapted so that both for the period 1970-1975 as well as for 1975-1980 parameters may differ from values found on the basis of time series. Because projections focus on the years 1975 and 1980, variables refer to changes over a five-year period.

2.3.2 The projection models for Algeria and Libya

For Algeria time series on macro-economic variables are available only for 1958 and earlier years. In addition some estimates of input-output relations for 1963 and 1964 were available. On the basis of this scarce information "normal" values of the macro-economic variables have been computed for 1964. Next, projections have been made for the target years 1970, 1975 and 1980 by means of a very simple extended version of the Harrod-Domar model (see appendix 2.II).

In the case of Libya a sectoral model, with variables referring to annual changes, has been used in order to obtain projections for 1970. Three sectors have been distinguished: the petroleum sector, all other international industries together and all national sectors combined. The structure of the model can be summarized as follows. Production in the petroleum sector depends on foreign demand for petroleum; production in the combined national sectors depends on the production in the petroleum sector; the growth in production of the other international sectors together (petrochmical products) is determined exogenously; gross investment depends on production in the national sectors; in addition a savings function, import functions, a relation between factor payments and petroleum production and a number of definitional equations appear in the model which is shown in appendix 2.III.

For the years 1975 and 1980 a similar model has been used. It differs in the following respects from the former model. The variables represent changes over five-year periods. Gross investments are related to production increases in each sector separately. Moreover, inter-industrial deliveries appear in this model which can also be found in appendix 2.III.

2.3.3 The projection model for the Sudan

On the basis of the latest available statistics (1966) the 1970 values of the relevant variables have been obtained by means of a very simple model which can be found in appendix 2.IV. The variables refer to annual changes. This model distinguishes between a modern and a traditional sector in the Sudanese economy. For the traditional sector a constant rate of growth is determined exogenously. The growth of the modern sector depends on the investments made in that sector. In addition the model has a consumption function, import functions for consumer and investment goods respectively, a relation which determines government revenue as a function of national income and a number of definitional equations.

For the periods 1970-1975 and 1975-1980 a similar model has been used. Only the coefficients have been changed and four equations have been added i.e., an import function for raw materials, a relation which determines export growth and two relations which determine both government consumption and the size of the public deficit as functions of national income. These additional equations can also be found in appendix 2.IV.

2.3.4 Sectoral projection methods

The future development of GDP now being determined, the problem arises to what extent the broad sectors of production will actually contribute to this development. To investigate this problem a simple projection scheme, similar for all countries in the sub-region, was set up with the following characteristics.

The development of agriculture has been estimated exogenously on the basis of expert information contained in the report on agriculture after some minor corrections.

The total volume of future investments, estimated in the second stage, has been taken as the main explanatory element for the projection of the construction sector. As the composition of capital goods does not vary so much in a ten-year period, it can be determined which part of total capital formation will be supplied by the construction industry. In this way the future output of the construction industry can be estimated and its contribution to GDP can be calculated.

Both the energy and services sectors, the latter including transport, communication, trade, financial institutions, real estate, public administration, defence and other services, have been projected using the so-called growth-elasticity approach with respect to GDP. The future growth of the services sector has been assumed in most cases to be proportional to the growth of GDP. For energy, however, elasticities fairly above one were used, usually based on observations from past trends.

The projections for agriculture, construction, energy and services now being known, the future development of manufacturing (including mining) can be found as the difference between the projected development of total GDP and the total of projected values of these sectors.

2.4 Projection results for 1975 and 1980

2.4.1 Introductory remarks

Before presenting the results of the projections for the six countries of the sub-region a few general remarks should be made. First, it is recalled that all projections have been made in constant 1964 prices. Secondly, data on 1970 - at 1964 prices - are estimates, in some cases even projections. Hence, these data will not always correspond to the actual 1970 figures. Thirdly, per capita figures have been calculated on the basis of population statistics and estimates in ECA document E/CN.14/POP/6. However, for Morocco and the U.A.R. estimates for the seventies have been slightly revised downwards reflecting the necessity of a certain population control. On the other hand, figures for Tunisia and Libya seem to underestimate the future population growth somewhat, but no revision has been tried.

2.4.2 Morocco

The stagnating character of the Moroccan economy during the sixties - a modest share of capital formation in GDP, slightly decreasing levels of per capita income and per capita private consumption - determines to a considerable extent the projections for the period 1970-1980, summarized in table 2.4.2. The latter period may be called a transition period in which the rate of growth for GDP is accelerated from about 3 per cent to 5 per cent annually at the end of the seventies. The growth of per capita GDP increases

accordingly to almost 2 per cent per annum in 1980. Only after 1980 annual rates of growth of GDP between 6 and 7 per cent can be achieved, implying per capita increases for GDP and private consumption of about 3 per cent per annum.

The increase in the growth of GDP requires a corresponding rapid acceleration in building up the country's capital stock. Thus, gross capital formation is projected to increase by 10 per cent annually during the whole period 1970-1980, its share in GDP becoming 20.5 per cent in 1980 against 16 per cent in 1975 and 12 per cent in 1970. The share of imports in GDP increases too - from 21 to almost 23 per cent - mainly due to the rapidly increasing demand for investment goods and raw materials. On the other hand, the share of exports decreases from 1970 onwards as exports are projected to increase by a somewhat lower rate than GDP. Hence, the balance of payments deteriorates, leading to an increasing demand - assumed to be met - for foreign capital which reaches a level of 4.7 per cent of GDP in 1980. Domestic savings will therefore be sufficient to finance only part of the increase in capital formation, although its share in GDP rises substantially.

The projected sectoral pattern turns out to be fairly regular during 1970-1980. The share of agriculture in GDP declines slowly from 29 per cent in 1970 to 26 per cent in 1980. This slow rate of decline is caused by the fact that the acceleration in the growth of GDP only becomes substantial after 1975 when it comes to differ more significantly from the growth rate for agriculture. The share of construction and especially energy increases clearly. Although the rate of growth of manufacturing (including mining) lies well above the growth rate for GDP, its share increases only modestly, from 19 per cent in 1970 to almost 21 per cent in 1980.

Table 2.4.2 Macro-economic data on the economic development of Morocco during the period 1964-1980. Values in millions U.S. dollars at constant 1964 market prices

	Values				Annual rate of growth in percentages			Share in GDP in percentages			
	1964	1970	1975	1980	1964-'70	1970-'75	1975-'80	1964	1970	1975	1980
Total population, in mlns.	12.9	15.6	18.3	21.4	3.3	3.3	3.1				
Resources											
Gross domestic product	2,468	2,956	3,545	4,493	3.1	3.7	4.9	100.0	100.0	100.0	100.0
Item, per capita, in dollars	191	190	194	210	- .2	.4	1.7				
Imports	518	621	787	1,020	3.1	4.9	5.3	21.0	21.0	22.2	22.7
Uses of resources											
Private consumption	1,893	2,148	2,464	2,947	2.7	2.8	3.7	74.5	72.7	69.5	65.6
Item, per capita, in dollars	143	138	135	138	- .6	- .5	.6				
Public consumption	358	453	578	773	4.0	5.0	6.0	14.5	15.3	16.3	17.2
Gross capital formation	271	355	570	921	4.6	9.9	10.0	11.0	12.0	16.1	20.5
Exports	518	621	720	872	3.1	3.0	3.9	21.0	21.0	20.3	19.4
Savings	296	355	475	710	3.1	5.9	8.5	12.0	12.0	13.4	15.8
Net factor income, donations	25	0	- 28	- 63	.	.	.	1.0	.0	- .8	1.4
Deficit on current account	- 25	0	95	211	.	.	.	-1.0	.0	2.7	4.7
Industrial origin of G.D.P.											
Agriculture	745	864	1,001	1,161	2.5	3.0	3.0	30.2	29.2	28.2	25.8
Mining	123	568	700	933	3.9	4.3	5.9	5.0	19.2	19.7	20.8
Manufacturing	328							13.3			
Construction	99	111	137	214	1.9	4.3	9.5	4.0	3.8	3.9	4.8
Energy	53	72	98	146	5.3	6.3	8.3	2.1	2.4	2.8	3.2
Services	1,120	1,341	1,609	2,039	3.1	3.7	4.9	45.4	45.4	45.4	45.4

2.4.3 Algeria

As one can read from table 2.4.3 Algeria is assumed to grow by 6.5, 6.5 and 7 per cent during the three relevant time periods. This implies a growth of per capita GDP of 3.8, 3.3 and 3.8 per cent respectively. Investment will grow faster than GDP until 1975 when an investment/GDP ratic of 24.4 per cent has been reached, which is projected to remain about constant until 1980. Together with the reasonable rates of growth of exports and imports this implies an increasing savings ratio until 1975 after which year this ratio remains constant at 19.4 per cent. An inflow of foreign capital amounting to almost 5 per cent of GDP is assumed after 1970.

Table 2.4.3, which also gives the origin of gross domestic product for the relevant years, shows that the following structural changes have been projected. The share of agriculture in GDP decreases from 20.6 to 11.4 per cent between 1964 and 1980. Mining plus manufacturing increase their share from 25.2 to 31.6 per cent, while the shares of construction and energy increase from 4.3 and 1.5 per cent respectively to 6.1 and 2.5 per cent respectively.

2.4.4 Tunisia

The most important element of the projections for Tunisia, summarized in table 2.4.4, is undoubtedly the possibility of achieving an annual growth rate for GDP of about 6 per cent during 1970 - 1980, while, at the same time, curbing a balance of payments deficit of 9 per cent of GDP in 1970 - even 13 per cent in 1964 - to 6 per cent in 1980. Per capita private consumption can therefore increase by more than 2 per cent annually during the seventies. Because of the acceleration in the growth of GDP around 1970 the rate of growth of gross capital formation increases from 3.4 per cent annually during 1964-1970 to 5.3 per cent and 8.2 per cent during 1970-1975 and 1975-1980 respectively. The share of gross capital formation in GDP shows therefore no clear trend and rather fluctuates around 22 per cent.

Exports are assumed to increase by 7 per cent per year during the whole period 1964-1980. Accordingly, its share in GDP increases regularly to reach a level of 24 per cent in 1980. Imports show rates of growth well below those for GDP during 1964-1970 and 1970-1975 due to import substitution - both for raw materials and consumer goods - and

Table 2.4.3; Macro-economic data on the economic development of Al eria during the period 1964 - 1980.
Values in millions U.S. dollars at constant 1964 market prices

	Values				Annual rate of growth in percentages			Share in G.D.P in percentages			
	1964	1970	1975	1980	1964-'70	1970-'75	1975-'80	1964	1970	1975	1980
Total population, in mlns.	11.7	13.6	15.8	18.4	2.6	3.1	3.1				
Resources											
Gross domestic product	2,543	3,710	5,083	7,129	6.5	6.5	7.0	100.0	100.0	100.0	100.0
Item, per capita, in dollars	217	273	322	387	3.8	3.3	3.8				
Imports	870	1,269	1,756	2,463	6.5	6.7	7.0	34.2	34.2	34.5	34.5
Uses of resources											
Private consumption	1,637	2,230	2,890	3,973	5.3	5.3	6.6	64.4	60.1	56.9	55.7
Item, per capita, in dollars	140	164	183	216	2.6	2.1	3.4				
Public consumption	517	820	1,205	1,771	8.0	8.0	8.0	20.3	22.1	23.7	24.8
Gross capital formation	509	835	1,245	1,747	8.6	8.3	7.0	20.0	22.5	24.4	24.5
Exports	750	1,094	1,499	2,102	6.5	6.5	7.0	29.5	29.5	29.5	29.5
Savings	416	660	988	1,386	8.0	8.4	7.0	16.3	17.8	19.4	19.4
Net factor income, donations	27	0	0	0	.	.	.	1.1	.0	.0	.0
Deficit on current account	93	175	257	361	.	.	.	3.7	4.7	5.0	5.0
Industrial origin of G.D.P											
Agriculture	523	607	703	815	2.5	3.0	3.0	20.6	16.4	13.8	11.4
Mining	438	1,072	1,533	2,296	8.9	7.4	8.0	17.2	28.9	30.2	31.6
Manufacturing	203							8.0			
Construction	110	169	280	432	7.4	10.4	9.1	4.3	4.6	5.5	6.1
Energy	39	68	108	178	9.8	9.8	10.5	1.5	1.8	2.1	2.5
Services	1,230	1,794	2,459	3,448	6.5	6.5	7.0	48.4	48.4	48.4	48.4

Table 2.4.4 Macro-economic data on the economic development of Tunisia during the period 1964-1980. Values in millions U.S. dollars at constant 1964 market prices.

	Values				Annual rate of growth in percentages			Share in G.D.P. in percentages			
	1964	1970	1975	1980	1964-'70	1970-'75	1975-'80	1964	1970	1975	1980
Total population, in mlns.	4.3	4.9	5.5	6.1	2.2	2.3	2.3				
Resources											
Gross domestic product	829	1,115	1,486	2,000	5.1	5.9	6.1	100.0	100.0	100.0	100.0
Item, per capita, in dollars	302	228	270	328	2.8	3.5	3.7				
Imports	257	322	410	558	3.8	4.8	6.4	31.0	28.9	27.6	27.9
Uses of resources											
Private consumption	585	746	939	1,170	4.1	4.7	4.5	70.6	66.9	63.2	58.5
Item, per capita, in dollars	136	152	171	192	1.8	2.3	2.1				
Public consumption	138	201	296	434	6.5	8.0	8.0	16.7	18.0	19.9	21.7
Gross capital formation	200	245	318	472	3.4	5.3	8.2	24.2	22.0	21.4	23.6
Exports	161	245	343	482	7.2	7.0	7.0	19.4	22.0	23.1	24.1
Savings	94	145	218	348	7.5	8.6	9.6	11.3	13.0	14.7	17.4
Net factor income, donations	-11	-23	-33	-48	.	.	.	-1.3	-2.0	-2.2	-2.4
Deficit on current account	108	100	100	124	.	.	.	13.0	9.0	6.7	6.2
Industrial origin of G.D.P.											
Agriculture	166	193	223	259	2.5	3.0	3.0	20.0	17.3	15.0	13.0
Mining	16	256	381	542	7.8	8.3	7.3	1.9	23.0	25.6	27.1
Manufacturing	147							17.7			
Construction	65	77	94	131	2.9	4.1	6.9	7.8	6.9	6.3	6.6
Energy	13	21	32	50	7.9	9.2	9.5	1.6	1.9	2.2	2.5
Services	422	568	756	1,018	5.1	5.9	6.1	51.0	50.9	50.9	50.8

the relatively slowly increasing demand for investment goods. During the final period 1975-1980 imports grow only slightly faster than GDP so that its share stabilizes at about 28 per cent during the late seventies. As a result of the projections for both imports and exports the balance of payments situation improves continuously. An increasing part of gross capital formation is thus financed by domestic resources as can be judged from the rates of growth for savings and investments during the sub-periods.

The industrial origin of GDP for Tunisia shows the picture of an economy in which rapid structural changes take place. The share of agriculture regularly declines from 20 per cent in 1964 to 13 per cent in 1980. Both manufacturing (including mining) and energy are projected to expand strongly. The share of manufacturing plus mining, already increasing from 19.6 per cent in 1964 to 23 per cent in 1970, finally reaches 27 per cent in 1980. Because of the relatively slow increase of gross capital formation the share of construction in GDP declines till 1975. Afterwards it increases to about 6.5 per cent. Finally, it should be mentioned that the share of construction in GDP in 1964 is remarkably high.

2.4.5 Libya

Table 2.4.5 which gives the projections for Lybia is remarkable indeed. GDP is projected to increase by 17.0 per cent annually between 1964 and 1970, implying a rate of growth of per capita GDP of 14.5 per cent annually. This rate of growth is acceptable in the light of experience in the recent past. For the periods 1970-1975 and 1975-1980 it has been assumed that the exports of petroleum would hardly increase implying that the rates of growth of GDP would decrease considerably, although they remain quite substantial. The rates of growth of investment show a pattern similar to the corresponding rates of growth of GDP. The savings ratio increases until 1970, being equal at that time to 30.1 per cent because of large public savings. Next it decreases, reaching a level of about 18 per cent in 1980. Imports grow at about the same rate as GDP implying - given the decrease in export growth, a continuous deterioration of the balance of payments. This process results in a deficit after 1975.

The mining and manufacturing sector increases its share in GDP from 54.3 to 66.5 per cent between 1964 and 1980. Also the share of construction increases, from 4.5 to 6.0 per cent, but the share of the services decreases from 34.4 per cent to 25.0 per cent.

Table 2.4.5 Macro-economic data on the economic development of Libya during the period 1964-1980. Values in millions U.S. dollars at constant 1964 market prices

	Values				Annual rate of growth in percentages			Share in G.D.P in percentages			
	1964	1970	1975	1980	1964-'70	1970-'75	1975-'80	1964	1970	1975	1980
Total population, in mlns.	1.6	1.9	2.1	2.3	2.2	2.3	2.3				
Resources											
Gross domestic product	1,010	2,612	3,662	5,478	17.0	7.0	8.4	100.0	100.0	100.0	100.0
Item, per capita, in dollars	630	1,375	1,745	2,380	14.5	4.6	6.0				
Imports	451	915	1,326	1,946	13.0	8.0	8.0	44.6	35.0	36.2	35.5
Uses of resources											
Private and public consumption	606	1,195	2,110	3,882	12.0	12.0	13.0	60.0	51.6	57.6	70.9
Item, per capita, in dollars	380	630	1,000	1,690	9.6	9.5	10.5				
Gross capital formation	197	548	837	1,365	19.0	8.9	10.5	19.5	21.0	22.9	24.9
Exports	658	1,784	2,042	2,177	18.0	2.7	1.3	65.1	68.3	55.7	39.7
Savings	198	786	864	963	25.0	1.8	2.2	19.6	30.1	23.6	17.6
Net factor income, donations	-206	-631	-689	-633	.	.	.	20.4	24.2	18.8	11.6
Deficit on current account	- 1	-238	- 27	402	.	.	.	-0.1	-9.1	-0.7	7.3
Industrial origin of G.D.P.											
Agriculture	65	80	97	118	3.5	4.0	4.0	4.4	3.1	2.6	2.2
Mining	505	1,778	2,470	3,641	21.7	6.8	8.1	50.0	68.0	67.4	66.5
Manufacturing	43							4.3			
Construction	45	93	167	328	12.9	12.4	14.5	4.5	3.6	4.6	6.0
Energy	4	7	11	18	10.0	10.0	10.0	.4	.3	.3	.3
Services	348	654	918	1,373	11.1	7.0	8.4	34.4	25.0	25.1	25.0

The role of agriculture which is already small in 1964 diminishes further in importance: 2.2 per cent of GDP in 1980.

2.4.6 The United Arab Republic

Table 2.4.6 shows that after the distortions in the Egyptian economy during the period 1964-1970 a fairly balanced pattern of development could be projected for the seventies. Before discussing this pattern a few remarks should be made about the development of the economy in the years preceding 1970. GDP has been estimated to increase at a rate of almost 3 per cent per annum, just enough to prevent per capita income from decreasing. Savings are hardly assumed to increase and so are investments, leaving some room for improving per capita levels of private consumption. Because of import substitution for raw materials (oil), a very modest increase in the demand for capital goods and tight restrictions on imported consumer goods, total imports increase at a lower rate than GDP. Despite the loss of income due to the closure of the Suez Canal, exports do not decrease as a result of new oil exports from oil-wells recently struck. If the Suez Canal effect is eliminated exports would have increased by almost 5 per cent annually.

During the period 1970-1980 GDP is projected to increase by more than 6 per cent per annum. Consequently, the level of per capita income may rise by more than 3 per cent every year. Both investments and savings are assumed to grow at rates of 8 to 9 per cent per year, with growth rates for savings somewhat higher than for investments. As a result, an increasing part of gross capital formation will be financed by domestic resources. The share of imports in GDP decreases further till 1975 after which it remains stable at about 22 per cent. The share of exports increases regularly, from 17.1 per cent in 1970 to 18.4 per cent in 1980, due to a projected rate of growth of 7 per cent per annum during the seventies. Consequently, the trade deficit decreases from 5.9 per cent in 1970 to 3.5 per cent in 1980.

As to the sectoral aspects of the projections, important changes in the industrial structure of GDP can be expected after 1970. The share of agriculture in GDP decreases strongly, its share of 27.6 per cent in 1970 being reduced to 20.7 per cent in 1980. Apart from the services sector, all other sectors increase their share in GDP. Manufacturing (including mining) amounts to 31.4 per cent of GDP in 1980 against 25.8 per cent in 1970. Construction and energy show similar increases.

Table 2.4.6: Macro-economic data on the economic development of United Arab Republic during the period 1964-1980. Values in millions U.S. dollars at constant 1964 market prices

	Values				Annual rate of growth in percentages			Share in G.D.P. in percentages			
	1964	1970	1975	1980	1964-'70	1970-'75	1975-'80	1964	1970	1975	1980
Total population, in mlns.	28.7	33.6	38.7	44.6	2.7	2.9	2.9				
Resources											
Gross domestic product	4,807	5,700	7,650	10,380	2.9	6.1	6.3	100.0	100.0	100.0	100.0
Item, per capita, in dollars	168	170	198	233	.2	3.0	3.3				
Imports	1,145	1,305	1,675	2,273	2.2	5.1	6.3	23.8	22.9	21.9	21.9
Uses of resources											
Private consumption	3,153	3,828	4,800	6,339	3.3	4.6	5.7	65.6	67.2	62.8	61.1
Item, per capita, in dollars	110	114	124	142	.6	1.7	2.7				
Public consumption	991	1,276	1,786	2,390	4.3	7.0	6.0	20.6	22.4	23.3	23.0
Gross capital formation	837	928	1,377	2,014	1.7	8.3	7.9	17.4	16.3	18.0	19.4
Exports	970	973	1,362	1,910	.0	7.0	7.0	20.2	17.1	17.8	18.4
Savings	162	696	1,063	1,651	.8	8.8	9.2	13.8	12.2	13.9	15.9
Net factor income, donations	0	100	0	0	.	.	.	.0	1.8	.0	.0
Deficit on current account	175	232	314	363	.	.	.	3.6	4.1	4.1	3.5
Industrial origin of G.D.P.											
Agriculture	1,316	1,571	1,839	2,153	3.0	3.2	3.2	27.4	27.6	24.0	20.7
Mining	55	1,470	2,197	3,264	3.0	8.4	8.2	1.1	25.8	28.7	31.4
Manufacturing	1,176							24.5			
Construction	230	246	364	533	1.1	8.2	8.0	4.8	4.3	4.8	5.2
Energy	58	76	112	172	4.6	8.1	9.0	1.2	1.3	1.5	1.7
Services	1,972	2,337	3,138	4,258	2.9	6.1	6.3	41.0	41.0	41.0	41.0

2.4.7 Sudan

For Sudan the relevant information on the expenditure on gross domestic production can be found in table 2.4.7. The rates of growth of GDP have been projected as: 4.0 per cent annually during 1964-1970, 4.5 per cent during 1970-1975 and 5.2 per cent during 1975-1980. For growth of per capita GDP the annual percentages are 1.5, 1.9 and 2.5 respectively. The corresponding rates of growth of the other variables, and their shares in GDP appear reasonable. Only a few figures require some explanation. Between 1964 and 1970 gross investment decreases by 2.7 per cent annually. It turns out that the 1964 level of investment has been exceptionally high, among others because of considerable stock formation, so that the projected decrease in investment merely means a return to normal situation. The same reasoning is applicable with regard to the decrease in imports. This decrease is caused mainly by the projected decrease in investment. After 1970 both imports and investments increase rapidly implying an increasing demand for foreign capital.

The projected development of the industrial origin of gross domestic product is also shown in table 2.4.7. These figures do not fully indicate a normal structural change to be expected in a country like Sudan. The share of the agricultural sector is projected to decrease from 52.9 to 47.4 per cent between 1964 and 1980; the shares of mining and manufacturing together and of construction increase from 6.8 to 9.9 per cent and from 5.3 to 7.7 per cent respectively. The shares of the other sectors remain about constant.

Table 2.4.7 Macro-economic data on the economic development of Sudan during the period 1964-1980. Values in millions U.S. dollars at constant 1964 market prices

	Values				Annual rate of growth in percentages			Share in G.D.P. in percentages			
	1964	1970	1975	1980	1964-'70	1970-'75	1975-'80	1964	1970	1975	1980
Total population, in mlns.	13.4	15.4	17.4	19.8	2.4	2.5	2.6				
Resources											
Gross domestic product	1,391	1,758	2,194	2,831	4.0	4.5	5.2	100.0	100.0	100.0	100.0
Item per capita, in dollars	104	114	126	143	1.5	1.9	2.5				
Imports	264	254	334	498	- .6	5.6	8.3	19.0	14.4	15.2	17.6
Uses of resources											
Private consumption	1,071	1,386	1,687	2,102	4.3	4.1	4.6	77.0	78.8	76.9	74.2
Item, per capita, in dollars	80	90	97	106	1.8	1.6	1.9				
Public consumption	152	204	273	383	5.0	6.0	7.0	10.9	11.6	12.4	13.6
Gross capital formation	204	171	265	459	-2.7	9.2	11.6	14.6	9.7	12.1	16.3
Exports	229	251	304	385	1.6	3.9	4.8	16.4	14.3	13.9	13.6
Savings	163	168	235	345	.5	7.0	8.0	11.7	9.6	10.7	12.2
Net factor income, donations	- 5	0	0	0	.	.	.	- .4	.0	.0	.0
Deficit on current account	41	3	30	114	.	.	.	2.9	.2	1.4	4.0
Industrial origin of G.D.P											
Agriculture	737	906	1,102	1,341	3.5	4.0	4.0	52.9	51.5	50.2	47.4
Mining	1	154	195	281	8.6	4.8	7.5	.1	8.8	8.9	9.9
Manufacturing	93							6.7			
Construction	74	81	126	218	1.4	9.2	11.6	5.3	4.6	5.7	7.7
Energy	8	11	15	21	5.7	6.4	7.4	.6	.6	.7	.7
Services	479	606	756	970	4.0	4.5	5.2	34.4	34.5	34.5	34.3

3. Projections Manufacturing Industry

3.1 Introduction

In the preceding chapter macro-economic projections have been presented as a framework for the analysis of industrialization possibilities in the countries of the North-African sub-region up till the year 1980. To investigate these possibilities in detail, various experts have made sector projections covering almost all parts of the manufacturing industry on the basis of the provisional data arrived at in the first stage of the macro-economic projections. As the manufacturing sub-sectors have been distinguished according to the old two digit ISIC classification, the sector projections usually refer to some 20 manufacturing industries. In addition, 5 mining sectors have been covered, because either they were linked rather closely to some of the manufacturing industries, or, in case of the oil sector, because of their vital importance for the future of the economy concerned. In this chapter the main outcome of the projections for the various manufacturing industries will be summarized.

In presenting the chapter, no attempt has been made to include all the data contained in the sector reports. Instead, this chapter concentrates on the most important developments projected to take place within the manufacturing industry and reports about this on the basis of a few selected items: value added, export, import and capital formation. For details about the projections and descriptions of specific industries the reader is referred to the sector reports.

A few words should be added to explain why the four above-mentioned items have been chosen to characterize sectoral developments. Value added, rather than total production, has been selected because it measures for every industry in the proper way its contribution to GDP. On the level of manufacturing sub-sectors, however, it may be assumed that the ratio of value added to total production (gross output) will be rather stable during some time, so that rates of growth in percentages derived for value added will generally approximate the corresponding growth rates for production. The second item, export, has been chosen because of the importance usually attached to the composition of the export basket. Often it is felt that, on a commodity basis, the structure of exports should become more diversified in the course of development in a double sense. First, there is a strong preference to increase the importance of manufactured goods and, secondly, the composition of manufactured products as such should not be too one-sided. For that reason attention will be given in the sub-sections to

exports, to the projected share of manufactured goods in total exports for different years, and to the projected change in its composition.

Imports have been included in order to trace in which sectors and to what extent import substitution has been projected by the various experts. In this connexion import substitution is assumed to occur when the ratio of imports to total supply (gross output plus imports) in a sector decreases over time while gross output increases. With the ratio of value added to gross output supposed to be fixed, this definition implies that whenever the growth rate for value added exceeds the one for imports in a sector, import substitution is assumed to have taken place. Because imports of manufactured goods are usually less concentrated in a few sectors than exports, an analysis of the composition of imports of manufactured products seemed to be less useful than in the case of exports. Finally, new fixed capital formation has been selected to show for which amount the projected increases in production for the manufacturing industries require the use of an important scarce factor, viz. capital. Moreover, some attention will be given to the sectoral incremental capital-income ratios and their impact on the sectoral distribution of new investments.

In the next six sub-sections, each covering one of the six countries in the sub-region, the four items chosen to characterize the projected development of manufacturing industry will be dealt with successively. As most of the sector reports were prepared during 1967-1968, the year 1964 was chosen as the common statistical base year for all sector studies. Figures on 1970 should thus be regarded as forecasts or estimates rather than projections. Again, all projections are in constant 1964 prices.

Concerning the presentation of figures the following remarks should be made. First, to facilitate the presentation of the various sector projections, absolute figures on output, value added, export, import and new fixed capital formation have not been included in the tables in the main text, but have been added as a separate appendix to this chapter. All tables appearing in the main text have been derived from these appendixes. Secondly, in the following sections the expression "total manufacturing" will often be used. In this connexion "total" means the sum of all manufacturing sub-sectors as far as covered by sector experts. This implies that two types of manufacturing activities are not included, viz. sectors not covered at

all - printing and publishing and miscellaneous manufacturing industries - and the lacking parts of sectors not fully covered. Finally, in this chapter no attempt will be made to evaluate figures derived from the sector projections. This will be done in chapter 4.

3.2 Morocco

3.2.1 Value added

For the total manufacturing industry sector experts have projected the average annual rates of growth during 1964-1970, 1970-1975 and 1975-1980 for value added amounting to 6.4, 7.7 and 6.8 per cent respectively. The following table gives the shares in value added of the sub-sectors of the manufacturing industry for the years 1964, 1970 and 1980 together with the annual rates of growth of value added during the relevant time periods. Figures have been derived from appendix 3.II.

Table 3.2.1

Shares in total value added of manufacturing industry covered by experts, 1964, 1970 and 1980; annual rates of growth of value added, 1964-1970, 1970-1975 and 1975-1980.

Sector	Shares			Rates of growth in percentages		
	1964	1970	1980	1964-1970	1970-1975	1975-1980
Food	39.0	32.9	24.1	3.5	4.8	3.2
Beverages	5.7	3.8	2.5	-.6	2.5	3.4
Tobacco	5.7	5.1	4.0	4.6	4.6	4.5
Textiles, clothing	20.4	22.7	24.3	8.4	8.2	7.9
Chemicals	5.7	10.2	13.3	17.1	10.0	10.2
Petroleum products	3.3	4.2	4.6	10.0	10.7	7.0
Building materials	3.8	4.2	4.6	8.0	8.3	8.3
Basic metals	1.2	2.1	3.8	16.2	20.1	7.4
Metal products	5.5	5.2	4.9	5.4	6.6	6.5
Machinery	1.6	2.0	4.1	9.7	19.6	11.4
Transport equipment	2.5	2.7	4.7	7.7	14.9	11.7
Other sectors	5.6	4.9	5.1			
Total manufacturing	100.0	100.0	100.0	6.4	7.7	6.8

According to expectation, the share of food, beverages and tobacco is projected to decrease from 50.4 per cent in 1964 to 40.6 per cent in 1980. Another major consumer-goods industry, textiles and clothing, will increase its already high share of 1964 during the projection period from 20.4 to 24.3 per cent. Large increases are to be expected in the chemical sector and, to a lesser extent, for petroleum products.

In the metal industry, basic metals - both ferrous and non-ferrous - machinery and transport equipment are assumed to expand in a very rapid way. Together with metal products the total contribution of the metal industry to manufacturing increases from 10.8 per cent in 1964 to 17.5 per cent in 1980. It is striking that, apart from textiles, sectors producing mainly intermediate products or products required in the process of capital formation, show the highest rates of growth.

3.2.2 Exports

According to the estimates of the sector experts, total exports of manufactured goods are expected to increase by 7.4, 7.3 and 4.9 per cent per annum during 1964-1970, 1970-1975 and 1975-1980 respectively. As a result the share of manufactured exports in total exports increases regularly from 20.1 per cent in 1964 to 25.6 in 1970 and 32.9 in 1980.

It can easily be shown from the data in appendix 3.III that the structure of manufactured exports was rather undiversified in 1964. Food and beverages account for 54 and 21 per cent respectively of total exports. The most important other sectors are: pulp and paper with 6 per cent, textiles and clothing with 5.4 per cent, chemicals with 2.9 per cent and non-ferrous metals with 2.5 per cent. The shares of the other sectors are all smaller than 2 per cent.

Between 1964 and 1980 this structure is going to change considerably. Exports of food and beverages are both projected to grow by less than 3 per cent per annum during this period. consequently, their share in manufactured exports decreases to 28.9 and 10.6 per cent respectively in 1980. Exports of textiles and clothing, chemicals and basic metals - mainly non-ferrous - are expected to increase at very high rates of growth during 1964-1980, resulting in shares of 11.2, 17.4 and 17.0 per cent respectively in 1980. Exports of pulp and paper will grow at less spectacular rates, but nevertheless their share increases to 7.5 per cent in 1980.

3.2.3 Imports

Total imports of manufactured goods are projected to increase by 6.0, 5.6 and 7.3 per cent per annum during 1964-1970, 1970-1975 and 1975-1980 respectively. When these percentages are compared with the corresponding rates of growth for value added in section 3.2.1, it appears that the differences between the two are rather small. If a fixed relation between value added and gross output is assumed, it means that the ratio of imports to total supply (output plus imports) will vary only slightly during the projection period, viz. from .281 in 1964 to .283 in 1970, .262 in 1975 and .269 in 1980.

In contrast with exports, imports are usually less concentrated in a few industrial sub-sectors. Thus, instead of presenting shares in total manufactured imports together with rates of growth, it may be more useful to report about the ratio of imports to total supply and its movement over time as implied in the experts' projections for the various industrial sectors. Data on this ratio are given below and have been derived from appendices 3.I and 3.IV.

Table 3.2.3

Ratio of imports to total supply for selected industries, 1964, 1970, 1975 and 1980; shares in manufactured imports, 1980

Sector	Import ratio				Share
	1964	1970	1975	1980	1980
Food	.147	.168	.196	.223	24.6
Textiles	.272	.181	.123	.084	4.3
Clothing	.211	.149	.113	.091	1.6
Wood products	.828	.808	.789	.764	2.5
Pulp and paper	.417	.417	.416	.329	2.2
Rubber	.477	.342	.306	.264	1.8
Chemicals	.579	.419	.321	.267	11.5
Petroleum products	.204	.088	.0	.0	.0
Building materials	.117	.079	.049	.046	.5
Ferrous metals	.932	.917	.619	.603	5.7
Non-ferrous metals	.466	.425	.246	.332	3.5
Metal products	.263	.305	.311	.419	5.7
Machinery	.682	.841	.795	.795	32.6
Transport equipment	.385	.473	.234	.187	3.4
Other sectors		less than.04			.1
Total manufacturing	.281	.283	.262	.269	100.0

For several sub-periods import substitution is projected to occur in the case of textiles, clothing, rubber, chemicals, petroleum products, building materials, ferrous metals and transport equipment. For wood products and pulp and paper import substitution is of a very modest character. On the other hand an increasing ratio is projected for food and metal products. Non-ferrous metals and machinery are intermediate cases. Hence, on the whole a clear tendency for import substitution prevails in many sectors except, however, for food products and part of the metal industries. Those industries almost counterbalance the import substitution effects of the other sectors.

With regard to the absolute value of the various import ratios, it appears that throughout the whole projection period the supply of wood products, ferrous metals and machinery consists of more than 50 per cent of imported goods. In general the metal industries, except for transport equipment, show a relatively high dependency on imports.

3.2.4 New fixed capital formation

According to the sector experts total new fixed capital formation in manufacturing industry during the period 1964-1980 will amount to some 1,360 million U.S.$. During the same period value added in manufacturing is projected to increase by almost 610 million U.S.$. The incremental capital-income ratio for manufacturing implicit in the projections thus appears to be 2.24. It should be kept in mind, however, that the increase in value added cannot solely be attributed to the projected new investments, but also includes the effects of a better utilization of the existing capital stock.

Concerning the distribution of new fixed capital formation over the various sub-sectors, it can be expected that those sub-sectors for which high increases in value added have been projected, also take up considerable parts of total capital formation in manufacturing industry. To a certain extent, differences among the sectoral capital-income coefficients may change this picture. For the most important sectors those ratios are given in the table on the next page. They have been derived from appendices 3.II and 3.V.

It appears from appendices 3.II and 3.V that the sectoral capital-income ratios indeed influence the ranking of the sectors. In terms of value-added increments textiles come first with 121

million U.S.$, followed by chemicals and food products with 104 and 100 million U.S.$. Other important sectors are clothing (39 million U.S.$) and several metal industries (ranging from 35 to 22 million U.S.$).

The largest investment is projected to take place in the food sector: 430 million U.S.$. Next come chemicals, textiles and pulp and paper with 232, 127 and 116 million U.S.$ respectively. This change in ranking clearly shows the influence of the size of the capital-income ratios, although it should be stressed that the change in ranking for pulp and paper is probably too pronounced as a result of an extremely high capital-income coefficient. As for the other sectors, similar changes occur, e.g. basic metals take up relatively more investments, whereas the other metal sectors require less investments than would be expected on the basis of the value-added ranking.

As far as the food sector is concerned, it is remarkable that exclusion of the sugar industry reduces the capital-income ratio from 4.31 to 2.46. The reason for this can be found in the very high capital-income ratio of the sugar industry in Morocco.

Table 3.2.4

Incremental capital-income ratios for selected industries, 1964-1980

Sector	ICIR
Food	4.31
Textiles	1.05
Clothing	.64
Pulp and paper	12.82
Rubber	2.78
Chemicals	2.22
Petroleum products	1.42
Building materials	2.61
Ferrous metals	8.44
Non-ferrous metals	5.59
Metal products	.89
Machinery	.99
Transport equipment	.77
Total manufacturing	2.24

3.3 Algeria

3.3.1 Value added

According to the projections of the sector exports value added in manufacturing industry will grow by 7.8, 8.9 and 7.6 per cent during the periods 1964-1970, 1970-1975 and 1975-1980 respectively. For the sub-sectors of manufacturing industry, the following table gives their shares in value added of the manufacturing sector in the years 1964, 1970 and 1980 together with the annual rates of growth of value added during the relevant time periods. Figures have been derived from appendix 3.II.

Table 3.3.1

Shares in total value added of manufacturing industry covered by experts, 1964, 1970 and 1980; annual rates of growth of value added 1964-1970, 1970-1975 and 1975-1980.

Sector	Shares			Rates of growth in percentages		
	1964	1970	1980	1964-1970	1970-1975	1975-1980
Food	35.7	27.5	20.3	2.8	4.5	5.2
Beverages	19.0	11.9	6.0	- .4	.9	1.1
Tobacco	9.5	7.3	5.0	3.3	4.2	4.2
Textiles, clothing	5.2	8.8	9.0	17.6	9.0	7.7
Chemicals	7.6	10.3	16.3	13.4	18.5	8.3
Petroleum products	5.1	7.0	8.8	13.5	12.7	8.8
Building materials	4.1	4.1	4.2	7.6	10.3	6.4
Ferrous metals	.5	3.3	4.2	46.8	12.2	5.9
Non-ferrous metals	.5	1.3	3.0	25.3	22.8	13.2
Metal products	2.5	3.7	4.4	15.0	10.7	9.3
Machinery	3.6	7.4	12.4	21.5	14.2	13.7
Transport equipment	2.9	2.3	1.1	3.6	1.1	.3
Other sectors	3.8	5.1	5.3			
Total manufacturing	100.0	100.0	100.0	7.8	8.9	7.6

The share of food, beverages and tobacco decreases from 64 per cent in 1964 to 47 per cent in 1970 and further to 31 per cent in 1960. The sectors whose shares in total value added of manufacturing industry increase considerably are: textiles, chemicals, petroleum products, ferrous and non-ferrous metals and machinery. In particular during the first period, 1964-1970, very high annual rates of growth

are expected in these industries. In the second period, 1970-1975, these rates of growth are generally lower than previously but they remain high. This decrease in the rates of growth continues in the last period in such a way that the differences in corresponding rates of growth between the first and third periods are considerable indeed.

3.3.2 Exports

For Algeria it is expected that exports of manufactured goods will increase by 5.1, 10.1 and 5.2 per cent per annum during 1964-1970, 1970-1975 and 1975-1980 respectively. The share of manufacturers in total exports remains about constant: 21.6, 19.9 and again 21.6 per cent in 1964, 1970 and 1980 respectively.

From the data in appendix 3.III one can easily derive that in 1964 the structure of Algerian exports was not very diversified. In that year 75 per cent of total exports of manufactured goods consisted of beverages (wine). Exports of food products amounted to 9 per cent of total exports of manufactured goods. Next come: transport equipment with 3.4 per cent, pulp and paper with 3.1 per cent, building materials with 2.2 per cent, while the shares of the other industries are all smaller than 2 per cent.

For 1980 the structure of exports of manufactured goods is expected to be much more diversified. Beverages are still the most important export product, but their share will be reduced to 26.5 per cent. The reason is that from 1964 onwards production - and consequently also exports - of wine will hardly increase. Exports of food products in 1980, projected to grow by some 4.5 per cent annually, will amount to 6.2 per cent of total manufactured exports. In particular chemicals (17.6 per cent), petroleum products (16.5 per cent), ferrous metals and non-ferrous metals (11.8 and 10.4 per cent respectively) will have increased their shares in 1980 which makes for a more diversified structure of industrial exports.

3.3.3 Imports

In the sector reports imports of manufactures are projected to grow by .3, 3.4 and 7.3 per cent annually during 1964-1970, 1970-1975 and 1975-1980 respectively. As will be remembered from section 3.3.1, value added in the manufacturing industry will grow by 7.8, 8.9 and 7.6 per cent during the same periods. This implies that

in particular during the 1964-1970 period but also during 1970-1975, the ratio of imports to total supply (output plus imports) decreases sharply in the manufacturing industry but that this phenomenon will not appear during 1975-1980. For the manufacturing industry this import ratio moves from .375 in 1964 to .294 in 1970 and further to .244 in 1975 after which it remains about stable: .245 in 1980.

For each of the relevant sectors of manufacturing industry the import ratios and the share in total imports of manufactures can be found in the following table. Figures have been derived from appendices 3.I and 3.IV.

Table 3.3.3

Ratio of imports to total supply for selected industries, 1964, 1970, 1975 and 1980; shares in imports of manufactures, 1980

Sector	Import ratio				Share
	1964	1970	1975	1980	1980
Food	.233	.211	.192	.168	17.9
Textiles	.680	.289	.179	.120	3.1
Clothing	.751	.700	.662	.613	6.4
Wood products	.748	.761	.778	.791	2.2
Pulp and paper	.464	.459	.451	.359	3.2
Rubber	.680	.630	.459	.327	1.9
Chemicals	.599	.439	.238	.204	12.1
Petroleum products	.319	.0	.0	.0	.0
Building materials	.100	.093	.039	.047	.5
Ferrous metals	.923	.418	.240	.237	4.1
Non-Ferrous metals	.607	.525	.371	.401	5.2
Metal products	.511	.436	.392	.439	8.2
Machinery	.743	.477	.331	.363	17.9
Transport equipment	.154	.426	.631	.741	16.9
Other sectors		less than .04			.4
Total manufacturing	.375	.294	.243	.245	100.0

This table does not need much comment. If a value of the import ratio equal to .500 is considered as a criterion whether demand for a sector's products is supplied mainly by imports or not, then the table shows that in 1980 only 3 sectors can be considered to be import-dependent: clothing, wood products and transport equipment. In 1964 the number of import-dependent sectors still amounted to 9.

A few striking observations will further be mentioned. First, already from 1970 onward the demand for petroleum products is expected to be satisfied fully through domestic production. Secondly, in the ferrous-metals sector the largest import substitution will take place: the import ratio drops from .923 in 1964 to .237 in 1980. Thirdly, the transport equipment sector is the only sector which becomes much more import-dependent; the ratio increases from .154 in 1964 to .741 in 1980.

3.3.4 New fixed capital formation

According to the sector experts value added in the manufacturing industry will increase by 760 million U.S.$ between 1964 and 1980. In the same period the investments for capacity expansion in manufacturing industry will amount to almost 1,615 million U.S.$. The implied incremental capital-income ratio for this period thus amounts to 2.12 which can be called a normal value. Nevertheless it should not be forgotten that this ratio may be influenced by underutilization of capacity in the base year.

Also investment by sector will be considered in relation with the corresponding income increase. The relevant data can be found in appendices 3.II and 3.V respectively. The largest increase in value added is expected to take place in the chemical sector: nearly 152 million U.S.$. Two other sectors which show considerable income increases are the machinery and the food sector: 122 and 104 million U.S.$ respectively. Next come the petroleum products and textiles sectors which increase of 78 and 73 million U.S.$ respectively. The next largest increases in value added are expected to take place in the various metal sectors. The remaining sectors show much smaller income increases.

The largest investment is expected to take place in the food industry: 380 million U.S.$. Next come the chemical sector, the ferrous metals sector and the textiles sector: 324,225 and 200 million U.S.$ respectively. Investments in other sectors are expected to be much smaller. As has been said before, if differences in income increases among sectors do not lead to corresponding differences in investments, this will be reflected in the size of the capital-income ratios. In view of this, a number of capital-income ratios are shown in the following table.

Table 3.3.4

Incremental capital-income ratios for selected industries, 1964-1980

Sector	ICIR
Food	3.64
Textiles	2.73
Clothing	2.02
Pulp and paper	5.83
Rubber	1.92
Chemicals	2.13
Petroleum products	.89
Building materials	2.33
Ferrous metals	5.18
Non-ferrous metals	2.66
Metal products	.75
Machinery	.72
Total manufacturing	2.12

3.4 Tunisia

3.4.1 Value added

The manufacturing industry is, according to the projections of the sector experts, expected to expand in terms of value added by annual rates of growth of 7.6, 8.6 and 7.1 per cent during 1964-1970, 1970-1975 and 1975-1980 respectively. Shares of sub-sectors in the value added of manufacturing industry for the year 1964, 1970 and 1980 together with the corresponding annual rates of growth are presented in the table below. Figures have been derived from appendix 3.II.

Table 3.4.1

Shares in total value added of manufacturing industry covered by experts, 1964, 1970 and 1980; annual rates of growth of value added, 1964-1970, 1970-1975 and 1975-1980.

Sector	Shares			Rates of growth in percentages		
	1964	1970	1980	1964-1970	1970-1975	1975-1980
Food	41.5	34.3	26.5	4.5	5.3	4.6
Beverages	9.7	7.1	4.0	2.2	1.6	1.9
Tobacco	9.0	6.3	4.7	1.3	4.8	4.7
Textiles, clothing	8.6	10.3	11.4	10.7	8.7	9.3
Chemicals	10.5	19.4	19.1	19.1	9.5	5.8
Petroleum products	6.6	6.4	9.1	7.1	13.7	9.6
Building materials	4.5	5.0	5.9	9.6	10.3	8.8
Basic metals	1.0	2.1	3.6	22.0	20.3	7.4
Metal products	4.4	4.0	5.9	6.1	13.4	10.7
Machinery	.9	1.2	5.4	13.0	33.0	18.0
Transport equipment	.6	.6	.7	6.8	10.8	8.5
Other sectors	2.7	3.3	3.7			
Total manufacturing	100.0	100.0	100.0	7.6	8.6	7.1

In Tunisia the contribution of the various sub-sectors to manufacturing in terms of value added changes rather systematically over time. Three sectors, viz. food, beverages and tobacco, show a decreasing share in total manufacturing. Against a share for these three sectors together of 60.2 per cent in 1964 the share in 1980 only amounts to 35.2 per cent. The decrease in the sector beverages is most pronounced. All other identified sectors increase their share during the period 1964-1980, although not necessarily in all sub-periods. Textiles, basic metals and chemicals increase their share mainly during 1964-1970, whereas petroleum products, metal products and machinery show the highest rates of growth during 1970-1975. For basic metals and machinery the annual increase of the contribution to manufacturing industry is most pronounced. It should be emphasized, however, that both industries have relatively low levels of production in 1964.

3.4.2 Exports

It is projected that total exports of manufactured goods will grow by 9.7, 8.0 and 6.5 per cent annually during 1964-1970, 1970-1975 and 1975-1980 respectively. This implies an increase in the share of manufactured exports in total exports from 48.5 per cent in 1964 to 55.1 in 1970 and 57.8 in 1980.

It appears from the data in appendix 3.III that two product groups dominate the structure of manufactured exports in 1964: food products with a share of 56 per cent in total manufactured exports and beverages with a share of 25 per cent. Minor contributions come from chemicals (8.9 per cent) and non-ferrous metals (3.7 per cent).

During 1964-1970, 1970-1975 and 1975-1980, food exports are expected to grow annually by 9.2, 8.5 and 7.5 per cent respectively, so that its share in total manufactured exports still increases to almost 69 per cent in 1980. However, the rest of the export basket changes considerably. As wine exports are nearly stagnant, the share of beverages decreases to 8.2 per cent. Due to the rapid expansion of the chemical industry during the first sub-period, its share in exports increases to 16.2 per cent in 1980. Other important contributing industries in 1980 are: basic metals (7.9 per cent) and textiles and clothing (5.1 per cent). On the whole however, the food-processing industry remains by far the most important exporting manufacturing industry.

3.4.3 Imports

According to the projections of sector experts, total imports of manufactured goods are assumed to increase by 5.6, 4.6 and 6.0 per cent annually during the periods 1964-1970, 1970-1975 and 1975-1980 respectively. A comparison of these percentages with the corresponding growth rates for value added - section 3.4.1 - shows that during every sub-period the rate of expansion of manufactured imports lies below that of value added. Assuming the relation between value added and gross output to be fixed, this means that the ratio of imports to total supply (output plus imports) will decrease during the projection period, viz. from .262 in 1964 to .343 in 1970, .303 in 1975 and .297 in 1980.

Imports of manufactured goods are usually less concentrated in a few industrial sub-sectors than exports. Instead of presenting shares in total manufactured imports together with growth rates, it may therefore be more useful to present ratios of imports to total supply during the projection period as implied in the sector exports' estimates for the various industries. Table 3.4.3 summarizes these data which have been derived from appendices 3.I and 3.IV.

Table 3.4.3

Ratio of imports to total supply for selected industries, 1964, 1970, 1975 and 1980; shares in manufactured imports, 1980

Sector	Import ratio				Share
	1964	1970	1975	1980	1980
Food	.137	.159	.173	.181	19.3
Textiles	.536	.345	.225	.143	4.1
Clothing	.349	.348	.286	.222	1.6
Wood products	.992	.992	.992	.992	3.0
Pulp and paper	.864	.865	.868	.866	4.8
Rubber	.807	.572	.333	.130	.6
Chemicals	.457	.318	.256	.235	11.9
Petroleum products	.232	.167	.050	.0	.0
Building materials	.297	.116	.069	.047	.5
Ferrous metals	.968	.866	.373	.360	4.1
Non-ferrous metals	.316	.297	.346	.468	2.9
Metal products	.553	.502	.356	.354	4.7
Machinery	.929	.922	.785	.740	27.3
Transport equipment	.889	.912	.909	.913	15.0
Other sectors	less than .02				.2
Total manufacturing	.362	.343	.303	.297	100.0

For various sub-periods import substitution occurs for textiles, clothing, rubber, chemicals, petroleum products, building materials, ferrous metals, metal products and machinery. The high ratios for wood products, pulp and paper and transport equipment remain about constant over time. For food products and non-ferrous metals increasing import ratios have been projected. It may thus be concluded that import substitution is assumed to prevail in many manufacturing sub-sectors, especially during 1970-1975.

With respect to the absolute values of the various import ratios there are two striking phenomena worth mentioning. First, a relatively high number of sectors are extremely import-dependent in the first years of the projection period. Secondly, except for a few sectors, the import-substitution pattern during the projection period is such that either import ratios decrease strongly or remain about constant.

3.4.4 New fixed capital formation

Total new fixed capital formation in manufacturing industry during 1964-1980 has been projected by sector experts to amount to more than 670 million U.S.$. Value added in manufacturing industry is, for the same period, projected to increase by more than 290 million U.S.$. This means that an incremental capital-income ratio for manufacturing of 2.30 is implicit in the projections. This figure is reasonable, although it should not be forgotten that the increase in value added not only results from the assumed new investments, but also includes the effect of a better utilization of the existing capital stock.

As far as the distribution of new investments over the various sub-sectors is concerned, it can be expected that those sub-sectors for which high value-added increments are foreseen, also take up a high share in total capital formation in manufacturing industry. However, this picture may turn out somewhat different, due to variations among the sectoral capital-income ratios. For the most important sectors the coefficients are given in the table 3.4.4. Figures have been derived from appendices 3.II and 3.V.

The sectoral capital-income ratios indeed appear to influence the ranking of the sectors - see appendices 3.II and 3.V - except for the three largest sectors. In terms of value-added increments these are food products, chemicals and textiles with increases amounting to 58, 67 and 30 million U.S.$ respectively. Next come petroleum products (30 million U.S.$), several metal industries (ranging from 22 to 10 million U.S.$) and building materials (19 million U.S.$).

The three largest sectors in terms of capital formation are food products with 155 million U.S.$, chemicals with 130 million U.S.$ and textiles with 115 million U.S.$. However, for the other

sectors a change in ranking due to different sizes of the capital-income ratios occurs. Ferrous metals and building materials absorb relatively more investments, while machinery, metal products and petroleum products take up relatively less investments than would be expected on the basis of the value added ranking.

Again, the capital-income ratio for pulp and paper is extremely high. As the planned increase in production is very small, the volume of new investments taken up by pulp and paper is rather limited.

Table 3.4.4

Incremental capital-income ratios for selected industries, 1964-1980.

Sector	ICIR
Food	2.67
Textiles	3.83
Clothing	1.51
Pulp and paper	15.78
Rubber	2.12
Chemicals	1.95
Petroleum products	1.48
Building materials	2.62
Ferrous metals	9.19
Metal products	.83
Machinery	1.03
Transport equipment	.68
Total manufacturing	2.30

3.5 Libya

3.5.1 Value added

For the manufacturing industry in Libya annual rates of growth of 10.0, 18.1 and 10.1 per cent during 1964-1970, 1970-1975 and 1975-1980 respectively are implied in the projections of the sector experts. The following table gives the sectoral shares in value added for 1964, 1970 and 1980 together with the annual rates of growth of value added during the relevant time periods. Figures have been derived from appendix 3.II.

Table 3.5.1

Shares in total value added of manufacturing industry covered by experts, 1964, 1970 and 1980; annual rates of growth of value added, 1964-1970, 1970-1975 and 1975-1980.

Sector	Shares			Rates of growth in percentages		
	1964	1970	1980	1964-1970	1970-1975	1975-1980
Food	48.1	35.5	16.0	3.8	6.7	3.3
Beverages	4.4	5.1	2.9	12.7	7.4	7.8
Tobacco	6.0	5.8	4.2	9.4	11.5	9.4
Textiles, clothing	10.1	6.8	8.5	3.1	20.2	13.3
Chemicals	3.7	8.0	14.8	25.1	28.8	14.2
Petroleum products	--	9.0	21.5	.	36.9	13.4
Building materials	5.7	14.3	12.1	28.2	16.8	7.8
Basic metals	.7	1.5	2.5	25.1	31.3	8.7
Metal products	1.0	1.3	9.0	19.5	67.0	14.4
Machinery	6.3	4.0	4.1	1.8	18.5	10.7
Transport equipment	12.1	6.9	1.8	.0	.0	.0
Other sectors	1.9	1.8	2.6			
Total manufacturing	100.0	100.0	100.0	10.0	18.1	10.1

The share of food, beverages and tobacco in the industrial sector decreases considerably: from 58.5 per cent in 1964 to 23.1 per cent in 1980. Also the transport equipment industry becomes much less important: its share decreases from 12.1 per cent in 1964 to less than 2 per cent in 1980. This because no expansion of production at all has been projected. Considerable increases in shares are shown by chemicals, petroleum products, building materials and metal products. Also the annual rates of growth of value added in these sectors are very high. As will be seen in the next section this will be reflected in the annual rates of growth of exports of these sectors.

A striking feature of the projections is that in particular for the second period 1970-1975 considerable increases in production have been projected.

3.5.2 Exports

The exports of manufactures have been projected to grow at annual rates of 19.7, 52.0 and 17.2 per cent during the periods 1964-1970, 1970-1975 and 1975-1980 respectively. Impressive

increases indeed, but one should not forget that the basis figure is not far from zero. The share in total exports is nearly zero in 1964 and increases to 5.4 per cent in 1980.

The structure of the exports of manufactures is very undiversified in 1964 (see appendix 3.III). Food products 70 per cent, non-metallic mineral products 21 per cent, chemicals 5.8 per cent, rubber products 3.2 per cent while the shares of the other industries are all smaller than 1 per cent. According to the experts' projections this picture has changed completely in 1980. Although the exports of food products increase by 4.5, 2.1 and 5.9 per cent annually during 1964-1970, 1970-1975 and 1975-1980 respectively. The share in total exports of manufactures will amount to only 1.7 per cent in 1980. In that year exports of manufactures will account for 40.2 per cent of chemicals and for 51.3 per cent of petroleum products. Exports of chemicals are expected to grow by about 74.0, 58.5 and 14.8 per cent annually during the three relevant time periods. Exports of petroleum products will start only during the period 1970-1975 but will then grow by 20.1 per cent annually during 1975-1980.

3.5.3 Imports

In Libya, according to the sector experts, the imports of manufactures will grow by 18.0 per cent annually during 1964-1970, decrease by 1.9 per cent annually during 1970-1975 and increase again by 7.4 per cent in the period 1975-1980. The annual rates of growth of manufacturing industry during these periods - see 3.5.1 - are expected to be 10.0, 18.1 and 10.1 per cent respectively. This implies that the ratio of imports to total supply (output plus imports) of manufactured goods increases between 1964 and 1970, from .687 to .777, next decreases, to .595 in 1975 and to .570 in 1980. In other words: a process of import substitution is not expected to start before 1970. A table of sectoral import ratios and import shares in 1980, derived from appendices 3.I and 3.IV, is given below.

Table 3.5.3

Ratio of imports to total supply for selected industries, 1964, 1970, 1975, 1980; shares in manufactured imports, 1980

Sector	Import ratio				Share
	1964	1970	1975	1980	1980
Food	.360	.406	.390	.457	15.5
Textiles	.721	.833	.568	.371	3.0
Clothing	.610	.612	.610	.608	2.7
Wood products	.942	.947	.951	.950	.9
Pulp and paper	.508	.512	.513	.514	.3
Rubber	.982	.988	.500	.333	.6
Chemicals	.830	.621	.395	.302	4.8
Building materials	.623	.484	.173	.109	1.0
Ferrous metals	.982	.980	.756	.755	4.8
Non-ferrous metals	1.000	.674	.609	.600	1.9
Metal products	.922	.930	.525	.416	3.7
Machinery	.917	.980	.945	.942	39.9
Transport equipment	.851	.947	.951	.965	19.7
Other sectors					1.2
Total manufacturing	.687	.777	.595	.570	100.0

The values of the import ratios for 1980 show that in particular the wood products sector, the machinery sector and the transport equipment sector remain heavily import-dependent. Moreover, the number of sectors which according to the criterion (ratio $>.500$) must be called import-dependent still amounts to 7 in 1980. It can also be seen that, as has been already observed for total manufacturing industry, in most sectors the process of import substitution starts only after 1970. Finally, it can be observed that the clothing, wood products, pulp and paper and machinery sectors show no change in their respective ratios of imports to total supply over time, while the demand for products of the transport equipment sector becomes clearly more dependent on imports.

3.5.4 New fixed capital formation

The investments for capacity expansion in the manufacturing industry will amount to 450 million U.S.$ during 1964-1980. Value added in manufacturing industry is expected to increase by about 240 million U.S.$ during the same period, implying an incremental capital-income ratio of 1.88, a relatively low figure, which can be explained by the considerable investments in the petroleum products sector and which also may be influenced by a possible underutilization of capacity in the base year.

The largest income increases are expected in the petroleum products sector, the chemical sector, the building materials sector, the metal products sector and the food sector: 61, 40, 32, 25 and 24 million U.S.$ respectively (cf. appendix 3.II).

The largest investment will take place in the chemical sector: 111 million U.S.$, followed by the building materials sector, the petroleum products sector and the food sector: 85, 71 and 69 million U.S.$ respectively (cf. appendix 3.V).

The incremental capital-income ratios corresponding to the sectors where the largest income increases or the largest investments are expected are shown in the following table.

Table 3.5.4
Incremental capital-income ratios for selected industries, 1964-1980

Sector	ICIR
Food	2.85
Textiles	1.82
Clothing	1.04
Pulp and paper	3.98
Rubber	2.10
Chemicals	2.76
Petroleum products	1.17
Building materials	2.69
Ferrous metals	5.79
Metal products	.89
Machinery	1.09
Total manufacturing	1.88

3.6 The United Arab Republic

3.6.1 Value added

Sector experts have projected annual rates of growth for value added in manufacturing industry amounting to 11.1, 6.7 and 6.8 per cent during 1964-1970, 1970-1975 and 1975-1980, respectively. The shares of sub-sectors in the value added of manufacturing industry for the years 1964, 1970 and 1980 together with the annual rates of growth for the corresponding sub-periods are given in the following table. Figures have been derived from appendix 3.II.

Table 3.6.1

Shares in total value added of manufacturing industry covered by experts, 1964, 1970 and 1980; annual rates of growth of value added, 1964-1970, 1970-1975 and 1975-1980.

Sector	Shares			Rates of growth in percentages		
	1964	1970	1980	1964-1970	1970-1975	1975-1980
Food	35.9	33.9	25.1	3.5	3.3	3.3
Beverages, tobacco	5.5	5.5	4.4	4.3	4.1	4.2
Textiles, clothing	19.0	20.3	17.6	5.3	5.2	5.4
Chemicals	9.2	12.3	16.8	9.3	10.3	9.9
Petroleum products	9.1	8.7	8.1	3.3	6.0	5.9
Building materials	6.5	4.5	4.5	-2.0	5.7	7.5
Ferrous metals	3.0	2.1	3.9	-1.8	17.5	9.4
Non-ferrous metals	.7	1.2	1.4	14.7	10.8	5.6
Metal products	3.6	2.9	4.1	.4	10.2	10.7
Machinery	2.1	2.5	6.5	7.0	20.8	13.9
Transport equipment	1.4	1.2	2.9	2.1	18.1	14.8
Other sectors	4.0	4.9	4.7			
Total manufacturing	100.0	100.0	100.0	4.1	6.7	6.8

For the United Arab Republic the changes in structure of manufacturing industry, especially after 1970, may be classified as follows. Sectors which can be associated with the consumer-goods industries - food, beverages, tobacco, textiles and clothing - show a decreasing share in total manufacturing. On the other hand, sectors producing intermediate products - chemicals, ferrous and non-ferrous metals, metal products - or capital goods - machinery, transport

equipment - increase their shares in varying degree. The chemical sector e.g. grows fairly regularly, but non-ferrous metals are projected to increase mostly before 1975, whereas metal products grow mainly after 1970. During 1970-1975 very rapid increases are to be expected in ferrous metals, machinery and transport equipment.

3.6.2 Exports

Total exports of manufactured goods are expected to increase by 5.4, 8.7 and 8.6 per cent per annum during the periods 1964-1970, 1970-1975 and 1975-1980 respectively. As a result the share of manufactured exports in total exports increases from 12.9 per cent in 1964 (15.8 per cent if the Suez Canal receipts are excluded) to 17.7 per cent in 1970 and 20.6 per cent in 1980.

From the data in appendix 3.III it appears that the main exporting manufacturing sector is textiles and clothing, which contributes 62.7 per cent of total manufactured exports in 1964. Next come: petroleum products (15.5 per cent), food products (6.1 per cent), chemicals (6.0 per cent) and ferrous metals (2.6 per cent).

In 1980, however, this picture has completely changed. Textiles and clothing are still the most important contributors to manufactured exports, but their share has decreased to 31.5 per cent, because of the moderate rate of increase - less than 3 per cent annually - assumed throughout the whole period. On the other hand, a strong expansion is projected for the exports of chemicals (about 20 per cent per annum during 1970-1980), ferrous metals (especially before 1975) and non-ferrous metals (mainly after 1970), resulting in shares in total manufactured exports amounting to 19.2, 9.3 and 19.6 per cent respectively in 1980. Exports of petroleum products increase considerably between 1964-1970, but remain stable afterwards so that its share decreases to 7.6 per cent in 1980. Exports of food products grow by some 3.5 per cent annually reducing its share to 3.5 per cent in 1980. Finally, a steady increase in the exports of building materials is projected which raises its share to 5.2 per cent in 1980.

3.6.3 Imports

Total imports of manufactured goods are projected to increase by 8.6, 4.4 and 9.4 per cent per annum during the periods 1964-1970, 1970-1975 and 1975-1980 respectively. When these percentages are compared with the corresponding growth rates for value added in

section 3.6.1, the two series show a rather divergent pattern over time. Consequently, assuming a fixed relation between value added and gross output, the ratio of imports to total supply fluctuates considerably during the projection period: from .164 in 1964 to .201 in 1970, .186 in 1975 and .209 in 1980.

As imports of manufactured goods are usually less concentrated in a few industrial sub-sectors than exports, it may be more useful to present figures about the ratio of imports to total supply (output plus imports) by industrial sub-sectors, instead of giving shares in total manufactured imports together with growth rates. Data on the import ratios are implicit in the sector experts' projections and have been summarized below. All figures have been derived from appendices 3.I and 3.IV.

Table 3.6.3

Ratio of imports to total supply for selected industries, 1964, 1970, 1975 and 1980; shares in manufactured imports, 1980.

Sector	Import ratio				Share
	1964	1970	1975	1980	1980
Food	.125	.136	.188	.243	33.2
Textiles	.011	.013	.015	.017	1.3
Wood products	.873	.847	.823	.797	3.3
Pulp and paper	.233	.233	.233	.233	1.4
Rubber	.253	.222	.154	.111	.5
Chemicals	.289	.252	.179	.154	9.8
Petroleum products	.043	.0	.0	.0	.0
Building materials	.045	.066	.050	.039	.6
Ferrous metals	.331	.376	.211	.159	2.5
Non-ferrous metals	.102	.316	.388	.396	5.0
Metal products	.254	.407	.334	.359	5.7
Machinery	.717	.787	.644	.625	27.0
Transport equipment	.584	.695	.468	.466	9.7
Other sectors		less than .001			.0
Total manufacturing	.164	.201	.186	.209	100.0

It appears that the fluctuations in the overall import ratio are mainly caused by the projected behaviour of the import ratios in the metal industries together with the relatively strong increase in the ratio for the food sector during the final sub-period.

In a situation in which gross output expands, decreasing import ratios may be associated with import substitution. For various sub-periods this is projected to occur for wood products, (although only moderately), rubber, chemicals and petroleum products, and after 1970 for building materials, ferrous metals, machinery and transport equipment. Increasing ratios are projected for food products and non-ferrous metals, and, to a lesser extent, for textiles and metal products.

Finally, it will be clear from the values of the import ratios for the various industries that the scope for import substitution is less outspoken in the U.A.R. than in the other countries of the sub-region. This is also reflected in the overall import ratio for manufacturing which is the lowest of the sub-region.

3.6.4 New fixed capital formation

According to the projections of the sector experts, total new fixed capital formation in manufacturing industry during the period 1964-1980 will amount to almost 3,530 million U.S.$. The incremental capital-income ratio for manufacturing implicit in the projections thus appears to be 2.26. It should not be forgotten, however, that the increase in value added cannot solely be attributed to the projected new investments, but also includes the effects of a better utilization of the existing capital stock.

As to the distribution of new investments over the various sub-sectors, it can be expected that those sub-sectors for which high increases in value added have been projected, also take up considerable parts of total investments in manufacturing industry. However, differences among the sectoral capital-income ratios may change this picture to a certain extent. For the most important sectors these ratios are summarized below. Figures have been derived from appendices 3.II and 3.V (table 3.6.4 on page 3-26).

It appears from appendices 3.II and 3.V that the sectoral capital-income ratios indeed influence the ranking of the sectors. In terms of increases in value added, the largest increase takes place in chemicals with 346 million U.S.$, followed by food products and textiles with 253 and 208 million U.S.$ respectively. Next come machinery (149 million U.S.$), petroleum products (117 million U.S.$) and other metal industries.

The largest investment is projected to take place in the food sector with 920 million U.S.$. Chemicals and textiles take 700 and 435 million U.S.$ respectively. Other important sectors are: ferrous metals (385 million U.S.$), building materials (284 million U.S.$), pulp and paper (148 million U.S.$) and the other metal industries. The change in ranking is evident and clearly shows the influence of the size of the capital-income ratios.

Table 3.6.4

Incremental capital-income ratios for selected industries, 1964-1980

Sector	ICIR
Food	3.64
Textiles	2.09
Clothing	.98
Footwear	.95
Pulp and paper	5.95
Rubber	2.11
Chemicals	2.02
Petroleum products	.89
Building materials	5.93
Ferrous metals	5.45
Non-ferrous metals	4.33
Metal products	.88
Machinery	.91
Transport equipment	.65
Total manufacturing	2.26

3.7 Sudan

3.7.1 Value added

The annual rates of growth of value added in manufacturing industry implied in the peojections of the sector experts amount to 8.2, 8.2 and 7.6 per cent during 1964-1970, 1970-1975 and 1975-1980 respectively. The shares in value added of the manufacturing sector by sub-sector for the relevant years together with the corresponding rates of growth can be found in the following table. Figures have been derived from appendix 3.II.

Table 3.7.1
Shares in total value added of the manufacturing industry covered by experts, 1964, 1970 and 1980; annual rates of growth of value added, 1964-1970, 1970-1975 and 1975-1980.

Sector	Shares			Rates of growth in percentages		
	1964	1970	1980	1964-1970	1970-1975	1975-1980
Food	77.8	65.0	44.4	4.9	3.5	3.9
Beverages	3.2	2.5	1.7	3.8	3.7	3.7
Tobacco	1.0	1.5	1.3	15.6	6.8	5.4
Textiles, clothing	6.7	10.3	16.6	16.5	16.0	10.0
Chemicals	3.8	4.9	12.6	12.6	23.3	13.9
Petroleum products	--	6.3	5.7	.	7.0	6.5
Building materials	1.3	2.9	4.3	23.1	12.2	11.7
Basic metals	--	.4	1.5	.	33.9	10.5
Metal products	2.1	1.9	4.0	6.1	20.9	12.2
Machinery	.6	.4	2.2	.5	33.0	25.2
Transport equipment	--	--	2.2	--	.	20.7
Other sectors	3.5	3.9	3.5			
Total manufacturing	100.0	100.0	100.0	8.2	8.2	7.6

In 1964 the structure of production was very one-sided: food, beverages and tobacco 82.0 per cent, textiles 6.7 per cent, chemicals 3.8 per cent and machinery 21 per cent. In 1980 this picture is expected to have changed. Food beverages and tobacco will amount to about 47 per cent of value added in manufacturing industry. Other important contributing sectors are then: textiles and clothing with 16.6 per cent and chemicals with 12.6 per cent. In addition sectors like petroleum products, building materials and metal products will play some role. The projected rates of growth for the chemical and metal sectors are generally very high, but again one should remember that the levels of production in the base year are very low.

3.7.2 Exports

The projected annual rate of growth of manufactured exports is consistently high through the three relevant time-periods: 22.6, 25.2 and 21.6 per cent, respectively. As a result the share of manufactures in total exports will rise from 1 per cent in 1964 to 2.7 per cent in 1970 and further to 15.1 per cent in 1980.

In 1964 the exports of manufactures of Sudan consisted of mainly one single group of products: food products which contributed 91.4 per cent of these exports (see appendix 3.III). Between 1964 and 1980 exports of food products increase by 16.2, 23.5 and 22.9 per cent annually during 1964-1970, 1970-1975 and 1975-1980 respectively. It is projected that the share of textiles in total manufactured exports will be 17.3 per cent which is mainly due to a rate of growth of exports of about 55 per cent annually during 1970-1975. Machinery is expected to be another important export category in 1980 when its share in manufactured exports will amount to 8.7 per cent.

3.7.3 Imports

According to the sector experts imports of manufactures will grow by 1.3, 6.7 and 5.9 per cent annually during 1964-1970, 1970-1975 and 1975-1980 respectively. With annual rates of growth of value added in manufacturing industry projected as 8.2, 8.2 and 7.6 per cent respectively - see 3.7.1 - this implies that the ratio of imports of total supply (output plus imports) for the manufacturing industry will decrease between 1964 and 1970 from .340 to .276 and next remain more or less constant: .277 in 1975 and .278 in 1980. In other words: in Sudan some import substitution in the manufacturing industry is expected to take place between 1964 and 1970, but not during later time periods.

Information on the values of the import ratios for the various sectors of manufacturing industry can be found in the following table. Figures have been derived from appendices 3.I and 3.IV.

Table 3.7.3

Ratio of imports to total supply for selected industries, 1964, 1970, 1975 and 1980; shares in manufactured imports, 1980

Sector	Import ratio				Share
	1964	1970	1975	1980	1980
Food	.092	.067	.122	.119	21.5
Textiles	.671	.474	.231	.107	3.2
Clothing	1.000	.400	.175	.091	.6
Wood products	.688	.672	.662	.654	2.5
Pulp and paper	.688	.686	.687	.701	1.0
Rubber	1.000	1.000	1.000	.655	2.0
Chemicals	.699	.659	.443	.317	10.9
Petroleum products	1.000	.0	.0	.0	.0
Building materials	.763	.298	.147	.104	.8
Ferrous metals	1.000	.924	.694	.701	4.9
Non-ferrous metals	1.000	.550	.556	.607	2.1
Metal products	.708	.664	.369	.326	2.6
Machinery	.970	.980	.942	.888	27.0
Transport equipment	1.000	1.000	.904	.861	20.5
Other sectors					.3
Total manufacturing	.340	.276	.277	.278	100.0

The table shows that in 1964 in 6 sectors the demand for their products has to be fully satisfied through imports. The number of sectors for which the corresponding import ratio is larger than .5 amounts in that year even to 13. In 1980 the latter number has come down to 7 while a complete import dependence does no more appear in any sector. For petroleum products the picture is expected to be completely reversed: complete dependence on imports in 1964 and complete independence from imports in 1970 and later years.

3.7.4 New fixed capital formation

In Sudan the investments for capacity expansion in the manufacturing industry will amount to almost 710 million U.S.$ during 1964-1980. In the same period value added will increase by more than 250 million U.S.$. This implies an incremental capital-income ratio of 2.83. By far the largest income increase is expected

to take place in the food sector: 79 million U.S.$, followed by the chemical sector, the textiles sector and the petroleum products sector: 40, 39 and 20 million U.S.$. Also the income increases in the building materials sector, the clothing sector and the metal products sector are substantial: 14, 12 and 12 million U.S.$ respectively (Cf. appendix 3.II).

By far the largest part of investment will be made in the food sector: 299 million U.S.$. Another important sector in this respect is the textiles sector: 175 million U.S.$. This is followed by the chemical sector, the petroleum products sector, the building materials sector and the ferrous metals sector: 92, 35, 35 and 20 million U.S.$ (Cf. appendix 3.V).

Finally the table of capital-income ratios corresponding to important income increases or investments is given below.

Table 3.7.4

Incremental capital-income ratios for selected industries, 1964-1980

Sector	ICIR
Food	3.99
Textiles	4.45
Clothing	.96
Pulp and paper	8.06
Rubber	4.10
Chemicals	2.27
Petroleum products	1.75
Building materials	2.61
Ferrous metals	4.44
Non-ferrous metals	2.56
Metal products	.73
Machinery	1.25
Transport equipment	.58
Total manufacturing	2.83

4. Consistency and confrontation of projections[N]

4.1 Introduction

In the two preceding chapters different types of projections with regard to the industrialization process in the six countries of the North-African sub-region have been presented. Chapter 2 includes the main macro-economic data of the projected economic development up till 1980 estimated in the so-called second and third stages of projection. Chapter 3 presents projections for the various manufacturing sub-sectors, based on the outcome of the provisional macro-economic estimates. Such a procedure, of course, does not imply that the consistency between the macro and sector projections will be obtained at once. Therefore, this chapter has been included to investigate and to evaluate the consistency of the various projections.

This chapter summarizes the results of a second round of checking data. During the first round an effort has been made to examine all sector reports critically, to check the sector projections against the provisional macro-economic projections supplied to the experts, to find out to what extent experts had covered those activities they were supposed to cover, whether the reports contained the information necessary in order to be included in this report, etc. As a result, especially with regard to quantitative information, many reports were corrected, revised or supplemented with additional data. Only after this work was completed, chapter 3 was written, and the confrontation and, where possible, consistency checking of relevant economic data could start.

First, it will be investigated whether for the base year 1964 mining and manufacturing as a whole have been covered in a satisfactory way, and, if not, which sectors are mainly responsible for gaps in coverage. Secondly, the rate of expansion of manufacturing (including mining) resulting from the macro-economic projections will then be compared with the corresponding growth rates derived from the projections of the sector experts. In case the two rates turn out to be different the effect on the rate of growth of GDP is calculated. Thirdly, the projected behaviour of manufactured imports and exports will be confronted

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N This chapter can be skipped by readers not interested in an evaluation of the consistency of the various estimates on which the report is based.

Projections for mining show less similarities than those for manufacturing, although some common features, related to the depletion of existing mines or wells, can be observed in the United Arab Republic and Libya.

Differences between macro and experts' projections among countries hardly show any systematic pattern during the period 1970-1975. However, during the period 1964-1970 experts' projections generally exceed the macro estimates. Favourable developments in the oil sector, which could be incorporated in the experts' estimate of the mining sector for 1970, are the main explanation of these overestimations. The slow-down of the growth rates of manufacturing during the period 1975-1980 observed earlier explains negative differences dominating this period.

As to individual countries, for Morocco the experts' estimates have been rather optimistic compared to the macro projections. The experts' percentages in the macro-economic framework would thus lead to somewhat higher growth rates for GDP, in particular during the second sub-period. For the Sudan experts' projections correct an evident irregularity in the macro-economic framework during the second sub-period. During the other two periods differences are negligible.

In the remaining four countries the development of the oil sector explains to a large extent the differences between the experts' and macro projections. In Algeria relatively moderate increases in the oil production during the first and the third sub-period partly explain the differences, another factor is that projected rates of growth for manufacturing are slightly too low to sustain the projected increase in GDP. Both in Tunisia and the United Arab Republic the sudden exploitation of new oil wells causes an increase in GDP, not foreseen to this extent in the estimates of the macro-economic data for 1970. Although differences are small during the other two sub-periods, the projected rates of growth for manufacturing in the United Arab Republic seem rather low.

Finally, the case of Libya illustrates clearly the difficulties of estimating the future development of an economy which is largely dominated by the oil sector. A strong decrease in the rate of expansion in oil production projected by the experts would suggest a rate of growth of GDP of 5 and 5.5 per cent annually during the second and the third sub-periods, respectively. Whether these growth rates are more reliable than those in the macro-projection is difficult to judge.

with the projections for total imports and exports included in the macro-economic framework. Some attention will also be given to the projected development of manufactured exports in relation to the expected expansion of the manufacturing industry. Fourthly, the proposed investment programme will be considered, especially the implied incremental capital-income ratios. As the above mentioned confrontations are mostly of a similar nature for all countries of the sub-region, these confrontations will be dealt with item by item rather than country by country. This will be done in section 4.2.

A final question to be investigated is whether all projections for the mining and manufacturing sub-sectors are mutually consistent, even if the aggregated totals of the mining and manufacturing sectors fit into the macro-economic framework. In order to investigate this consistency an input-output exercise has been carried out for the six countries of the sub-region for the years 1964 and 1980. Section 4.3 includes a short review of this exercise and a summary of the main conclusions.

Anticipating the more detailed conclusions given in the next sections, it can be stated that generally confrontation and consistency-checking led to satisfactory results, no major corrections in the macro-stage being necessary. Even at the sectoral level the number of necessary corrections was limited. Partly this will be due to the process of examining data in advance as mentioned above, on the other hand, many experts have regularly been consulting each other and those responsible for the macro projections, so that obvious inconsistencies could be avoided from the very beginning.

4.2 Confrontations at the disaggregated macro-level

To facilitate the various confrontations six tables containing all relevant data for each of the six countries in the sub-region have been included in this section (pp.4 - 7 to 4.-12).

4.2.1 Base year coverage

Tables 4.2.1 - VI show that for the mining sector experts have correctly estimated its value of output for Morocco, Tunisia and the United Arab Republic. Both in Algeria and Libya the experts' estimates differ from the sector data derived from the national accounts. Especially for Algeria the difference is quite substantial.

For the manufacturing sector correct estimates have been made for Morocco and Libya. Experts have underestimated its size somewhat in Tunisia and the United Arab Republic, whereas for the Sudan manufacturing seems to be somewhat overestimated. Again the difference in Algeria is very large, but, when mining and manufacturing are taken together, differences almost vanish. Given the fact that the national accounts estimates for Algeria are subject to certain weaknesses in 1964 and recalling the relatively low share of manufacturing in GDP compared to other countries mentioned in section 1.4, it may be assumed that most probably part of the gap in manufacturing can be explained by an inadequate coverage of manufacturing in the national accounts.

As to manufacturing sub-sectors, inspection of individual sectors revealed that in most countries value added in the food sector has been overestimated, whereas in the building materials sector and parts of the metal sectors value added has been underestimated. Further, the sectors leather, footwear, pulp and paper, and in particular wood products and furniture apparently have not been covered completely.

4.2.2 Projected growth rates for mining and manufacturing

Rates of growth for manufacturing plus mining derived from the macro-economic projections, experts' estimates, and the effects on the rate of growth of GDP can be found in table 4.2.I - IV.

A comparison of the six tables shows striking similarities in the pattern of experts' projections for manufacturing. From the first to the second sub-period the annual rates of growth are projected to increase, except for Sudan where the rates remain the same. From the second to the third sub-period, however, except for the United Arab Republic, the rates of growth decrease, in three out of six countries even below their value during the first sub-period. An explanation for this phenomenon may be that experts have proposed no more new projects during the last few years preceding 1980, but rather have planned for increasing the rate of utilization of the existing capacity, in many cases up to its maximum. If this is true, the incremental capital-income ratio should show a marked decrease during the final sub-period.

4.2.3 Foreign trade in manufactured products

The data on exports included in tables 4.2.I - VI show that generally exports of manufactured goods have been projected to grow faster than total exports. As a result the share of manufactures in total exports increases steadily in most of the countries. With respect to the growth rates during the three sub-periods similar movements as for value added can be observed. The slow-down in the rates of growth during the final sub-period is here the most remarkable phenomenon. Moreover, in many cases the changes in growth are more pronounced for exports than for value added in manufacturing industry. In Morocco, Tunisia and partly in Algeria developments are such that the growth elasticity of exports with regard to value added in manufacturing industry decreases over time from values larger than 1 to values smaller than 1. For Libya, the United Arab Republic and Sudan these elasticities remain larger than 1 throughout the projection period, but invariably with lower values during the third than during the second sub-period.

Except for the United Arab Republic, the projected development of the ratio of manufactured imports to the total supply of manufactured products decreases during the projection period due to import substitution in various manufacturing sub-sectors. It will be clear from the data in the tables that such a decrease in the import ratio does not necessarily imply a decreasing share of manufactured goods in total imports.

4.2.4 Incremental capital-income ratios

In section 4.2.2 it has been assumed that during the period 1975-1980 experts most probably have projected increasing rates of utilization of capacity, which, in turn, would lead to a decrease in the incremental capital-income ratios compared to the preceding sub-period. Table 4.2.4.1 presents these ratios for the three sub-periods distinguished in the projections. In each of the six countries the incremental capital-income ratio is indeed substantially lower during the period 1975-1980 than in the period 1970-1975. Moreover, in three out of six countries the value of the incremental capital-income ratio during the period 1964-1970 is also lower than during the next period. This phenomenon would suggest that many experts have first planned for a better utilization of the existing 1964 capacity, before proposing new units of production and hence new capital formation.

Table 4.2.4.1 also shows incremental capital-income ratios for Libya and Sudan deviating to some extent from the other countries in the sub-region. Inspection of the basic data showed, however, that these deviations can be fully explained by the composition of new investments by sub-sectors.

Finally, a summary of the incremental capital-income ratios for selected manufacturing sub-sectors in the six countries of the sub-region is given in talbe 4.2.4.2. On the whole, variations among countries are not discouraging in view of the differences among manufacturing sub-sectors.

Table 4.2.4.1

Incremental capital-income ratios for manufacturing industry in the six countries of the North-African sub-region during different periods of time from 1964 to 1980

Country	1964-1970	1970-1975	1975-1980	1964-1980
Morocco	2.42	2.77	1.71	2.24
Algeria	2.36	2.29	1.86	2.12
Tunisia	2.20	2.54	2.16	2.30
Libya	1.86	2.31	1.49	1.88
U.A.R.	3.08	2.50	1.74	2.26
Sudan	3.59	3.29	2.14	2.83

Table 4.2.4.2

Incremental capital-income ratios for selected manufacturing sub-sectors in the six countries of the North-African sub-region, 1964-1980.

Sector	Morocco	Algeria	Tunisia	Libya	U.A.R.	Sudan
Food	4.31	3.64	2.67	2.85	3.64	3.99
Textiles	1.05	2.73	3.83	1.82	2.09	4.45
Clothing	.64	2.02	1.51	1.04	.98	.96
Footwear		.60	.54		.95	.75
Wood products	1.75	1.07	.80	.94	3.52	1.37
Furniture	.61	.56	.60	.58	.49	.60
Pulp and paper	12.82	5.83	15.78	3.98	5.95	8.06
Rubber	2.78	1.92	2.12	2.10	2.11	4.10
Chemicals	2.22	2.13	1.95	2.76	2.02	2.27
Petroleum products	1.42	.89	1.48	1.17	.89	1.75
Building materials	2.61	2 33	2.62	2.69	5.93	2.61
Ferrous metals	8.44	5.18	9.19	5.79	5.45	4.44
Non-ferrous metals	5.59	2.66			4.33	2.56
Metal products	.89	.75	.83	.89	.88	.73
Machinery	.99	.72	1.03	1.09	.91	1.25
Transport equipment	.77	.93	.68		.65	.58
Total manufacturing	2.24	2.12	2.30	1.88	2.26	2.83

Table 4.2.1 Confrontation of macro-economic and sector experts' projections for Morocco for selected variables. Values in millions of U.S. dollars at constant 1964 market prices

	Values				Annual rates of growth in percentages		
	1964	1970	1975	1980	1964-1970	1970-1975	1975-1980
Data from macro-economic framework							
Mining, value added	123						
Manufacturing, value added	328						
Mining and manufacturing	451	568	700	933	3.9	4.3	5.9
Exports	518	621	720	872	3.1	3.0	3.9
Imports	518	621	787	1,020	3.1	4.9	5.3
Data from sector experts							
Mining, value added	124	145	185	229	2.8	4.2	4.4
Manufacturing, value added	316	459	665	924	6.4	7.7	6.8
Mining and manufacturing	440	604	850	1,153	5.4	7.1	6.3
Effect on the growth rate of G.D.P.					+.3	+.6	+.1
Export of mining products	153	170	214	266	1.8	4.7	4.4
Export of manufactured products	104	159	226	287	7.4	7.3	4.9
Item, share in total exports	.201	.256	.314	.329			
Import of mining products	15	24	46	75	7.5	13.9	10.5
Import of manufactured products	351	498	650	925	6.0	5.6	7.3
Item, ratio to total supply	.281	.283	.262	.269			

Table 4.2.II Confrontation of macro-economic and sector expert's projections for Al eria for selected variables. Values in millions of U.S. dollars at constant 1964 market prices

	Values				Annual rates of growth in percentages		
	1964	1970	1975	1980	1964-1970	1970-1975	1975-1980
Data from macro-economic framework							
Mining, value added	438						
Manufacturing, value added	203						
Mining and manufacturing	641	1,072	1,533	2,256	8.9	7.4	8.0
Exports	750	1,094	1,499	2,102	6.5	6.5	7.0
Imports	870	1,269	1,756	2,463	6.5	6.7	7.0
Data from sector experts							
Mining, value added	345	474	663	815	5.5	7.0	4.2
Manufacturing, value added	312	489	747	1,072	7.8	8.9	7.6
Mining and Manufacturing	657	963	1,410	1,887	6.6	7.9	6.0
Effect on the growth rate of G.D.P.					-.6	+.1	-.5
Export of mining products	468	636	867	1,044	5.3	6.3	3.7
Export of manufactured products	162	218	353	454	5.1	10.0	5.2
Item, share in total exports	.216	.199	.235	.216			
Import of mining products	1	2	8	13	14.2	30.2	10.8
Import of manufactured products	525	535	630	895	.3	3.4	7.3
Item, ratio to total supply	.375	.294	.244	.245			

Table 4.2.III Confrontation of macro-economic and sector experts' projections for Tunisia for selected variables. Values in millions of U.S. dollars at constant 1964 market prices

	Values				Annual rates of growth in percentages		
	1964	1970	1975	1980	1964-1970	1970-1975	1975-1980
Data from macro-economic framework							
Mining, value added	16						
Manufacturing, value added	147						
Mining and Manufacturing	163	256	381	542	7.8	8.3	7.3
Exports	161	245	343	482	7.2	7.0	7.0
Imports	257	322	410	558	3.8	4.8	6.4
Data from sector experts							
Mining, value added	15	59	74	98	25.7	4.6	5.0
Manufacturing, value added	128	199	299	420	7.6	8.6	7.1
Mining and Manufacturing	143	258	373	518	10.3	7.6	6.8
Effect on the growth rate of G.D.P.					+.6	-.2	-.1
Export of mining products	18	67	76	100	23.9	2.7	5.7
Export of manufactured products	78	135	199	273	9.7	8.0	6.5
Item, share in total exports	.484	.551	.580	.566			
Import of mining products	9	3	6	7	-16.4	13.3	4.7
Import of manufactured products	211	293	366	492	5.6	4.6	6.0
Item, ratio to total supply	.362	.343	.297				

Table 4.2.IV Confrontation of macro-economic and sector experts' projections for Lybia for selected variables. Values in millions of U.S. dollars at constant 1964 market prices

	Values				Annual rates of growth in percentages		
	1964	1970	1975	1980	1964-1970	1970-1975	1975-1980
Data from macro-economic framework							
Mining, value added	505						
Manufacturing, value added	43						
Mining and manufacturing	548	1,778	2,470	3,641	21.7	6.8	8.1
Exports	658	1,784	2,042	2,177	18.0	2.7	1.3
Imports	451	915	1,326	1,945	13.0	8.0	8.0
Data from sector experts							
Mining, value added	434	1,568	1,764	1,960	23.8	2.5	2.1
Manufacturing, value added	43	75	174	282	10.0	18.1	10.1
Mining and manufacturing	477	1,643	1,938	2,242	22.9	3.4	3.0
Effect on the growth rate fof G.D.P.					+.8	-2.1	-2.8
Export of mining products	606	2,232	2,485	2,734	24.3	2.1	1.9
Export of manufactured products	1	4	53	117	19.7	52.0	17.2
Item, share in total exports	.002	.002	.026	.054			
Import of mining products	0	7	8	9		2.8	2.1
Import of manufactured products	268	724	657	941	18.0	-1.9	7.4
Item, ratio to total supply	.687	.777	.595	.570			

Table 4.2.V Confrontation of macro-economic and sector experts' projections for the United Arab Republic for selected variables. Values in millions of U.S. dollars at constant 1964 market prices

	Values				Annual rates of growth in percentages		
	1964	1970	1975	1980	1964-1970	1970-1975	1975-1980
Data from macro-economic framework							
Mining, value added	55						
Manufacturing, value added	1,176						
Mining and anufacturing	1,231	1,470	2,197	3,264	3.0	8.4	8.2
Exports	970	973	1,362	1,910	.0	7.0	7.0
Imports	1,145	1,305	1,675	2,273	2.2	5.1	6.3
Data from sector experts							
Mining, value added	55	206	412	620	24.7	14.9	8.6
Manufacturing, value added	1,087	1,384	1,914	2,657	4.1	6.7	6.8
Mining and anufacturing	1,142	1,590	2,326	3,277	5.7	7.9	7.1
Effect on the growth rate of G.D.P.					+.7	-.1	-.3
Export of mining products	34	151	386	611	28.5	20.7	9.6
Export of manufactured products	125	172	261	394	5.4	8.7	8.6
Item, share in total exports	.129	.177	.191	.206			
Import of mining products	81	15	36	50	-24.4	18.9	7.0
Import of manufactured products	608	994	1,238	1,937	8.6	4.4	9.4
Item, ratio to total supply	.164	.200	.186	.209			

Table 4.2.VI Confrontation of macro-economic and sector experts' projections for Sudan for selected variables. Values in millions of U.S. dollars at constant 1964 market prices

	Values				Annual rates of growth in percentages		
	1964	1970	1975	1980	1964-1970	1970-1975	1975-1980
Data from macro-economic framework							
Mining, value added	1						
Manufacturing, value added	93						
Mining and manufacturing	94	154	195	281	8.6	4.8	7.5
Exports	229	251	304	385	1.6	3.9	4.8
Imports	264	254	334	498	- .6	5.6	8.3
Data from sector experts							
Mining, value added	0	0	0	0			
Manufacturing, value added	104	166	244	350	8.2	8.2	7.6
Mining and manufacturing	104	166	244	350	8.2	8.2	7.6
Effect on the growth rate of G.D.P.					.0	+.4	.0
Export of mining products	0	0	0	0			
Export of manufactured products	2	7	22	58	22.6	25.2	21.6
Item, share in total exports	.009	.028	.072	.151			
Import of mining products		14	19	25	49.1	5.9	6.3
Import of manufactured products	237	257	355	471	1.3	6.7	5.9
Item, ratio to total supply	.340	.276	.277	.278			

4.3 Confrontations at the sectoral level

For some 25 mining and manufacturing sectors projections for the period 1964-1980 have been made, for gross output, imports, deliveries to other sectors of production and deliveries for final demand such as exports, consumption and gross capital formation. However, in reality these variables are not independent of each other, because of the intermediate deliveries of goods and services among sectors. Thus, the level of production in the chemical sector does not only depend on the final demand for chemicals, but also on the amount of chemical products required in the production processes of other industries and in its own production process. In producing all these products the chemical industry will certainly require inputs from various other industries, which, in turn, create additional demand for products of the chemical sector. In general, the production level in one industry also depends on the production levels in other industries. This implies that the correct levels of production for all industries should be determined simultaneously.

For practical reasons such a procedure is not always possible and experts will make their own assumptions about the production levels in other industries. The correctness of these assumptions determines to what extent the final outcome will be subject to certain inconsistencies.

To test the consistency of the projected development of output, imports and final demand for the mining and manufacturing sectors, projections for the rest of the economy, covering agriculture, construction, energy and services, had to be included. The consistency test was carried out as follows. As a starting point values on production (gross output) and imports were fixed so that total resources could be considered as given. The technical relations defining the input structure of every industry, together with the production levels in the various industries now determine which part of resources will be required by the productive sectors in the form of intermediate deliveries. Subtracting the total amount of intermediate deliveries from the available resources leaves for each sector a certain amount of products to satisfy final demand. These calculated values of final demand can now be compared with the final demand according to the experts' projections. Differences between the two indicate the degree of inconsistency.

It will be understood from what has been said above that the availability of a complete input structure for each of the six countries in 1964 and 1980 is a condition sine qua non for the whole exercise. On the basis of information supplied by the sector experts, input coefficients for all sectors have been calculated, often after aggregating several product groups distinguished within a sector. In this way six matrices of input coefficients were obtained for 1964 and six other matrices for 1980. Differences between 1964 and 1980 are the result of, on the one hand, assumed changes in technology and, on the other hand, projected changes in product-mix.

Generally, the results were not unsatisfactory[a]. The main inconsistencies could be located as follows. First, sectors of which the inadequate coverage was known often failed to satisfy final demand. Inconsistencies of this type could be easily removed by raising production and imports.

Secondly, in many countries the high levels of intermediate deliveries of the sectors coal mining, petroleum mining and petroleum and coal products caused that computed final demand levels turned out to be negative. However, final demand in the energy sector considerably surpassed expectations, so that most probably the interrelations of the various sectors linked to the energy have not been correctly taken into account.

Finally, in the sectors of building materials and machinery the projected production levels proved to be too low to cover all demand. However, inspection of technical coefficients should that in the consistency check intermediate demand has probably been overestimated as a result of too high deliveries of building materials to construction and too high internal deliveries in the machinery sector.

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[a] Because of the size of the tables involved no reproduction of the full results is given here. For those interested in specific result results tables can be made available on request.

Appendix 2.1

Projection model for Morocco, Tunisia and the United Arab Republic

List of variables and parameters

To describe the model the following variables and parameters will be used.

Variables:

Y : gross domestic product (income)
C : total consumption
C^P : private consumption
C^g : government consumption
I : gross capital formation
E : exports of goods and services
E^h : export of good/service h
M : imports of goods and services
M^C : imports of consumption goods
M^I : imports of capital goods
M^R : imports of raw materials and semi-finished products
M^S : imports of services
S : gross (domestic) savings
R : net factor income plus net current transfers (donations)
D : deficit on current account (net inflow of foreign capital)

Barred variables indicate absolute levels. Variables without a bar are changes over time with respect to the level of a variable in year t. E.g. the change in income during a period starting at year t and ending at year t + 4 can be written as $\bar{Y}_{t+4} - \bar{Y}_t = Y_{t+4}$

Parameters:

$\varkappa$: marginal capital-income ratio

μ : marginal import ratio

μ^C : marginal import ratio for consumption goods

μ^I : marginal import ratio for capital goods

μ^R : marginal import ratio for raw materials etc.

μ^S : cumulative growth rate of imported services

ζ : cumulative growth rate of exports

ζ^h : cumulative growth rate of export of good/service h

p : cumulative growth rate of new factor income plus net current transfers

π : cumulative growth rate of government consumption

σ : marginal savings ratio

Every cumulative growth rate Φ is defined as $\Phi = (1+\Phi')^{\vartheta}-1$, where Φ' is the annual rate of growth and ϑ the length of a period starting at year t and ending at year $t+\vartheta$.

Model I:

Assuming that (1) capital is the only scarce factor,

(2) a time lag of one year exists between capital formation and the increase in income,

(3) the existing capital stock is fully utilized,

(4) variables represent changes over a period of five years ($\vartheta = 5$), and

(5) investment increases linearly over time,

a production function can be written as:

(1) $\varkappa Y_5 = \sum_{t=0}^{4} \bar{I}_t = 5\,\bar{I}_o + 10\,\Delta I$

Where $\Delta I = \bar{I}_{t+1} - \bar{I}_t$, $t=0,\ldots,4$

By definition

(2) $I_5 = (\bar{I}_o + 5\,\Delta I) - \bar{I}_o$

Because each barred variable refers to base year t=0 and each change takes place during the period from t=0 to 5=5, time indices may be omitted. Hence, the relationship between the increase in investments and the increase in income reads as follows:

(3) $I = 0.5\ \eta Y - 2.5\ \bar{I}$

(4) $S = \sigma Y$

(5) $M^C = \mu^C C$

(6) $M^I = \mu^I I$

(7) $M^R = \mu^R Y$

(8) $M^S = \mu^S \bar{M}^S$

(9) $M = M^C + M^I + M^R + M^S$

Imports of goods have been subdivided by end use; imports of services show an autonomous rate of growth.

(10) $E = \bar{E}$, derived from $\sum E^h = \sum \varepsilon^h \bar{E}^h$

(11) $I = S + D$

(12) $D = M - E - \rho \bar{R}$

Factor payments plus current transfers are added, showing an autonomous rate of growth.

(13) $Y = C + I + E - M$

(14) $C^g = \pi \bar{C}^g$

(15) $C^P = C - C^g$

Consumption has been subdivided by private and public use, the latter showing an autonomous growth rate. Private consumption has a residual character in the model.

The projection model consists of 13 equations in 13 endogenous variables and is thus completely determined. Some important reduced form equations[1/] are:

(16) $$Y = \frac{2.5(1-\mu^I)\bar{I} + \mu^S \bar{M}^S - \varepsilon \bar{E} - (1-\mu^C)\rho \bar{R}}{0.5\eta(1-\mu^I) - \sigma(1-\mu^C) - (\mu^C + \mu^R)}$$

1/ Actually eqs. (17)-(19) become reduced form equations only after eq. (16) has been substituted for Y.

(17) $M = \{ \mu^C(1-\sigma) + 0.5\kappa\mu^I + \mu^R \} Y - 2.5\mu^I\bar{I} + \mu^S\bar{M}^S + \mu^C\rho\bar{R}$

(18) $C = (1-\sigma)Y + \rho\bar{R}$

(19) $D = (0.5\kappa - \sigma)Y - 2.5\bar{I}$

Model II: Model I without eq. (10). Target increase in income: Y^{Δ}.

Some reduced form equations:

(20) $E = -\{0.5\kappa(1-\mu^I) - \sigma(1-\mu^C) - (\mu^C + \mu^R)\} Y^{\Delta} + 2.5(1-\mu^I)\bar{I} + \mu^S\bar{M}^S - (1-\mu^C)\rho\bar{R}$

(21) $M = \{\mu^C(1-\sigma) + 0.5\kappa\mu^I + \mu^R\} Y^{\Delta} - 2.5\mu^I\bar{I} + \mu^S\bar{M}^S + \mu^C\rho\bar{R}$

(22) $D = I - S = (0.5\kappa - \sigma)Y^{\Delta} - 2.5\bar{I}$

Model III: model I without eq.(4) Target increase in income: Y^{Δ}.

Some reduced form equations[2/]:

(23) $S = \dfrac{\{0.5\kappa(1-\mu^I) - (\mu^C + \mu^R)\} Y^{\Delta} - 2.5(1-\mu^I)\bar{I} - \mu^S\bar{M}^S + \xi\bar{E}}{1-\mu^C} + \rho\bar{R}$

(24) $M = \dfrac{\{0.5\kappa(\mu^I - \mu^C) + (\mu^C + \mu^R)\} Y^{\Delta} - 2.5(\mu^I - \mu^C)\bar{I} + \mu^S\bar{M}^S - \mu^C\xi\bar{E}}{1-\mu^C}$

(25) $D = M - E = M - \xi\bar{E}$

2/ Eq. (25) only becomes a reduced form equation after eq. (24) has been substituted for M.

Appendix 2.II

Projection model for Algeria

(1) $\bar{Y} = \bar{C} + \bar{I} + \bar{E} - \bar{M}$

(2) $\bar{C} = \bar{Y} - \bar{S}$

(3) $\bar{S} = \sigma \bar{Y}$

(4) $\bar{I} = \alpha Y$

(5) $\bar{M} = \mu \bar{Y}$

(6) $\bar{E} = \bar{E}^{p} + \bar{E}^{r}$

(7) $\bar{E}^{p} = \bar{E}^{p}_{o}(1+ \varepsilon^{p})^{t}$

(8) $\bar{E}^{r} = \bar{E}^{r}_{o}(1+ \varepsilon^{r})^{t}$

Where in addition to the variables already defined

E^{p} = exports of petroleum

E^{r} = other exports.

Appendix 2.III

Projection model for Libya (1970)

(1) $Y = C + I + E - M$

(2) $I = S + M - E + R$

(3) $I = \gamma Y^{n} + \text{a constant}$

(4) $S = \sigma (Y-R)$

(5) $M_{D}^{C} = \mu_{D}^{C} (Y-R)$

(6) $M_{ND}^{C} = \mu_{ND}^{C} (Y-R)$

(7) $M^{R} = \mu^{R} Y$

(8) $M^{I} = \mu^{I} I$

(9) $M^{S} = \mu^{S} \bar{M}^{S}$

(10) $M = M_{D}^{C} + M_{ND}^{C} + M^{R} + M^{I} + M^{S}$

(11) $Y = Y^{p} + Y^{n} + Y^{r}$

(12) $Y^{p} = \nu E^{p}$

(13) $Y^{n} = \eta Y^{p}$

(14) $Y^{r} = \lambda \bar{Y}^{r}$

(15) $R = \beta Y^{p}$

(16) $E = E^p + E^r$

(17) $E^p = \varepsilon^p \bar{E}^p$

Where in addition to the variables already defined

M_D^C = imports of durable consumer goods

M_{ND}^C = imports of non-durable consumer goods

Y^p = gross domestic product in the petroleum sector

Y^n = idem, national sectors

Y^r = idem, other international sectors.

All variables represent annual changes.

Projection model for Libya (1975 and 1980)

(1) $Y = C + I + E - M$

(2) $I = S + M - E + R$

(3) $I = \alpha^{P} Y^{P} + \alpha^{n} Y^{n} + \alpha^{c} Y^{c} + \text{a constant}$

(4) $S = \sigma (Y - R)$

(5) $M_{D}^{C} = \alpha_{D}^{C} (Y - R)$

(6) $M_{ND}^{C} = \alpha_{ND}^{C} (Y - R)$

(7) $M^{R} = \alpha^{R} Y$

(8) $M^{I} = \alpha^{I} I$

(9) $M^{S} = \alpha^{S} \bar{M}^{S}$

(10) $M = M_{D}^{C} + M_{ND}^{C} + M^{R} + M^{I} + M^{S}$

(11) $Y = Y^{P} + Y^{n} + Y^{c} + Y^{r}$

(12) $Y^{P} = \alpha^{Pc} Y^{c} + \nu E^{P}$

(13) $Y^{n} = \alpha^{np} Y^{P} + \alpha^{nc} Y^{c} + \text{a constant}$

(14) $Y^{c} = E^{c}$

(15) $Y^{r} = \chi \bar{Y}^{r}$

(16) $R = \beta Y^{P}$

(17) $E = E^{p} + E^{o} + E^{r}$

(18) $E^{p} = \ ^{p} \bar{E}^{p}$

(19) $E^{c} = \ ^{c} \bar{E}^{c}$

Where in addition to the variables already defined

Y^{c} = gross domestic product in the petrochemical sector.

E^{c} = exports of petrochemical products.

All variables represent changes over a five-year period.

Appendix 2.IV

Projection model for the Sudan

(1) $Y = C + I + E - M$

(2) $Y = Y^T + Y^M$

(3) $Y^T = \quad^T \bar{Y}^T$

(4) $I = \quad Y^M$ + a constant

(5) $C = C^P + C^g$

(6) $C^P = \quad^P Y$

(7) $I = I^T + I^M$

(8) $I = I^g + I^P$

(9) $I^g = T - C^g + F$

(10) $T = \quad Y$

(11) $M = M^C + M^I + M^R + M^S$

(12) $M^C = \quad^C M$

(13) $M^I = \quad^I I$

(14) $M^S = \quad^S \bar{M}^S$

(15) $D = M - E$

where in addition to the variables already defined

Y^T = gross domestic product in the traditional sector

Y^M = gross domestic product in the modern sector

I^T = investment in the traditional sector

I^M = investment in the modern sector

I^g = public investment

I^P = private investment

T = government revenues

F = public deficit

All variables represent annual changes. Variables C^g, D, F, I^T and E are exogenous.

For the projections for 1975 and 1980 the following equations have been added to the original model:

(16) $M^R = \alpha^R Y$ + a constant

(17) $C^g = \gamma^g Y$

(18) $F = \beta Y$

now only variables I^T and E are exogenous.

Industrial classification used in appendices 3.I - 3.V

Throughout appendix 3 mining and manufacturing sub-sectors are classified according to the International Standard Industrial Classification. The following sub-sectors have been distinguished:

ISIC No.	Sector
110	Coal mining
121	Iron ore mining
122	Non-ferrous metal ore mining
130	Crude petroleum and natural gas
192	Fertilizer mineral mining
1	Total mining
20/312	Food manufacturing industry
21	Beverages manufacturing industry
22	Tobacco manufacturing industry
23	Textile industry
243/4	Made-up textile goods manufacturing industry
241	Footwear industry
251	Sawmills, planing and other wood mills
26	Furniture and fixtures manufacturing industry
271	Pulp, paper and paperboard manufacturing industry
291	Tanneries and leather finishing
30	Rubber products industry
31	Chemical industries except 312
32	Petroleum products industry
33	Non-metallic mineral products manufacturing industry
341	Iron and steel basic industries
342	Non-ferrous metal basic industries
35	Metal products manufacturing industry
36/37	Machinery manufacturing industry
38	Transport equipment manufacturing industry
2/3	Total manufacturing

Printing and publishing - 28 - and miscellaneous manufacturing industries - 39 - have not been covered.

Appendix 3.I

Morocco, projected gross output for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	7.0	7.0	7.1	7.1
121	8.5	7.5	6.9	6.6
122	40.2	38.2	38.1	40.1
130	3.0	1.3	—	—
192	111.6	143.7	197.7	254.2
1	170.4	197.8	249.8	308.0
20/312	423.8	525.6	670.9	793.4
21	40.8	39.7	45.2	53.2
22	27.9	36.5	45.7	57.0
23	132.1	212.0	308.0	437.5
243/4	30.1	57.0	94.0	150.0
241	15.7	17.3	18.9	22.7
251	2.3	3.5	4.9	7.1
26	3.6	5.0	7.8	12.4
271	10.4	14.4	22.3	40.4
291	7.2	7.3	7.7	8.0
30	10.3	18.5	30.0	47.0
31-	45.3	111.2	180.1	292.6
32	31.3	46.5	75.0	105.0
33	28.3	43.1	64.0	94.4
341	2.0	3.0	20.2	34.5
342	6.2	21.8	52.5	65.9
35	31.3	40.0	55.0	72.4
36/37	13.0	20.0	50.0	77.8
38	24.2	40.0	80.0	136.4
2/3	885.8	1,262.5	1,832.2	2.507.7

Algeria, projected gross output for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	.6	.6	.6	.6
121	19.8	19.9	19.1	18.0
122	6.7	10.6	13.1	14.8
130	464.1	644.0	910.0	1,120.0
192	.4	.9	4.2	9.3
1	491.6	676.0	947.0	1,162.7
20/312	363.1	448.3	587.6	792.2
21	153.6	145.7	151.0	157.4
22	45.7	55.5	68.0	83.7
23	28.2	86.0	138.0	205.0
243/4	11.6	18.0	25.0	36.0
241	8.0	24.6	30.7	34.1
251	2.6	3.4	4.1	5.2
26	2.5	3.5	5.5	9.3
271	11.2	15.8	25.2	51.6
291	.2	3.0	4.7	7.5
30	5.9	10.0	20.0	35.0
31-	58.2	128.0	284.1	421.9
32	40.0	76.0	138.0	210.0
33	27.0	41.1	67.6	93.1
341	3.5	34.4	73.4	117.2
342	2.5	11.4	40.5	69.8
35	24.2	40.0	65.0	93.7
36/37	27.6	90.0	180.0	281.1
38	47.1	49.0	50.0	52.7
2/3	862.7	1,283.7	1,958.5	2,756.5

Tunisia, projected gross output for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	--	--	--	--
121	5.4	9.9	9.6	9.3
122	3.9	7.8	8.4	7.5
130	--	52.5	63.0	84.0
192	14.4	21.3	34.3	54.5
1	23.7	91.5	115.4	155.3
20/312	187.7	251.1	331.5	427.6
21	29.1	32.7	35.1	38.1
22	17.8	19.3	24.4	30.7
23	30.5	57.0	86.0	120.0
243/4	3.8	7.5	15.0	28.0
241	4.1	5.6	6.5	7.6
251	.1	.1	.1	.1
26	1.2	2.3	3.7	5.7
271	.8	1.5	2.3	3.7
291	1.6	2.5	2.7	3.0
30	1.1	4.3	10.0	20.0
31-	32.6	90.1	141.0	190.3
32	21.0	30.0	57.0	90.0
33	12.9	21.4	34.6	52.1
341	.5	2.4	22.0	35.6
342	3.3	10.2	11.7	16.4
35	9.8	15.0	28.0	42.5
36/37	3.0	6.0	26.0	47.3
38	2.3	3.0	5.0	7.1
2/3	363.2	561.8	842.7	1,165.7

Libya, projected gross output for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	--	--	--	--
121	--	--	--	--
122	--	--	--	--
130	605.9	2,240.0	2,520.0	2,800.0
192	--	--	--	--
1	605.9	2,240.0	2,520.0	2,800.0
20/312	73.9	98.7	140.5	173.5
21	3.8	7.5	10.6	15.2
22	4.0	6.8	11.7	18.3
23	4.8	5.0	20.5	47.5
243/4	5.6	8.3	11.5	16.1
241	.1	.1	.1	.1
251	.2	.3	.3	.4
26	.7	.9	1.6	2.8
271	.9	1.4	2.0	2.9
291	.1	.2	.2	.2
30	.1	.1	6.0	12.0
31	4.4	15.7	54.6	104.5
32	--	15.0	72.0	135.0
33	6.0	24.5	52.7	74.9
341	.5	.5	8.3	14.8
342	--	5.9	5.9	11.8
35	1.2	3.0	26.0	48.8
36/37	5.8	7.0	15.0	23.3
38	6.8	6.8	6.8	6.8
2/3	118.9	207.7	446.2	709.0

United Arab Republic, projected gross output for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964	1970	1975	1980
110	.8	.8	.8	.8
121	1.4	4.6	8.7	15.3
122	2.0	2.0	2.5	3.0
130	67.5	280.0	560.0	840.0
192	6.3	6.2	14.5	23.8
1	78.0	293.6	586.5	882.9
20/312	1,142.2	1,397.4	1,686.3	2,007.9
21	30.5	42.8	55.7	72.5
22	76.6	97.0	117.4	142.9
23	690.0	908.0	1,145.0	1,440.0
243/4	150.0	215.0	294.0	400.0
241	31.1	58.9	85.0	132.5
251	4.2	6.9	10.5	16.0
26	4.8	7.4	10.6	16.4
271	25.3	39.2	57.0	88.0
291	21.9	27.0	29.9	33.0
30	20.8	35.0	55.0	80.0
31-	247.1	409.5	661.2	1,043.7
32	221.8	270.0	360.0	480.0
33	115.1	123.0	179.8	269.2
341	81.4	79.6	150.3	251.0
342	18.4	47.9	88.0	148.2
35	71.3	80.0	130.0	197.0
36/37	56.3	70.0	180.0	313.1
38	44.3	50.0	130.0	216.1
2/3	3,053.3	3,964.7	5,425.8	7,347.6

Sudan, projected gross output for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	--	--	--	--
121	--	--	--	--
122	.6	--	--	--
130	--	--	--	--
192	--	--	--	--
1	.6	--	--	--
20/312	387.1	530.9	647.0	752.0
21	6.1	7.8	9.4	11.4
22	1.6	3.8	5.2	6.8
23	18.7	40.0	80.0	125.0
243/4	--	6.0	16.5	30.0
241	3.0	7.4	8.7	9.5
251	2.5	3.5	4.6	6.1
26	1.6	2.1	2.9	4.2
271	.8	1.0	1.4	2.0
291	.9	2.0	2.5	3.0
30	--	--	--	5.0
31-	9.8	20.2	57.7	111.2
32	--	26.2	36.5	50.0
33	3.4	10.9	19.4	32.7
341	--	1.0	5.9	9.8
342	--	2.5	3.6	6.4
35	4.3	6.0	15.0	25.1
36/37	1.0	1.0	5.0	16.1
38	--	--	6.0	15.6
2/3	440.8	672.1	927.3	1,221.9

Appendix 3.II

Morocco, projected value added for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	Value added				Increase in value added, 1964 - 1980
	1964	1970	1975	1980	
110	4.2	4.2	4.2	4.2	.0
121	6.2	5.5	5.0	4.8	-1.4
122	27.3	26.0	25.9	27.3	- .0
130	1.2	.5	--	--	-1.2
192	84.8	109.1	150.2	193.1	108.3
1	123.7	145.3	185.3	229.4	105.7
20/312	122.6	150.7	190.3	222.6	100.0
21	17.9	17.3	19.5	23.1	5.2
22	18.0	23.5	29.4	36.7	18.7
23	53.7	84.8	123.2	175.0	121.3
243/4	10.8	19.4	31.3	50.0	39.2
241	7.0	7.7	8.4	10.1	3.1
251	1.1	1.6	2.2	3.2	2.2
26	1.1	1.7	2.7	4.2	3.1
271	3.1	4.3	6.7	12.1	9.0
291	2.3	2.3	2.4	2.5	.3
30	3.5	6.4	10.3	16.1	12.6
31-	18.1	46.7	75.3	122.5	104.4
32	10.3	18.0	30.0	42.0	31.7
33	12.2	19.3	28.8	42.8	30.7
341	1.0	1.0	5.4	10.2	9.2
342	3.0	8.7	18.9	24.5	21.5
35	17.4	24.0	33.0	45.1	27.7
36/37	5.2	9.0	22.0	37.8	32.6
38	8.0	12.5	25.0	43.4	35.4
2/3	316.1	458.9	664.9	924.0	607.9

Algeria, projected value added for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	Value added				Increase in value added, 1964-1980
	1964	1970	1975	1980	
110	.4	.4	.4	.4	.0
121	14.5	14.5	13.9	13.1	-1.3
122	4.6	7.3	8.9	10.1	5.4
130	324.9	450.8	637.0	784.0	459.1
192	.3	.7	3.2	7.1	6.8
1	344.5	473.6	663.4	814.7	470.1
20/312	110.9	134.6	167.4	215.2	104.3
21	59.4	58.1	60.9	64.2	4.7
22	29.5	35.8	43.9	54.1	24.6
23	12.8	37.8	59.3	86.1	73.3
243/4	3.6	5.5	7.7	11.0	7.4
241	3.5	10.9	13.7	15.2	11.7
251	1.1	1.5	1.9	2.3	1.3
26	1.0	1.4	2.2	3.7	2.7
271	3.7	5.3	8.6	17.0	13.3
291	.1	.9	1.4	2.2	2.2
30	2.9	5.0	10.0	17.5	14.6
31-	23.7	50.3	117.8	175.4	151.7
32	16.0	34.2	62.1	94.5	78.5
33	12.9	20.0	32.8	44.7	31.7
341	1.5	16.0	28.5	44.9	43.4
342	1.6	6.3	17.5	32.5	30.9
35	7.8	18.0	30.0	46.8	39.1
36/37	11.2	36.0	70.0	133.3	122.1
38	8.9	11.0	11.6	11.8	2.9
2/3	312.1	488.7	747.1	1,072.4	760.3

Tunisia, projected value added for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	Value added				Increase in value added 1964-1980
	1964	1970	1975	1980	
110	--	--	--	--	--
121	3.9	7.2	7.0	6.8	2.9
122	2.6	5.1	5.6	4.9	2.4
130	--	34.1	40.9	54.6	54.6
192	8.4	12.5	20.2	32.0	23.6
1	15.0	59.0	73.7	98.3	83.4
20/312	53.0	68.5	88.7	111.0	58.0
21	12.5	14.2	15.3	16.9	4.4
22	11.5	12.4	15.7	19.8	8.3
23	10.0	18.2	26.6	40.0	30.0
243/4	1.1	2.1	4.2	8.0	7.0
241	1.8	2.5	2.9	3.4	1.6
251	.0	.0	.0	.0	.0
26	.5	.9	1.5	2.0	1.5
271	.3	.5	.8	1.3	1.0
291	.5	.8	.9	1.0	.4
30	.4	1.7	4.0	8.0	7.6
31-	13.5	38.5	60.5	80.2	66.7
32	8.5	12.8	24.2	38.3	29.8
33	5.7	9.9	16.2	24.7	19.0
341	.2	1.1	6.7	10.2	9.9
342	1.0	3.0	3.8	4.9	3.9
35	5.6	8.0	15.0	24.9	19.3
36/37	1.2	2.4	10.0	22.9	21.7
38	.8	1.2	2.0	3.0	2.2
2/3	128.1	198.8	299.2	420.3	292.3

Libya, projected value added for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	Value added				Increase in value added, 1964-1980
	1964	1970	1975	1980	
110	--	--	--	--	--
121	--	--	--	--	--
122	--	--	--	--	--
130	434.0	1,568.0	1,764.0	1,960.0	1,526.0
192	--	--	--	--	--
1	434.0	1,568.0	1,764.0	1,960.0	1,526.0
20/312	20.6	26.8	37.1	45.0	24.4
21	1.9	3.9	5.6	8.1	6.2
22	2.6	4.4	7.6	11.9	9.3
23	2.5	2.5	9.2	19.0	16.5
243/4	1.8	2.6	3.7	5.1	3.4
241	.0	.0	.1	.1	.0
251	.1	.1	.1	.2	.1
26	.3	.4	.7	1.2	.9
271	.3	.6	.9	1.3	1.0
291	.0	.1	.1	.1	.0
30	.0	.0	2.4	4.8	4.8
31-	1.6	6.0	21.4	41.7	40.1
32	--	6.8	32.4	60.8	60.8
33	2.4	10.7	23.4	34.0	31.6
341	.3	.3	3.6	4.9	4.6
342	--	.9	.9	1.9	1.9
35	.4	1.0	13.0	25.5	25.1
36/37	1.7	3.0	7.0	11.6	9.0
38	5.2	5.2	5.2	5.2	.0
2/3	42.7	75.3	174.1	282.1	239.5

United Arab Republic, projected value added for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	Value added				Increase in value added, 1964-1980
	1964	1970	1975	1980	
110	.5	.5	.5	.5	.0
121	1.0	3.4	6.4	11.2	10.2
122	1.3	1.4	1.7	2.4	1.1
130	47.2	196.0	392.0	588.0	540.8
192	4.8	4.7	11.0	18.1	13.3
1	54.8	205.9	411.5	620.1	565.3
20/312	390.6	464.8	547.4	643.6	253.0
21	9.4	13.2	16.7	21.1	11.7
22	49.6	62.8	76.0	92.5	43.0
23	166.0	227.8	292.0	374.0	208.0
243/4	40.0	53.8	70.6	96.0	56.0
241	13.9	25.5	37.0	57.8	43.9
251	1.9	3.1	4.7	7.2	5.3
26	1.9	3.0	4.2	6.6	4.7
271	10.3	15.7	22.8	35.2	24.9
291	7.0	8.7	9.6	10.6	3.6
30	8.3	14.0	22.0	32.0	23.7
31-	100.5	170.9	278.4	446.6	346.1
32	99.5	121.0	162.0	216.0	116.5
33	70.7	62.6	82.7	118.6	47.9
341	33.0	29.5	66.3	103.7	70.7
342	7.4	16.8	28.0	36.8	29.4
35	39.0	40.0	65.0	108.3	69.3
36/37	23.3	35.0	90.0	172.6	149.3
38	15.0	17.0	39.0	77.0	62.7
2/3	1,087.3	1,384.3	1,914.3	2,657.0	1,569.7

Sudan, projected value added for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	Value added				Increase in value added, 1964-1980
	1964	1970	1975	1980	
110	--	--	--	--	--
121	--	--	--	--	--
122	.4	--	--	--	-.4
130	--	--	--	--	--
192	--	--	--	--	--
1	.4	--	--	--	-.4
20/312	76.9	107.7	128.5	155.7	78.8
21	3.3	4.2	5.0	6.1	2.7
22	1.0	2.4	3.4	4.4	3.4
23	6.9	14.8	29.6	46.3	39.4
243/4	--	2.4	6.6	12.0	12.0
241	1.0	2.6	3.0	3.2	2.2
251	1.1	1.6	2.1	2.8	1.6
26	.7	.8	1.2	1.7	1.0
271	.3	.3	.5	.7	.4
291	.6	1.2	1.5	1.8	1.2
30	--	--	--	2.0	2.0
31-	4.0	8.1	23.1	44.3	40.3
32	--	10.4	14.6	20.0	20.0
33	1.4	4.8	8.6	14.9	13.6
341	--	.4	2.8	4.5	4.5
342	--	.4	.4	.8	.8
35	2.2	3.1	8.0	14.2	12.0
36/37	.6	.6	2.5	7.7	7.1
38	--	--	3.0	7.7	7.7
2/3	103.9	165.7	244.4	350.6	250.7

Appendix 3.III

Morocco, projected exports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	2.5	--	--	--
121	8.0	7.5	6.0	5.2
122	30.9	26.8	17.6	17.4
130	--	--	--	--
192	111.4	135.8	190.1	243.0
1	152.7	170.0	213.7	265.6
20/312	55.9	61.7	75.0	82.9
21	21.9	22.8	26.7	30.5
22	.0	.0	.0	.0
23	3.7	7.0	12.0	20.0
243/4	2.0	5.0	8.0	12.0
241	.9	1.2	1.3	1.6
251	.0	.1	.1	.2
26	--	--	--	--
271	6.2	8.7	13.5	21.6
291	2.1	2.1	2.2	2.4
30	.2	.5	1.0	1.5
31-	3.0	25.7	36.3	49.9
32	.7	--	--	--
33	2.2	4.8	6.3	8.8
341	--	--	--	7.0
342	2.6	15.9	38.5	42.0
35	.9	1.0	1.5	2.0
36/37	.4	.6	.8	1.0
38	1.1	2.0	3.0	4.0
2/3	103.9	159.1	226.4	287.3

Algeria, projected exports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964	1970	1975	1980
110	--	--	--	--
121	19.8	18.5	16.6	14.0
122	5.7	9.6	6.9	6.8
130	442.1	607.2	842.8	1,017.8
192	.1	.6	1.2	5.9
1	467.7	635.9	867.5	1,044.5
20/312	14.5	17.6	22.4	28.2
21	120.7	120.2	120.2	120.2
22	2.0	.8	.9	1.0
23	.5	--	--	--
243/4	--	--	--	--
241	.0	.1	.5	.6
251	--	--	--	--
26	--	--	--	--
271	5.0	7.5	11.8	20.0
291	--	.8	1.2	1.8
30	1.0	2.0	2.0	2.0
31-	2.0	23.8	61.2	79.9
32	2.2	16.0	48.0	75.0
33	3.6	2.8	7.0	7.0
341	.2	15.0	33.6	53.4
342	.3	.3	29.7	47.1
35	2.4	3.0	5.0	7.0
36/37	1.9	3.0	4.0	5.0
38	5.5	5.5	5.5	6.0
2/3	161.8	218.3	352.9	454.2

Tunisia, projected exports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964	1970	1975	1980
110	--	--	--	--
121	5.4	9.3	8.0	6.8
122	.3	2.5	3.2	3.2
130	--	37.8	35.0	39.9
192	12.7	17.0	29.4	49.6
1	18.4	66.6	75.7	99.5
20/312	43.8	74.4	111.7	160.6
21	19.5	21.1	21.8	22.4
22	.1	.2	.3	.5
23	.8	2.0	4.0	6.0
243/4	.8	2.0	5.0	8.0
241	.0	.1	.1	.1
251	--	--	--	--
26	--	--	--	--
271	--	--	--	--
291	.0	.0	.0	.0
30	--	--	--	--
31-	6.9	25.9	35.7	44.3
32	.1	--	--	--
33	2.6	1.5	2.5	5.3
341	--	--	8.5	14.6
342	2.9	7.2	7.2	7.2
35	.2	.4	.6	1.0
36/37	.2	.5	1.5	3.0
38	.1	.1	.2	.2
2/3	78.0	135.3	199.0	273.2

Libya, projected exports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	--	--	--	--
121	--	--	--	--
122	--	--	--	--
130	605.9	2,232.3	2.485.0	2,734.2
192	--	--	--	--
1	605.9	2,232.3	2.485.0	2,734.2
20/312	1.0	1.3	1.5	2.0
21	.0	--	--	--
22	--	--	--	--
23	--	--	--	--
243/4	--	--	--	--
241	--	--	--	--
251	--	--	--	--
26	--	--	--	--
271	--	--	--	--
291	--	.0	.0	.0
30	.0	--	--	--
31-	.1	2.3	23.5	47.0
32	--	--	24.0	60.0
33	.3	.6	1.8	2.9
341	--	--	--	--
342	--	--	--	--
35	--	--	2.0	5.0
36/37	--	--	--	--
38	--	--	--	--
2/3	1.4	4.2	52.9	116.9

United Arab Republic, projected exports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964	1970	1975	1980
110	--	--	--	--
121	--	--	--	--
122	1.9	1.8	1.4	1.4
130	28.4	147.0	378.0	602.0
192	3.4	2.2	6.1	7.6
1	33.7	151.0	385.5	611.0
20/312	7.7	9.8	11.3	13.9
21	--	--	--	--
22	.8	1.5	2.3	3.5
23	78.0	90.0	102.0	115.0
243/4	.6	3.0	6.0	9.0
241	.7	1.0	.3	1.8
251	--	--	--	--
26	--	--	--	--
271	--	--	--	--
291	.3	.1	.1	.2
30	1.6	--	--	--
31	7.5	12.3	28.3	75.4
32	19.4	30.0	30.0	30.0
33	4.1	8.0	13.7	20.7
341	3.3	14.6	20.9	36.8
342	--	--	42.8	77.3
35	.3	.4	.5	5.0
36/37	.5	1.0	2.0	3.0
38	.5	.6	1.0	2.0
2/3	125.3	172.3	261.2	393.6

Sudan, projected exports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964	1970	1975	1980
110	---	---	---	---
121	---	---	---	---
122	.2	---	---	---
130	---	---	---	---
192	---	---	---	---
1	.2	---	---	---
20/312	1.9	4.7	13.6	38.1
21	---	---	---	---
22	---	---	---	---
23	---	---	5.0	10.0
243/4	---	---	---	---
241	---	.0	.4	.6
251	---	---	---	---
26	---	---	---	---
271	---	---	---	---
291	.0	.1	.1	.1
30	---	---	---	---
31	.1	2.1	2.5	2.9
32	---	---	---	---
33	.1	.2	.3	1.0
341	---	---	---	---
342	---	---	---	---
35	---	---	---	---
36/37	---	---	---	5.0
38	---	---	---	---
2/3	2.1	7.1	21.8	57.8

Appendix 3.IV

Morocco, projected imports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	.4	.8	8.3	23.5
121	--	--	--	--
122	.6	--	1.0	--
130	14.5	23.0	36.4	51.8
192	--	--	--	--
1	15.5	23.8	45.7	75.3
20/312	75.6	106.5	163.7	227.5
21	2.4	.2	.2	--
22	1.0	.8	.5	.2
23	49.4	47.0	43.0	40.0
243/4	8.0	10.0	12.0	15.0
241	.2	1.1	1.3	1.5
251	11.3	14.6	18.4	23.0
26	.0	.0	.0	--
271	7.4	10.3	15.9	20.0
291	.3	.3	.3	.3
30	9.4	9.6	13.2	16.9
31-	62.3	80.3	85.1	106.4
32	8.0	4.5	--	--
33	3.8	3.7	3.3	4.6
341	28.0	33.0	32.8	52.3
342	5.4	16.1	17.1	32.7
35	11.1	17.5	24.9	52.2
36/37	51.9	106.1	193.4	301.1
38	15.2	35.9	24.4	31.5
2/3	350.7	497.6	649.6	924.9

Algeria, projected imports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964	1970	1975	1980
110	.9	2.1	7.8	13.0
121	--	--	--	--
122	--	--	--	--
130	--	--	--	--
192	--	--	--	--
1	.9	2.1	7.8	13.0
20/312	113.8	119.5	139.7	160.4
21	5.8	2.2	1.8	1.2
22	.6	.2	.2	.1
23	60.0	35.0	30.0	28.0
243/4	35.0	42.0	49.0	57.0
241	10.9	3.0	1.3	.6
251	7.8	10.8	14.5	19.6
26	--	--	--	--
271	9.7	13.4	20.7	29.0
291	.9	.7	1.2	1.7
30	12.5	17.0	17.0	17.0
31-	86.9	100.3	88.9	108.3
32	18.7	--	--	--
33	3.0	4.2	2.8	4.6
341	41.7	24.7	23.2	36.3
342	3.9	12.6	23.9	46.7
35	25.3	30.9	42.0	73.4
36/37	79.6	82.1	89.0	160.2
38	8.6	36.4	85.4	151.1
2/3	524.6	535.0	630.3	895.1

Tunisia, projected imports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	.7	2.4	5.1	7.6
121	--	--	--	--
122	.0	.8	.8	.8
130	8.4	--	--	--
192	--	--	--	--
1	9.2	3.1	5.8	7.3
20/312	31.2	47.3	69.4	94.8
21	.6	.1	.1	.2
22	.4	.1	.0	.0
23	35.3	30.0	25.0	20.0
243/4	2.0	4.0	6.0	8.0
241	.1	.1	.1	.1
251	6.6	8.8	11.4	14.9
26	--	--	--	--
271	4.9	9.3	15.3	23.7
291	.4	.1	.1	.0
30	4.7	5.7	5.0	3.0
31-	27.5	42.0	48.5	58.6
32	6.3	6.0	3.0	--
33	5.5	2.8	2.6	2.6
341	14.1	15.5	13.1	20.0
342	1.5	4.3	6.2	14.4
35	12.1	15.2	15.5	23.3
36/37	39.5	70.8	94.7	134.4
38	18.0	30.9	49.9	73.9
2/3	210.5	292.9	365.8	491.8

Libya, projected imports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	.1	6.5	7.5	8.5
121	--	--	--	--
122	--	--	--	--
130	--	--	--	--
192	--	--	--	--
1	.1	6.5	7.5	8.5
20/312	43.5	67.4	90.0	145.9
21	1.2	1.6	2.3	3.0
22	1.1	1.4	.8	.4
23	12.3	25.0	27.0	28.0
243/4	8.8	13.0	18.0	25.0
241	3.3	4.9	5.9	7.9
251	3.4	4.7	6.2	8.1
26	--	.2	.3	.6
271	.9	1.4	2.1	3.1
291	.1	.1	.1	.1
30	3.3	7.9	6.0	6.0
31-	21.4	25.7	35.6	45.2
32	13.3	12.0	--	--
33	9.9	23.0	11.1	9.2
341	26.8	26.8	25.6	45.5
342	.9	12.2	9.2	17.7
35	14.1	39.6	28.8	34.8
36/37	64.1	336.9	256.0	375.3
38	38.8	120.7	131.7	184.8
2/3	267.6	724.3	656.6	940.5

United Arab Republic, projected imports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964	1970	1975	1980
110	10.3	15.1	22.1	36.3
121	--	--	--	--
122	--	--	13.8	13.8
130	70.4	--	--	--
192	--	--	--	--
1	80.7	15.1	35.9	50.1
20/312	169.0	277.9	389.3	646.2
21	.0	--	--	--
22	--	--	--	--
23	8.0	12.0	17.0	25.0
243/4	--	--	--	--
241	.0	.2	.3	.3
251	28.9	38.3	49.0	63.0
26	--	--	--	--
271	7.7	11.7	17.0	26.8
291	--	.0	.0	.1
30	7.0	10.0	10.0	10.0
31-	100.7	138.0	144.0	190.0
32	10.0	--	--	--
33	5.4	8.7	9.5	10.9
341	40.2	48.0	40.2	47.5
342	2.1	22.1	55.8	97.1
35	24.2	54.9	65.3	110.1
36/37	142.4	258.6	325.9	522.2
38	62.2	114.0	114.3	188.3
2/3	607.9	994.3	1,237.7	1,937.5

Sudan, projected imports for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964	1970	1975	1980
110	.1	.2	.3	.6
121	--	--	--	--
122	--	--	--	--
130	--	13.8	18.2	24.5
192	--	--	--	--
1	.1	14.0	18.5	25.1
20/312	40.9	38.0	89.9	101.3
21	.6	.3	.4	.4
22	3.0	1.4	1.0	.6
23	38.0	36.0	24.0	15.0
243/44	4.8	4.0	3.5	3.0
241	.9	.0	.3	.6
251	5.4	7.1	9.1	11.6
26	--	--	--	--
271	1.7	2.3	3.1	4.7
291	.0	.1	.1	.1
30	5.8	7.0	9.5	9.5
31-	22.7	39.1	45.8	51.6
32	17.8	--	--	--
33	11.0	4.6	3.3	3.8
341	13.1	12.2	13.4	23.0
342	1.3	3.1	4.5	9.9
35	10.3	11.9	8.8	12.2
26/37	32.4	49.3	81.6	127.3
38	27.4	40.4	56.8	96.6
2/3	236.9	256.9	355.1	471.1

Appendix 2.V

Morocco, projected new fixed capital formation for mining and manufacturing 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964-1970	1970-1975	1975-1980	1964-1980
110	--	--	--	--
121	--	--	--	--
122	--	--	2.0	2.0
130	--	--	--	--
192	85.6	69.2	69.2	223.9
1	85.6	69.2	71.2	225.9
20/312	204.7	151.2	74.6	430.5
21	--	--	--	--
22	.8	.8	1.0	2.6
23	32.0	40.0	55.0	127.0
243/4	5.0	8.0	12.0	25.0
241	--	--	--	--
251	.9	1.1	1.8	3.8
26	.3	.6	1.0	1.9
271	15.8	29.8	70.0	115.6
291	--	--	--	--
30	7.0	12.0	16.0	35.0
31-	15.1	105.7	111.1	231.9
32	5.0	25.0	15.0	45.0
33	17.1	27.3	35.6	80.1
341	1.0	62.0	15.0	78.0
342	28.7	70.0	--	98.7
35	3.0	10.0	11.6	24.6
36/37	5.3	15.0	12.0	32.3
38	4.7	11.0	11.6	27.3
2/3	346.3	569.6	443.3	1,359.2

Algeria, projected new fixed capital formation for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964-1970	1970-1975	1975-1980	1964-1980
110	--	--	--	--
121	--	--	--	--
122	13.0	8.2	6.8	28.0
130	150.0	150.0	150.0	50.0
192	24.2	11.9	11.0	47.1
1	187.2	170.1	167.8	525.1
20/312	101.9	71.1	207.0	380.0
21	--	1.0	2.0	3.0
22	--	.2	1.4	1.7
23	65.0	65.0	70.0	200.0
243/4	4.0	4.0	7.0	15.0
241	4.6	--	2.5	7.1
251	.3	.4	.6	1.3
26	.2	.5	.8	1.5
271	8.8	17.	52.5	78.8
291	1.8	.4	1.2	3.4
30	5.0	8.0	15.0	28.0
31-	63.8	127.4	132.4	323.6
32	--	30.0	40.0	70.0
33	11.5	38.7	23.7	73.9
341	125.0	100.0	--	225.0
342	2.2	80.0	--	82.2
35	5.0	12.0	12.3	29.2
36/37	15.0	35.0	38.1	88.1
38	2.7	--	--	2.7
2/3	416.8	591.2	606.4	1,614.5

Tunisia, projected new fixed capital formation for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964-1970	1970-1975	1975-1980	1964-1980
110	--	--	--	--
121	9.0	--	--	9.0
122	8.0	--	--	8.0
130	70.0	30.0	30.0	130.0
192	10.1	22.2	40.2	72.4
1	97.1	52.2	70.2	219.4
20/312	28.6	59.6	66.7	154.9
21	--	--	--	--
22	--	.4	.6	1.0
23	30.0	35.0	50.0	115.0
243/4	1.5	3.0	6.0	10.5
241	.5	.4	--	1.0
251	--	.0	.0	.0
26	.2	.3	.4	1.0
271	2.2	3.0	10.5	15.7
291	.5	--	.3	1.0
30	3.0	5.0	8.0	16.0
31-	39.8	46.6	44.0	130.4
32	--	14.2	30.0	44.2
33	3.0	20.1	26.6	49.7
341	40.0	51.0	.2	91.2
342	--	.6	--	.6
35	2.6	6.0	7.5	16.1
36/37	3.5	9.0	9.9	22.4
38	.4	.7	.5	1.5
2/3	155.7	254.9	261.1	671.7

Libya, projected new fixed capital formation for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars.

ISIC	1964-1970	1970-1975	1975-1980	1964-1980
110	--	--	--	--
121	--	--	--	--
122	--	--	--	--
130	200.0	150.0	150.0	500.0
192	--	--	--	--
1	200.0	150.0	150.0	500.0
20/312	15.6	37.7	16.1	69.4
21	.5	1.0	1.0	2.5
22	--	.3	.6	1.0
23	--	15.0	15.0	30.0
243/4	1.0	1.0	1.5	3.5
241	.0	.0	.0	.1
251	.0	.0	.0	.1
26	.0	.2	.3	.5
271	1.0	1.2	1.7	3.9
291	--	--	--	--
30	--	5.0	5.0	10.0
31-	6.1	62.0	42.5	110.6
32	13.0	30.0	28.0	71.0
33	17.5	36.0	31.4	84.8
341	--	23.4	3.5	26.9
342	1.8	1.8	--	3.5
35	2.3	10.0	10.0	22.3
36/37	1.8	4.0	4.0	9.8
38	--	--	--	--
2/3	60.6	228.5	160.7	449.9

The United Arab Republic, projected new fixed capital formation for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964-1970	1970-1975	1975-1980	1964-1980
110	--	--	--	--
121	7.0	9.0	14.0	30.0
122	.4	.8	1.0	2.2
130	150.0	100.0	100.0	350.0
192	1.8	6.8	8.5	17.1
1	159.3	116.6	123.5	399.3
20/312	347.2	252.3	320.2	919.7
21	--	7.0	7.0	14.0
22	1.9	1.9	2.4	6.2
23	130.0	140.0	165.0	435.0
243/4	15.0	15.0	25.0	55.0
241	11.8	10.0	20.0	41.8
251	4.3	5.7	8.7	18.9
26	.5	.6	1.2	2.3
271	33.2	42.0	73.0	148.2
291	--	--	--	--
30	10.0	20.0	20.0	50.0
31-	139.7	240.3	319.9	699.9
32	14.0	45.0	45.0	104.0
33	49.6	101.2	133.5	284.2
341	100.0	250.0	35.0	385.0
342	41.0	82.0	4.5	127.5
35	5.7	25.0	30.0	60.7
36/37	10.2	65.0	60.0	135.2
38	.9	20.0	20.0	40.9
2/3	915.0	1,323.0	1,290.4	3,528.3

Sudan, projected new fixed capital formation for mining and manufacturing, 1964-1980, at constant 1964 market prices. Values in millions of U.S. dollars

ISIC	1964-1970	1970-1975	1975-1980	1964-1980
110	--	--	--	--
121	--	--	--	--
122	--	--	--	--
130	--	--	--	--
192	--	--	--	--
1	--	--	--	--
20/312	143.8	76.8	78.2	298.8
21	--	--	--	--
22	--	.0	.1	.1
23	40.0	65.0	70.0	175.0
243/4	2.5	4.0	5.0	11.5
241	.9	.3	.5	1.7
251	.4	.8	1.1	2.2
26	.1	.2	.3	.6
271	.7	1.0	1.5	3.2
291	1.3	--	--	1.3
30	--	--	8.2	8.2
31-	5.3	55.5	30.7	91.5
32	20.0	15.0	--	35.0
33	5.8	9.4	20.2	35.4
341	--	20.0	--	20.0
342	1.4	.7	--	2.1
35	.8	4.0	4.0	8.8
36/37	--	4.0	4.9	8.9
38	--	2.0	2.4	4.4
2/3	223.0	258.7	227.0	708.7