ASIA-PACIFIC DEVELOPMENT JOURNAL

Vol. 12, No. 1, June 2005

United Nations
ESCAP

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

ESCAP is the regional development arm of the United Nations and serves as the main economic and social development centre for the United Nations in Asia and the Pacific. Its mandate is to foster cooperation between its 53 members and 9 associate members. ESCAP provides the strategic link between global and country-level programmes and issues. It supports Governments of the region in consolidating regional positions and advocates regional approaches to meeting the region's unique socio-economic challenges in a globalizing world. The ESCAP office is located in Bangkok, Thailand. Please visit our website at www.unescap.org for further information.

The shaded areas of the map are ESCAP Members and Associate members.

Cover design by Bryan Joseph Granados Sabroso

ASIA-PACIFIC DEVELOPMENT JOURNAL

Vol. 12, No. 1, June 2005

United Nations
New York, 2005

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

ASIA-PACIFIC DEVELOPMENT JOURNAL

Vol. 12, No. 1, June 2005

United Nations publication
Sales No. E.05.II.F.20

Manufactured in Thailand
ISBN: 92-1-120431-3
ISSN: 1020-1246
ST/ESCAP/2372

Advisory Board

Members

EDITORS

Editorial Statement

The *Asia-Pacific Development Journal* is published twice a year by the Economic and Social Commission for Asia and the Pacific.

Its primary objective is to provide a medium for the exchange of knowledge, experience, ideas, information and data on all aspects of economic and social development in the Asian and Pacific region. The emphasis of the *Journal* is on the publication of empirically based, policy-oriented articles in the areas of poverty alleviation, emerging social issues and managing globalization.

The *Journal* welcomes original articles analysing issues and problems relevant to the region from the above perspective. The articles should have a strong emphasis on the policy implications flowing from the analysis. Analytical book reviews will also be considered for publication.

Manuscripts should be sent to:

Chief Editor
Asia-Pacific Development Journal
Poverty and Development Division
ESCAP, United Nations Building
Rajadamnern Nok Avenue
Bangkok 10200
Thailand
Tel.: (662) 288-1902
Fax: (662) 288-1000 or 288-3007
Email: **escap-pdd@un.org**

ASIA-PACIFIC DEVELOPMENT JOURNAL
Vol. 12, No. 1, June 2005

CONTENTS

Announcement

This is the last issue of the *Asia-Pacific Development Journal* I will lead as I am moving from 1 July 2005 to take a new assignment at the Office of the Executive Secretary of ESCAP. At the same time, I wish to introduce Ms. Shamika Sirimanne, who is the Chief of the Socio-economic Analysis Section in the Poverty and Development Division of ESCAP, as the new editor of the *Journal*.

I would like to thank the Advisory Board and all those who contributed to the *Journal* and hope that you will continue to support the new team.

Raj Kumar

Chief Editor

A note from the Editor

This issue marks a change in the leadership of the *Asia-Pacific Development Journal* as Mr. Raj Kumar, Chief of the Poverty and Development Division and Chief Editor of the *Journal,* is leaving to take new responsibilities at the Office of the Executive Secretary of ESCAP. Under Mr. Kumar's leadership since 2001, the *Journal* has shifted its focus to address emerging policy issues in the ESCAP region as a result of its greater integration into regional and global markets. The research papers examined the empirical validity of theoretical arguments, identified best practice examples and lessons learned, and thereby guided policymakers to understand and manage the process of globalization better. In another change, I have taken over the editorial role from Mr. Shahid Ahmed who retired from ESCAP at the end of 2004. It is with great appreciation that I acknowledge the contribution of these two colleagues to the *Journal*.

The papers presented in this edition address several concerns raised by ESCAP member countries in managing the process of globalization. The first paper examines how to increase the benefits of trade cooperation among countries in the ESCAP region. By analyzing the trends in trade performance of the member countries of the Association of Southeast Asian Nations (ASEAN) and the South Asian Association for Regional Cooperation (SAARC), the paper finds that there is a tremendous potential for increasing intraregional trade and export diversification efforts within the region by deepening cooperation. The paper argues that more needs to be done to realize this potential. It highlights the need to harmonize different subregional trade agreements, improve trade facilitation efforts, and pay more attention to the aspects of foreign investment, technology transfer and trade-related infrastructure development. While recommending that South Asian economies pursue further trade cooperation with other Asian countries to overcome their small market sizes and high trade barriers, the paper is emphatic that successful integration in the region may require larger countries to intensify their own trade liberalization efforts.

The second paper explores regional development schemes that may help integration among a group of developing and less developed countries. It argues that the success in creating more trade within the block depends to a large degree on socio-economic assistance programmes built into the schemes to support the weaker members. Four areas of assistance are explored: education, infrastructure, trade and public administration. The paper argues that socio-economic assistance would improve the overall development of the region, giving rise to more trade and investment opportunities within the trading block.

The third paper examines various forms of financial exclusion of the poor and disadvantaged social groups in the Asia-Pacific Economic Cooperation (APEC) community. It shows that financial exclusion is a problem not only limited to developing member economies but affecting all member economies. Significant numbers of population subgroups are excluded from accessing formal financial institutions in all

APEC member economies. The paper proposes microbanking, which provides a wide array of small-scale financial services including credit, savings, insurance and remittance services, as the best solution to address the financial exclusion problem.

The fourth and fifth papers focus on sectoral issues emerging as a result of deeper integration into regional and global markets. The first issue deals with the role of infrastructure in improving regional income levels in South Asia. The paper finds that cross-country differences in physical infrastructure endowments are partly responsible for the regional disparity in economic growth and income. In particular, transport, electricity, gas and water supply and communication facilities are found to have a significant impact on economic growth. The authors recommend that regional cooperation agreements should formulate comprehensive infrastructure policies to enhance interregional infrastructure networks. The second sectoral issue deals with the impact of international trade on the environment. Measuring India's environmental gains and losses from trade, the paper finds that trade liberalization has not led to pollution-intensive industrial development. In fact, the difference in factor abundance is a much stronger determinant of trade than pollution regulation differences. The paper suggests that too much emphasis on strict environmental regulations might lead to a loss of comparative advantage in trade, and promotes the export of dirtier goods.

This edition also includes two book reviews. *Economic Policy in Sri Lanka: Issues and Debates* presents an in-depth and timely analysis of the change in policy regimes and its impact on socio-economic developments in Sri Lanka over the past five decades. The book explores six areas where major policy reforms and rethinking took place: development strategy and ideology; macroeconomic policy; agriculture, industry and technology development; employment and labour; institutional and governance issues; and social welfare. The lessons learned in Sri Lanka, which went through both controlled and open economy policy regimes, would be useful to other developing economies. Finally, the study on implementing the Monterrey Consensus in the Asian and Pacific region, the theme topic for the sixty-first session of the Commission held in Bangkok, in May 2005, identifies that formidable challenges exist in sustaining the good economic performance enjoyed by developing countries in the Asian and Pacific region. Crucial among theme is the ability to generate financial resources needed to achieve the Millennium Development Goals. In this respect, the study explores ways to develop capital markets in the region, promote South-South investment, increase aid flows and, most importantly, improve international trade prospects. It also underscores the need to have regional initiatives to increase the coherence of monetary, financial and trading systems and reduce vulnerability to financial crises.

Shamika Sirimanne

TRADE COOPERATION AND PERFORMANCE IN EAST AND SOUTH ASIA: TOWARDS A FUTURE INTEGRATION

*Biswajit Nag**

On paper free trade and open economies maximize global efficiency in the production and distribution of both goods and services. However, in the real world where distortions are the norm the ideal of free trade is difficult, if not impossible, to achieve. In consequence, countries and economies have become increasingly involved in the pursuit of the "second-best" solution in the form of regional or subregional free trade arrangements. This paper examines the rationale for, and impact of, these arrangements in the ESCAP region and suggests that there is considerable potential for further trade cooperation between the various free trade arrangements formed in the different subregions of ESCAP. In this regard, the paper makes a number of recommendations that emphasize the need for the bigger economies of the region to take the lead in furthering trade liberalization.

I. PROS AND CONS OF REGIONAL TRADING ARRANGEMENTS

It has been well established in the literature that free trade and open economic policy maximize the global efficiency in a distortion-free world. The "first-best" Pareto-efficient solution is practically impossible to achieve as today's world is ridden by multiple distortions in the form of tariffs, non-tariffs, exchange controls, movement of factors of production and different political and economic systems (Kreinin and Plummer, 2002). Against this background the ideas of regional trading arrangement (RTA) have been mooted. An RTA facilitates the choice of a selective liberalization policy as mutually agreed by all member economies, keeping them protected from global competition. Over time, the process of globalization has been interwoven with the gradual opening up of economies and, in most cases, initially at the regional level.

* Indian Institute of Foreign Trade, New Delhi, 110016, India.

The rationale for regional cooperation is based on a number of factors, not all of which are necessarily economic in nature. In many cases, regionalism brings the same benefits, however on a much smaller scale, as those resulting from multilateralism.[1] It allows the participating developing countries to achieve larger economies of scale in production, attain specialization, increase competitiveness and diversify their export basket, thus assisting domestic economic reform. It becomes increasingly apparent that there is much to gain from regional trade facilitation measures. Such cooperation also could help countries to come together and develop a common understanding on several international trade-related issues.[2]

However, finding equitable ways to share the burdens and benefits of regional cooperation can be difficult and many countries may be unwilling or unable to cooperate because of political tensions, lack of trust, high coordination costs and the asymmetric distribution of costs and benefits of regional cooperation. Moreover, there are strong incentives for a country to behave strategically on separate issues so that it can withdraw on a particular issue if not satisfied. Regional cooperation agreements may sometimes be difficult to achieve or fail to deliver results owing weak institutions and the lack of proper enforcement mechanisms for ensuring the fulfilment of commitments. RTAs may lead to "trade diversion",[3] which can limit the benefits derived from trade liberalization. Regional peace, stability and mutual trust are basic preconditions for successful regional cooperation.

Generally RTAs have four stages of development. In the first and second stages, agreements by and large follow a "positive list" approach, which identifies goods that are to enjoy tariff reduction (product by product or sectoral) and then go more rapidly through the "negative list" approach, conforming the commitments of the members to include most of the traded goods (except a small "negative list" of goods which are excluded) for faster process of liberalization. In the third and fourth stages, steps are taken towards the creation of a single market involving trade facilitation measures and the liberalization of trade in services, plus movement

[1] For example, regional cooperation helps a country to overcome the size limitation and exploit economies of scale, but its multilateral trade liberalization and active participation in global trade makes this more obvious and there is no limit to realizing economies of scale in that context (ESCAP, 2004a).

[2] However, countries from other regions can also contribute to this effort. Recent developments show that countries do not need regional organizations to form common negotiating positions, e.g. the Cairns group or the G22 had no regional basis. However, many regional groups (like SAARC) discuss WTO matters among themselves for better understanding of specific issues, which can help in developing negotiating position before forming a negotiating group (ESCAP, 2004a).

[3] Trade diversion is trade that is diverted away from outside countries as a result of lowering tariffs between the members of a trading bloc.

of labour and capital. This is followed by policy coordination on macroeconomic and other economic matters (economic union) among members. However, the rapid proliferation of RTAs, especially in the 1990s, has blurred all of these stages. This traditional stage model of integration is probably no longer a good characterization about the development of RTAs. For example, many RTAs were originally free trade agreements (FTAs). Some, such as the North American Free Trade Agreement (NAFTA), never were intended to be more than an FTA, and common markets and monetary unions are (at least currently) not of major relevance outside Europe.

In Asia, though regional cooperation was initiated in the late 1960s through the formation of the Association of Southeast Asian Nations (ASEAN), actual economic and trade cooperation started much later, with the signing of the ASEAN Preferential Trading Arrangement (PTA) in 1977. Subsequently, South Asian countries came together and formed the South Asian Association for Regional Cooperation (SAARC) in 1985, after the idea of SAARC was floated in the early 1980s. Efforts also have been made by cross-subregional groups such as APEC,[4] the Bangkok Agreement countries, BIMST-EC[5] and ASEAN+3.[6] Recently, countries have been engaged in forming a number of bilateral trade agreements (BTAs), which is a new trend in the region. Japan and the Republic of Korea are going further to develop deeper economic cooperation through economic partnership agreements (EPAs) with many countries in the region.

The article will analyse selected trade agreements and the performance of major Asian economies to harness the possibility and implication of further trade cooperation among South, South-East and North-East Asian countries. In this context, the merits of harmonizing trade cooperation among ASEAN, SAARC and North-East Asian countries will be explored.

II. EVALUATING TRADE AGREEMENTS

Despite the recent rapid growth of RTAs, the extent of their contribution to the achievement of high economic growth is still unclear. These should be evaluated on a number of criteria, such as the extent of trade liberalization within the RTA, treatment of non-members, extent of harmonization of policies linked to trade and

[4] Asia-Pacific Economic Cooperation.

[5] Formerly known as the Bangladesh-India-Myanmar-Sri Lanka-Thailand-Bhutan-Nepal Economic Cooperation, BIMST-EC was renamed the Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation on 31 July 2004.

[6] ASEAN members and China, Japan and the Republic of Korea.

the nature of dispute settlement mechanism.[7] It is widely believed that the outcome of an RTA depends mainly on the membership, the policies pursued and the effectiveness of the proposed institutional mechanism. Moreover, political willingness and commitments are equally important for the success of any trade agreement. Lastly, to be consistent with the multilateral process RTAs should be outward looking.

RTAs are acceptable within the World Trade Organization (WTO) framework.[8] However, in practice it has proven difficult for members to agree on the precise interpretation or application of the provisions of WTO. For most RTAs there is inevitably a degree of uncertainty about whether they can be assumed to be in conformity with articles related to RTA. The overall assessment of the costs and benefits of RTAs is often summarized by asserting that outward-looking arrangements are better than inward-looking ones (ESCAP, 2000) and that they are more likely to facilitate liberal multilateral trade. The outward orientation of any RTA is judged on the basis of its consistency with Article XXIV of the General Agreement on Tariffs and Trade (GATT),[9] or the existence of any inbuilt rule which stresses the reduction of external barriers in the form of reduction of most-favoured nation (MFN) tariffs and/or rule which stresses that agreement is open to other countries under certain accession conditions. Open regionalism,[10] which eliminates the creation of discriminatory arrangements, is also considered outward oriented.

The Doha Round has recognized the importance of RTAs in promoting trade liberalization and stressed on bringing harmony among regional and multilateral processes, reshaping RTA rules and improving transparency and systemic issues

---

[7] Chapter 3 of *Meeting the Challenges in an Era of Globalization by Strengthening Regional Development Cooperation* (ESCAP, 2004a) briefly documents various features of PTAs and their possible outcomes.

[8] Article XXIV of GATT and Article V of the General Agreement on Trade in Services (GATS) provide the legal foundation for RTAs.

[9] GATT Article XXIV, which permits exceptions from the general rule of non-discrimination under certain conditions, refers to a wide coverage of products and no action that would raise trade barriers against non-members. In practice, these conditions are seldom met. Even if they were, the network of preferential arrangements that would develop could still harm the multilateral system. If GATT Article XXIV seems to be extremely weak, its implementation has been even weaker.

[10] Open regionalism is consistent with a narrower product coverage than the rules of Article XXIV. Its virtue is that it does not challenge Article I of GATT, yet it still involves a concerted attempt to move towards freer trade. While the product coverage is not as extensive, it does involve a wider coverage of other issues. The concept of open regionalism changes the interpretation of MFN from exclusive MFN required for members only, which is the GATT norm, to inclusive MFN (also for non-members). It also changes the norm of reciprocity from specific direct balancing of benefits to a more diffuse and general give and take. Some tend to see open regionalism as a prototype for a new edition of Article XXIV.

through negotiation while considering the developmental aspects of these agreements. The WTO Committee on Regional Trade Agreements (CRTA) has enjoyed little success so far in assessing consistency among the notified RTAs owing to various political and legal difficulties, which include issues on preferential rules of origin and the dispute settlement process. CRTA has also been unable to carry out effectively its functions of review and oversight of RTA implementation (WTO, 2003). The current negotiation on RTAs has been conducted giving thrust on transparency and systemic issues. Discussions have been fruitful on transparency issues and RTA surveillance mechanisms leading to more precision in the notification procedure. Informal discussions on systemic issues started in 2003, which include clarification and improvement of the existing rule on RTAs and other related rules.

III. MAJOR TRADE AGREEMENTS IN BRIEF

Regionalism in Asia is more or less outward oriented, supportive to the multilateral process and flexible and has sought to integrate Asian economies. Since the late 1990s some of the Asian trade blocs have picked up the momentum towards further liberalization among the member countries. In this section, trade agreements in the SAARC and ASEAN regions will be analysed. Attention will also be given to cross-subregional attempts linking countries from different subregions and the recent endeavour of the North-East Asian countries in this regard.

ASEAN's PTA in 1977 was one of the earliest moves towards cooperation in regional trade. This provided the beginning of tariff reduction on a product-by-product basis according to members' priorities. ASEAN leaders undertook deeper trade liberalization measures through the formation of the ASEAN Free Trade Area (AFTA) in 1992. The AFTA arrangement, through the Common Effective Preferential Tariff (CEPT) scheme, envisages the reduction of tariffs and non-tariffs through a proper time schedule, contrary to earlier PTAs.[11] The modalities of CEPT are based on concessions granted on a reciprocal product-by-product basis, thereby

[11] The CEPT scheme contains an Inclusion List (IL), a Temporary List (TEL), Sensitive List (SL) and General Exception List (GEL). Products in IL are divided into two groups subject to two different schemes of tariff reductions. They are normal-track products and fast-track products. The protocol to amend the agreement on the CEPT scheme (2003) has provided a time line for complete elimination of import duties of products under IL by 2010 and for Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam by 2015. Flexibility has also been allowed for import duties on some sensitive products, which are to be eliminated not later than 1 January 2018. In 2003, the average CEPT tariff rate for products in IL was 2.7 per cent (compared with 12.76 per cent in 1993). The tariff on products under TEL would ultimately come down to CEPT levels but they are temporarily protected. Items in SL are unprocessed agricultural goods for which tariffs will be reduced to CEPT levels by 2010. GEL consists of the products that are permanently excluded from the tariff reduction initiatives.

encouraging members to include more products for tariff reduction. In addition, an effort has also been made to expand the scope through the standardization and harmonization of customs procedures, an industrial cooperation scheme, a framework for services liberalization and an investment area. The ASEAN Framework Agreement on the Facilitation of Goods in Transit (1998) aims to facilitate the impact of AFTA through the smooth transportation of goods in transit. ASEAN also adopted a separate Protocol on Dispute Settlement Mechanism (1996) to solve the disputes more transparently. For further integration, a Framework Agreement on the ASEAN Investment Area was signed in 1998, which initially focuses on gradually opening up all sectors for direct investment to eventually offer national treatment to all investors.

In South Asia, trade cooperation was initiated through the Agreement on SAARC Preferential Trading Arrangement (SAPTA). Signed in 1993, SAPTA followed a positive list approach, including flexible provisions for least developed countries (LDCs). It has proper rules of origins and no formal dispute settlement mechanism. The fourth round of SAPTA negotiations was completed in 2002 and studies have indicated that the process has not been very effective (Mohanty, 2003) as concessions offered have been less attractive. However, the renewed effort to accelerate trade liberalization through the signing of the Agreement on South Asian Free Trade Area (SAFTA) during the twelfth SAARC Summit in 2004 is noteworthy. Member States have agreed to begin implementation of it from 1 January 2006. Tariff reduction[12] will be done in phases providing flexibility to the LDCs.[13] The tangible gain from SAFTA will be understood once sensitive lists, the rules of origin and a compensation mechanism concerning the loss of customs revenue are prepared. SAFTA also suggests that members adopt additional measures, including the simplification of banking procedures for import financing, transit facilities for

[12] Tariff reduction is scheduled in two phases. The non-least developed countries – India, Pakistan and Sri Lanka – would have to reduce their tariffs from their existing levels of 20 per cent within a time frame of two years from the date the agreement comes into force. The region's least developed countries (LDCs) – Bangladesh, Bhutan, Maldives and Nepal – will reduce their existing tariff rates to 30 per cent within the two years from the date the agreement comes into force. The subsequent tariff reduction from 20 per cent or below to 0-5 per cent shall be done within a second time frame of five years for non-LDCs, beginning from the third year from the date the agreement takes effect. However, the period of subsequent tariff reduction by Sri Lanka shall be six years. The subsequent tariff reduction by the LDCs from 30 per cent or below to 0-5 per cent shall be done within a second timeframe of eight years beginning from the third year from the date of coming into force of the agreement.

[13] Non-LDCs will reduce their tariffs for LDCs to 0-5 per cent within three years of implementation of the agreement. The framework also has provisioned for favourable treatment for LDCs concerning anti-dumping and countervailing measures. In addition, appropriate mechanism to compensate the LDCs for their loss of custom revenue owing to the implementation of the trade liberalization programme shall also be established.

efficient intra-SAARC trade, the removal of barriers to intra-SAARC investments, rules for fair competition and the promotion of venture capital and simplification of procedures for business visas.

BIMST-EC[14] was established in June 1977. It is a unique joint-action framework in which two ASEAN members have come together with countries of South Asia for economic cooperation. Bhutan and Nepal joined the group in 2004. At the Sixth BIMST-EC Ministerial Meeting in 2004, an FTA was signed which includes trade in goods and services, investment liberalization and improvement of competitiveness. Negotiations on the product list and other necessary issues are expected to be completed by December 2005, with implementation to start by July 2006. Full implementation of the FTA between India, Sri Lanka and Thailand is expected in June 2012 and for LDCs in 2017. India, Sri Lanka and Thailand will eliminate tariffs of "fast track" products by 2009 while other countries will do so by 2011.

The Bangkok Agreement is a preferential trading arrangement. Signed in 1975 by five initial members, Bangladesh, India, the Lao People's Democratic Republic, the Republic of Korea and Sri Lanka, the Agreement was based on mutually beneficial trade liberalization measures (GATT's enabling clause). It has followed a positive list, product-by-product approach for tariff concession on goods. Though generally treated as a sleepy agreement, China's accession to the Bangkok Agreement in 2001 provided a substantial dynamism which has been reflected in an increase in the list of concessions after completion of the third round of negotiations in 2004 (see table 1). A number of countries have also recently expressed their interest in the Agreement, and Pakistan is in the process of accession.

APEC[15] provides another trend, which is based on open regionalism or non-discriminatory liberalization. The best tariff preferences that one APEC member accords to other members are also accorded to non-APEC trading partners to attain the common goal of reaching free trade by 2010 (2020 for developing countries). APEC also pursues trade facilitation and customs harmonization. However, it has been recognized that as APEC's founding principles emphasize

[14] See footnote 5 above.

[15] Established in 1989 as an informal dialogue group, APEC today is a cooperative, multilateral economic and trade forum and has 21 member economies: Australia; Brunei Darussalam; Canada; Chile; China; Hong Kong, China; Indonesia; Japan; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Philippines; Republic of Korea; Russian Federation; Singapore; Taiwan Province of China; Thailand; United States; and Viet Nam. For details see http://www.apecsec.org.sg/apec/about_apec.html (accessed on 13 January 2004).

Table 1. Number of items (preliminary) under Bangkok Agreement concessions

	Current	*After third round*
Bangladesh	129	210
China	902 (18)	1 671 (156)
India	188 (33)	577 (57)
Republic of Korea	214 (29)	1 298 (316)
Sri Lanka	288 (32)	523 (80)
Total	1 721 (112)	4 279 (609)

Source: ESCAP, "Multilateralism Free Trade Areas in Asia and the Pacific: Progress, Challenges and Prospects", document presented to the Subcommittee on International Trade and Investment at its first session, Bangkok, 27-29 October 2004 (E/ESCAP/SCITI/1).

Note: ( ) = special concessions to least developed countries.

voluntary, non-binding, unilateral action, the driving forces to trade liberalization depend very much on the WTO round and the successful implementation of the Doha Agenda is important to achieve the 2010/2020 Bogor Goals.

Bilateral free trade agreements play an increasingly important role in promoting trade liberalization and economic growth in Asia. Several countries of the region are now pursuing EPAs (see table 2) designed to facilitate trade in goods and services and investment flows. The agreement between Japan and Singapore is a good example of this form of cooperation, which has moved beyond trade and investment liberalization to include cooperation in financial services, information and communication technology (ICT), human resources development, small and medium-sized enterprises (SMEs) and tourism. Japan and the Republic of Korea expect to complete FTA negotiations by the end of 2005 and Japan has recently agreed to establish EPAs with three South-East Asian countries: Malaysia, the Philippines and Thailand. Important bilateral attempts in South Asia are trade cooperation between India-Sri Lanka and India-Bangladesh. Conversely, ASEAN has moved further to strengthen cooperation linking individual countries through ASEAN+Japan, ASEAN+China, and ASEAN+India agreements.

Major subregional blocs such as ASEAN and SAARC and cross-subregional groups such as BIMST-EC, the Bangkok Agreement and APEC have structured trade agreements with time lines to reduce trade barriers. Only APEC has a clear policy regarding integration of its members with the world economy as it pursues a policy of open regionalism. In addition, different forms of bilateral agreements, including EPAs, are the new trend, rendering the entire scenario of Asian regional

integration more complex. The increasing number of agreements, their coverage, aspirations, overlapping of different time lines and existence of several LDCs in various groups have created confusion about the short- and medium-term efficiency gains from these efforts. Though skepticism exists, no one can deny the fact that these efforts hold the potential to lay the foundation for the eventual integration of all countries in the region. Experts hold positive expectations regarding ASEAN's preference in bilateral agreements (ASEAN+1+1+1). EPAs are also viewed as producing deeper integration through domestic regulatory reform and establishing linkages between trade and development goals. Asian regionalism is definitely experiencing a transition phase, which will move towards greater outward-oriented regionalism if, together with the proliferation of trade agreements, MFN rates also start falling. Active negotiation in WTO and implementation of the Doha Agenda are necessary to achieve this. The "spaghetti bowl" of trade agreements will take

Table 2. Some recently established/proposed EPAs and similar agreements in the Asian and Pacific region, 1999-2003

Agreements	*Member countries*	*Status*
Japan-Singapore Economic Partnership Agreement (JSEPA)	Japan-Singapore	Entered into force in 2002
Japan-Republic of Korea Free Trade Agreement (JKFTA)	Japan-Republic of Korea	Negotiation process is expected to be completed by 2005
Japan-Thailand Economic Partnership Agreement (JTEPA)	Japan-Thailand	The negotiations was to begin in early 2004
Japan-Malaysia Economic Partnership Agreement (JMEPA)	Japan-Malaysia	The negotiations was to begin in early 2004
Japan-Philippines Economic Partnership Agreement (JPEPA)	Japan-Philippines	Entered into negotiations in early 2004
Sri Lanka -Singapore Comprehensive Economic Partnership Agreement (CEPA)	Singapore-Sri Lanka	Discussions ongoing
India-Singapore Comprehensive Economic Cooperation Agreement (CECA)	India-Singapore	Negotiation ongoing

Sources: The Ministry of Foreign Affairs of Japan, *The Japan-Singapore Economic Partnership Agreement (JSEPA)*, http://www.mofa.go.jp/region/asia-paci/singapore/agree0201.html (13 January 2004); and the Ministry of Trade and Industry, *Free Trade Agreement,* http://www.mti.gov.sg/public/FTA/frm_FTA_Default.asp?sid=12 (14 January 2004).

shape concretely, depending on the gravitational force among bigger countries as well as stronger trade blocs in the region. Hence, the bigger countries need to play a more meaningful role in bringing harmony among the different countries to develop an "Asian way" of integration.

IV. ANALYSIS OF TRADE PERFORMANCE

Trade growth rates

Export growth rates of different countries and subregional groups are shown in table 3. It may be pointed out that selected subregional groups experienced higher export growth rates in the first half of the 1990s compared with the latter half. The 1997-1998 financial crisis and the slowdown in the IT sector in 2000-2001 were the main reasons for the negative export growth, which pushed down the average export growth rate in the post-1995 period. On average, in the last decade the Bangkok Agreement countries experienced the highest growth rates, owing mainly to the performance of India and China. In addition to India, among the other South Asian countries Bangladesh and Nepal had double-digit export growth rates in the 1990s. Sri Lanka's export growth rate registered more than 15 per cent in the first half of the 1990s but slowed down thereafter. Among ASEAN countries, Cambodia, the Lao People's Democratic Republic, Malaysia, the Philippines, Thailand and Viet Nam performed well during this period. Among North-East Asian countries Japan registered the lowest export growth rate (4.11 per cent) in the 1990s. China's exports grew by 15 per cent during that time. The actual export figures are shown in table A1 of the appendix.

Turning to the intraregional trade growth among selected subregional groups, table 4 shows that the intra-group trade growth among Bangkok Agreement countries is greater than those of ASEAN and SAARC. In the 1990s, exports and imports were around 27 per cent and 31 per cent respectively. Intra-ASEAN trade fell drastically after 1995. It is important to note that AFTA was established during this period. The Asian crisis dealt a big blow to the intra-group trade growth among ASEAN members. Equally interesting is that despite the slow progress in trade negotiations, the Bangkok Agreement countries had a significant high trade growth rate. SAARC countries also received a jolt in the post-1995 period and as a result their intra-group trade growth plummeted. However, of interest is that there is little difference in average intra-group trade growth between ASEAN and SAARC during the selected period. Table A2 in the appendix provides more information on exports of selected Asian trading blocs.

The bilateral trade growth of some countries in the Asian and Pacific region is shown in table 5. This provides some indication of the natural bias in trade

Table 3. Export growth rates (per cent) of selected trading groups and countries or areas

	1980-2000	*1990-1995*	*1995-2000*	*1990-2000*	*1996-1997*	*1997-1998*	*1998-1999*	*1999-2000*	*2000-2001*	*2001-2002*
ASEAN	11.08	17.10	4.43	11.05	3.58	-6.60	9.09	18.77	-9.75	0.05
Bangkok Agreement	12.94	15.38	7.79	12.17	12.88	-1.11	6.91	23.75	-1.03	16.39
SAARC	9.37	11.07	5.24	9.08	5.33	-2.39	4.63	16.78	0.28	9.69
Bangladesh	12.58	18.25	11.09	15.33	20.72	6.23	6.16	17.24	-4.91	1.02
Bhutan	11.55	6.17	0.95	6.99	17.36	-8.25	7.28	-11.09	-2.91	-10.00
India	9.38	11.45	5.28	9.45	5.75	-4.49	6.67	18.82	2.28	13.62
Maldives	11.40	-2.38	6.98	5.64	23.84	1.45	-14.31	19.14	0.41	18.67
Nepal	10.77	11.20	17.75	10.73	5.37	16.72	27.04	33.66	-8.39	-22.99
Pakistan	7.87	6.06	0.76	4.28	-6.48	-2.79	-0.27	6.32	2.32	7.31
Sri Lanka	9.61	15.42	6.39	11.33	13.28	3.67	-4.47	18.20	-11.31	-4.88
Brunei Darussalam	-2.18	-0.74	1.07	0.54	-0.55	-16.60	27.11	-1.14	-6.77	2.95
Cambodia	31.62	49.41	9.57	25.31	-2.76	49.16	11.41	7.94	15.43	10.97
Indonesia	6.18	11.75	4.10	8.06	7.29	-8.60	-0.37	27.66	-9.14	-32.05
Lao People's Democratic Republic	16.05	36.43	0.62	15.44	11.21	2.93	-15.89	6.28	0.30	-10.14
Malaysia	12.71	19.93	4.62	12.24	0.53	-6.97	15.52	16.08	-10.41	5.98
Myanmar	7.38	21.60	14.23	14.38	16.07	22.97	5.57	44.07	45.54	27.85
Philippines	11.45	16.06	18.78	18.85	21.93	18.22	24.35	8.77	-17.89	11.02
Singapore	12.18	17.62	1.08	9.93	-0.02	-12.07	4.35	20.16	-11.65	2.81
Thailand	15.17	18.70	3.19	10.52	2.97	-5.09	7.32	18.17	-5.71	5.74
Viet Nam	20.98	19.48	19.68	22.70	26.59	1.92	23.28	25.21	4.51	9.47
Japan	7.01	8.71	1.07	4.11	2.45	-7.85	8.11	14.28	-15.81	3.28
China	14.74	18.70	10.04	14.47	21.02	0.50	6.11	27.84	6.78	22.36
Hong Kong, China	14.49	15.87	1.60	8.26	4.04	-7.48	-0.07	16.09	-5.93	5.37
Taiwan Province of China	10.94	9.71	4.45	7.51	5.16	-8.90	9.90	22.57	-16.90	7.35
Republic of Korea	12.23	12.78	5.52	10.11	4.97	-2.83	8.60	19.89	-12.67	8.00

Source: *UNCTAD Handbook of Statistics on CD-ROM*, 2003.

patterns within the region. Trade growth rates between China and the Republic of Korea and China and India are quite high. The Republic of Korea's exports to India registered more than 5 per cent growth during the period 1997-2001 but India's exports to the Republic of Korea did not rise. South-East Asian countries such as Thailand and Singapore also have relatively high export growth in South Asian countries. Trade growth between India and Malaysia is also higher than their world export growth rates. China consistently has a high export growth rate in the region. The opposite is true for Japan except for its export growth in China and Bangladesh. It needs to be mentioned that despite two shocks in the selected

Table 4. Intra-group trade growth[a] (percentage)

		1990-2002	1990-1995	1995-2002
ASEAN	Imports	11.05	21.55	4.12
	Exports	10.91	23.79	2.53
Bangkok Agreement	Imports	31.38	65.43	11.43
	Exports	27.42	55.00	10.77
SAARC	Imports	11.97	24.29	3.92
	Exports	9.96	18.58	4.19

Source: Calculated from the data available in the *UNCTAD Handbook of Statistics on CD-ROM,* 2003.

[a] Compound average growth rate.

Table 5. Export growth rates (1997-2001) of selected countries or areas in different export destinations in the region

Destinations	Japan	Taiwan Province of China	China	Hong Kong, China	Republic of Korea	Singapore	Thailand	Malaysia	India	Pakistan	Bangladesh	Sri Lanka
Exporting country or area												
Japan		-3.17	9.27	-3.87	-0.74	-7.68	-5.00	-6.66	-3.43	-9.96	8.82	-10.26
China	9.00	10.14		1.54	8.22	7.58	11.70	13.78	19.37	4.28	8.23	12.00
Hong Kong, China	-21.34	-3.58	-5.65		-5.52	-23.92	-14.83	-9.85	3.58	-18.78	-8.58	-15.11
Republic of Korea	2.81	6.05	7.60	-5.25		-8.41	-4.72	-11.87	5.25	-0.27	2.74	-6.91
Singapore	1.37	2.68	7.01	-2.59	6.14		-2.01	-0.81	5.21	7.41	11.10	-.022
Thailand	3.35	4.90	12.49	-0.90	5.54	-4.56		2.18	12.35	3.25	14.11	-1.39
Malaysia	4.57	-1.45	19.50	-1.87	3.97	-1.45	4.43		7.56	-11.10	-2.57	6.33
India[a]	-1.24	-0.49	5.54	11.71	-0.68	4.89	16.26	8.05		9.83	6.47	10.48

Source: Calculated from the data available in PC-TAS on CD-ROM (1997-2001), International Trade Centre, UNCTAD/WTO.

Note: Growth rate implies compound average growth rate in percentage.

[a] Growth rate is for the period 1997-2000.

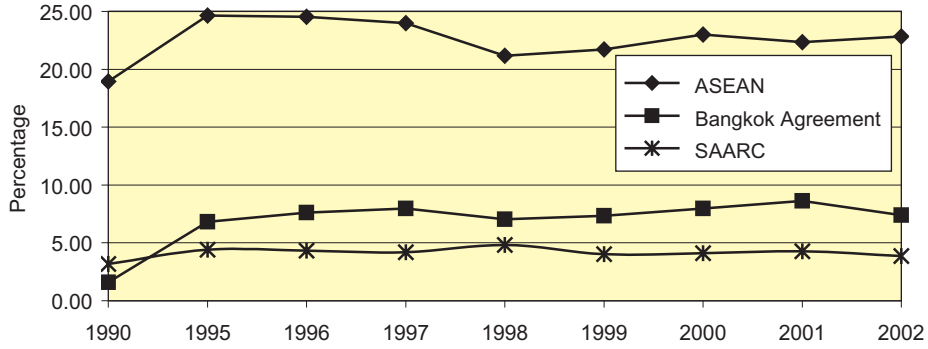
period some of these countries enjoyed high bilateral export growth. The analysis indicates that a future integration among the economies of North-East, South-East and South Asia will transform the entire region into a large growing market and most of the countries will benefit substantially.

Analysis of export share

The Intra-subregional export share in the Asia region has not changed much in the last 20 years (ADB, 2002). Most of the Asian preferential trade areas

have a relatively low share of intra-bloc exports because their trade is mostly with non-members such as the United States of America, Japan and the European Union. Throughout the 1990s, even after the introduction of AFTA, the intra-ASEAN export share were hovering between 22 and 24.5 per cent (see figure 1). Exports among ASEAN countries grew by almost 11 per cent annually in the 1990s after the implementation of the CEPT scheme[16] but it remains unclear whether this was a result of CEPT or the rapid GDP growth causing a rise in consumption. Intraregional trade fell slightly after the 1997 economic crisis (ASEAN, 2003). The extent of AFTA's success in expanding trade is still under debate. De Rosa (1995), using a simulated model for five original ASEAN members, has shown that AFTA brings only small increases in trade compared with the effect of MFN tariff reductions because most of the ASEAN countries' important partners are non-member industrialized countries. The simulation also shows that the expansion of production and exports in various economic sectors is about the same under AFTA and MFN. Other studies like Fukase and Martin (2001) also argue that MFN reduction would have delivered larger benefits to ASEAN members. Hence, it is gradually becoming necessary for ASEAN to expand its trade relationship through trade agreements with other Asian countries to harness the potential for trade. It may also be noted that despite the high export growth rate among the Bangkok Agreement countries, their intra-bloc trade share always remained below 9 per cent in the 1990s implying that much of the potential is still to be realized.

Figure 1. Movement of intra-group export share



Source: Calculated from, *UNCTAD Handbook of Statistics on CD-ROM,* 2003.

[16] The 2001 package of tariff cuts covered almost 84.7 per cent of products in IL, 13.4 per cent in TEL, 1.3 per cent in GEL and 0.6 per cent in SL.

Studies of Asian RTAs suggest that they cannot be regarded as natural trade blocs (ESCAP, 2000) but also indicate that there is a greater economic logic behind the groupings that have already developed than among possible alternative groupings. Trade flows within subregions are generally low for big countries such as Bangladesh, India and Pakistan within SAARC. The share of intra-group trade was higher for smaller members in each grouping, for example, Maldives and Nepal in SAARC, Brunei Darussalam and the Lao People's Democratic Republic, Myanmar and Viet Nam in ASEAN. The trade share of the Lao People's Democratic Republic with its partners in the subregion was as high as 66 per cent in 1997 (ESCAP, 2000). This highlights that RTAs provide goods from small countries considerable opportunities in terms of access to the markets of other member countries.

It is important to note that countries of North-East Asia trade among themselves more intensively as expressed in the share of their total exports (see table 6) in respective countries. Among Bangkok Agreement countries, China and the Republic of Korea's export share in each other's market is much higher than their export share in South Asian countries despite the rising export growth among the members in general. The intra-SAARC export share has remained at less than 5 per cent even after completion of four rounds of SAPTA in 2002. Under SAPTA, tariffs have been reduced on more than 5,000 products and SAARC rules of origin have been relaxed but the depth of tariff cuts and product coverage were insufficient to increase trade. However, ASEAN members such as Thailand and Malaysia are experiencing a relatively higher export share in the Japanese market. India is also exporting around 4 and 6 per cent of its total export to Japan and Hong Kong,

Table 6. Percentage share of total exports of selected countries or areas in different export destinations in 2001

Destinations	*Japan*	*Taiwan Province of China*	*China*	*Hong Kong, China*	*Republic of Korea*	*Singapore*	*Thailand*	*Malaysia*	*India*	*Pakistan*	*Bangladesh*	*Sri Lanka*
Exporting country or area												
Japan		6.01	7.68	5.77	6.27	3.65	2.95	2.73	0.48	0.12	0.11	0.07
China	16.90	1.88		17.49	4.70	2.18	0.88	1.21	0.71	0.31	0.36	0.15
Hong Kong, China	2.60	3.87	32.25		1.19	1.79	0.73	1.13	0.29	0.04	0.37	0.22
Republic of Korea	10.97	3.88	12.09	6.28		2.71	1.23	1.75	0.94	0.24	0.44	0.22
Singapore	7.67	5.15	4.38	8.89	3.85		4.35	17.35	2.23	0.30	0.70	0.32
Thailand	15.30	2.94	4.40	5.07	1.89	8.12		4.18	0.74	0.27	0.35	0.22
Malaysia	13.30	3.62	4.34	4.57	3.34	16.95	3.82		1.79	0.45	0.19	0.21
India[a]	4.03	0.88	1.87	5.93	1.01	1.97	1.19	1.36		0.42	2.10	1.44

Source: Calculated from the data available in PC-TAS on CD-ROM (1997-2001), International Trade Centre, UNCTAD/WTO.

[a] Owing to non-availability of data, India's share is calculated for the year 2000.

China respectively, indicating that trade cooperation may improve the situation as the current export growth of India in some North-East Asian economies is quite encouraging. On the contrary, most of the selected countries have a very low export share in South Asia, which may be because of the smaller size of markets or prevailing high trade barriers in South Asia. To promote trade-induced growth, South Asian economies need to further their cooperation with other Asian countries.

Export diversification

The export diversification (DX) index for a country is defined as: $DX_j = (\text{sum } |h_{ij} - h_i|)/2$, where h_{ij} is the share of commodity i in the total exports of country j and h_i is the share of the commodity in world exports.[17] Export diversification is important for developing countries because many of them are often highly dependent on relatively few primary commodities for their export earnings. Unstable prices for these commodities may subject a developing country exporter to serious terms of trade shocks. Hence, diversification into new primary export products is generally viewed as a positive development. The strongest effects are normally associated with diversification into manufactured goods, and its benefits include higher and more stable export earnings, job creation and learning effects, and the development of new skills and infrastructure that would facilitate the development of even newer export products. Table 7 illustrates the dynamics of export diversification of selected Asian countries. It is important to note that during the 1990s the number of products exported from South Asian countries and from some South-East Asian countries such as Indonesia, Malaysia, the Philippines and Thailand increased significantly. This implies that involvement of these countries in international trade increased. At the same time their diversification increased whereas concentration decreased, which is reflected in a falling index, implying that export shares of the country have come closer to the world export share structure. Improvement in export diversification is quite significant for countries such as India, Indonesia, the Republic of Korea and Thailand.

UNCTAD uses the concentration index to measure the diversification of exports. This is also included in table 7. The concentration index, or Hirschman (H) index, is calculated using the shares of all three-digit products in a country's exports, as follows: $H_j = \text{sqrt } [\text{sum } (x_i/X_t)^2]$, where x_i is country j's exports of

[17] This index is a modified Finger-Kreinin measure of similarity in trade. For more information, please consult Finger and Kreinin (1979).

Table 7. Export diversification and concentration in selected countries or areas in Asia

Indicator	1990			1995			2001 (2000 for Nepal and India)		
	Number of commodities exported	Diversification index	Concentration index	Number of commodities exported	Diversification index	Concentration index	Number of commodities exported	Diversification index	Concentration index
Country or area									
Japan	219	0.443	0.139	224	0.405	0.124	225	0.383	0.135
Bangladesh	58	0.836	0.253	75	0.826	0.264	96	0.853	0.308
Brunei Darussalam	11	0.865	0.647	NA	NA	NA	NA	NA	NA
China	229	0.478	0.080	233	0.484	0.063	232	0.465	0.077
Hong Kong, China	174	0.608	0.146	172	0.583	0.153	170	0.644	0.207
Taiwan Province of China	216	0.518	0.086	220	0.470	0.110	218	0.493	0.156
India	207	0.632	0.142	220	0.606	0.137	225	0.581	0.130
Indonesia	198	0.668	0.267	210	0.607	0.146	225	0.504	0.126
Republic of Korea	211	0.525	0.103	219	0.436	0.148	214	0.419	0.140
Malaysia	218	0.582	0.184	227	0.519	0.178	229	0.504	0.200
Maldives	NA	NA	NA	11	0.492	0.401	10	0.488	0.385
Nepal	33	0.816	0.453	38	0.801	0.437	52	0.774	0.305
Pakistan	140	0.840	0.226	130	0.849	0.242	154	0.825	0.220
Philippines	180	0.689	0.285	186	0.641	0.356	204	0.642	0.387
Singapore	228	0.501	0.194	228	0.490	0.211	223	0.492	0.247
Sri Lanka	128	0.775	0.279	NA	NA	NA	151	0.770	0.236
Thailand	207	0.599	0.098	222	0.492	0.089	221	0.405	0.100

Source: *UNCTAD Handbook of Statistics on CD-ROM,* 2003.

Note: The number of products exported is reported at three-digit SITC, Revision 2 level; this figure includes only those products that are greater than US$ 100,000 or more than 0.3 per cent of the country's total exports.

product i (at the three-digit classification) and X_t is country j's total exports.[18] The lower the index, the less concentrated are a country's exports. Lower concentration is observed for China, India, Indonesia, Japan, the Republic of Korea and Thailand. Slightly more concentration is noticed for Malaysia, Pakistan and Singapore.[19] The benefits of the diversified exports of these countries can be further augmented regionally if they mutually agree to reduce their trade barriers. In that context, a harmonization among different subregional trade agreements and cross subregional

[18] The index has been normalized to account for the number of actual three-digit products that could be exported. Thus, without normalization the maximum value of the index is 239 (the number of individual three-digit products in the Standard International Trade Classification (SITC), revision 2), and its minimum (theoretical) value is zero, for a country with no exports. For details of the normalization process refer to the UNCTAD *Handbook of Statistics on CD-ROM, 2003*.

[19] The value of these indices depend on the number of products and they are not suitable for strict time series comparison.

efforts like BIMST-EC, the Bangkok Agreement and ASEAN+3 will open up a new dynamism in regional trade in Asia. Important to note is that selected South Asian countries such as India, Pakistan and Sri Lanka have diversified exports as expressed in the indicators described in table 7. This indicates that the subregion is gradually moving away from the clutches of primary product bottlenecks towards offering a more diversified export basket. Other subregions need to tap this positive development as this indicates indirectly that South Asian products are gradually becoming competitive in the world market.

Trade complementarities

To understand the dynamics and prospects of trade among a group of countries or within a trade bloc, the trade complementarity (TC) index can be used as valuable information. The index shows how well the structures of a country's imports and exports match those of its partners. Its appeal is also that its values for countries considering the formation of a regional trade agreement can be compared with others that have formed or tried to form similar arrangements. The TC between countries k and j is defined as: $TC_{kj} = 100 - \text{sum}\ (|m_{ik} - x_{ij}|/2)$ where x_{ij} is the share of good i in global exports of country j and m_{ik} is the share of good i in all imports of country k. The index is zero when no goods are exported by one country or imported by the other and 100 when the export and import shares exactly match.[20] It is important to note that the TC index is calculated to match the export-import basket of two countries comparing their global export and import shares; it does not take into account existing bilateral trade flows between two countries only. Hence, the TC index takes into account the possible trade cooperation effect through measures such as trade barrier reduction, foreign investment, technology transfer and trade facilitation.

In this section, the TC index has been calculated (see table 8) to understand the prospects and potential of a future integration between South and East Asia. SAARC countries have almost the same TC index as other members and countries from North-East Asia. The index of SAARC countries in North-East Asia is also higher than their index in ASEAN. This provides a strong point for these countries to forge a closer cooperation with the countries of North-East Asia. Maldives exports only a few products, which mainly include seafood, fish, meat, apparel and have a high import share in East Asia. India consistently has a higher TC index in all three subregions compared with other SAARC members. North-East Asian countries China; Hong Kong, China; Japan; Republic of Korea; and Taiwan Province of China have an even higher TC index for the SAARC region. The index increased

[20] For details see Hoekman, Matoo and English (2003).

Table 8. Average trade complementarities of Asian countries or areas in different subregions

		SAARC	North-East Asia	ASEAN			SAARC	North-East Asia	ASEAN
Bangladesh	1997	19.97	19.25	13.64	Republic of Korea	1997	53.10	64.54	64.36
						2001	55.97	66.96	68.77
India	1997	43.92	42.33	36.28	Taiwan	1997	46.27	59.83	63.93
	2000	46.71	42.32	39.31		2001	50.32	60.70	65.49
Maldives	1997	51.49	50.41	48.95	Brunei Darussalam	1997	24.96	21.51	19.23
	2001	49.57	50.83	49.30					
Sri Lanka	1997	20.17	24.40	18.34	Indonesia	1997	43.11	44.44	33.82
	2001	21.66	20.15	15.17		2001	47.17	53.87	46.28
Pakistan	1997	20.82	18.56	12.78	Malaysia	1997	46.90	58.94	62.24
	2001	27.39	19.83	15.77		2001	48.61	62.74	67.48
China	1997	48.04	59.58	52.94	Philippines	1997	37.26	53.27	54.57
	2001	52.66	65.31	57.78		2001	39.05	54.81	56.79
Hong Kong, China	1997	35.77	45.04	43.74	Singapore	1997	44.36	59.87	64.68
	2001	34.86	39.57	35.60		2001	47.61	63.67	65.79
Japan	1997	45.24	60.07	64.42	Thailand	1997	51.98	63.46	59.36
	2001	49.64	63.25	60.80		2001	58.10	65.16	61.09

Source: Calculated from the data available in PC-TAS on CD-ROM (1997-2001), International Trade Centre, UNCTAD/WTO.

Note: Owing to the non-availability of export data, calculations for Pakistan, Sri Lanka and Taiwan Province of China have been done taking into consideration world import from these countries.

in the period 1997-2000 indicating a stronger logic for trade cooperation between these two subregions. An increasing TC index is visible also for ASEAN members in SAARC. Thailand's TC index for SAARC reached 58 in 2001, which is the highest among South-East Asian countries. This justifies the importance of Thailand in a group such as BIMST-EC. The high TC index of China, India and the Republic of Korea in South and North Asia points to the reason for a high trade growth of the Bangkok Agreement countries as described earlier.

Most of the South-East and North-East Asian countries have a higher TC index in each others' markets, implying a stronger complementarily between exports and imports of these countries. On that basis, further cooperation is being promoted through ASEAN+3. Proposals have emerged within the region for an ASEAN+3

FTA.[21] To promote further trade cooperation among Asian countries attention should be given not only to trade barrier reduction but also to trade facilitation, foreign investment, technology transfer and trade-related infrastructure development.

Export of services

Of late, many Asian countries are actively engaged in export of services. Though most of the services are exported to the West, a regional market may be explored. As the region is experiencing a more than world average growth rate with countries actively participating in the liberalization process, a service market will sooner or later become quite attractive and specialized services will be required at lower costs. Table 9 provides the export and import figures of total services of selected Asian countries. Total services reported in the table include 11 main service categories, according to the definition in the fifth edition of the International Monetary Fund *Balance of Payments Manual* (BPM5, 1993). The categories included are transport, travel, communications, construction, computer and information services, financial services, insurance, other business services, royalties and licence fees, personal, cultural and recreational services and government services, i.e. China; Hong Kong, China; India; the Republic of Korea; and Taiwan Province of China[22] registered high export growth rates in services. Major service importing countries are China; Hong Kong, China; Indonesia; Japan; Malaysia; the Republic of Korea; and Taiwan Province of China. The import market is growing rapidly in South Asian countries such as India and Sri Lanka as reflected in the service import growth rate. In North-East Asia, service imports in China and the Republic of Korea grew more than 5 per cent from 1995 to 2000.

Country-wise export of major services is reported in table A3 in the appendix. China's high growth in travel and communication services mainly reflects the country's intense people-to-people linkage and business dynamism with other countries. However, Chinese construction and other business services may soon be lucrative to other countries. India's high service export growth is due chiefly to professional and technical services which include the services of Indian IT professionals. The export of financial services from Japan and Hong Kong, China and of insurance from Singapore has shown that these countries can offer these services for the growth of the region provided the region is properly equipped with the basic financial infrastructure. Thailand and China have a distinct advantage in

[21] The TC index for East Asia has been calculated also in the World Bank study "East Asia integrates: a trade policy agenda for shared growth" by K. Krumm and H. Kharas (2004).

[22] Cambodia, the Lao People's Democratic Republic and Maldives also have high growths of tourism resulting in high growths of export of services.

Table 9. Export and import of services in selected Asian countries or areas
(Millions of US dollars)

	Flow	1990	1995	1998	1999	2000	2001	2002	1995-2000 Growth (percentage)
Bangladesh	Exports	391.568	698.194	723.927	777.662	815.083	752.201	893.678	3.14
	Imports	700.451	1 531.22	1 237.09	1 396.72	1 620.21	1 521.51	1 478.13	1.14
China	Exports	5 855	19 130.3	23 895	26 248	30 430.5	33 334	39 744.5	9.73
	Imports	4 352	25 222.8	26 672	31 589	36 030.6	39 267	46 528	7.39
Hong Kong, China	Exports	..	..	35 132.4	35 983	40 759.1	41 428	45 158.5	6.48
	Imports	..	..	24 990.5	23 725.5	24 584.2	24 314	24 204.4	-0.80
Taiwan Province of China	Exports	7 008	15 016	16 768	17 259	19 952	19 495	21 240	5.85
	Imports	14 658	24 053	24 169	24 405	26 930	24 700	25 161	2.29
India	Exports	4 624.86	6 774.72	11 691.1	14 509	18 330.5	..	..	22.03
	Imports	6 089.55	10 267.8	14 539.9	17 271.3	19 912.9	..	..	14.16
Indonesia	Exports	2 488	5 469	4 479	4 599	5 213	5 500	6 574.48	-0.95
	Imports	6 056	13 540	11 961	11 573	15 011	15 880	17 116.8	2.08
Japan	Exports	41 384.1	65 274	62 412	60 998.2	69 238.1	64 516.2	65 712	1.19
	Imports	84 281.4	122 626	111 833	115 158	116 864	108 249	107 940	-0.96
Republic of Korea	Exports	9 636.9	22 827.3	25 564.6	26 528.8	30 533.6	29 054.9	28 142.6	5.99
	Imports	10 251.8	25 806.1	24 540.5	27 179.8	33 422.8	32 882.5	35 603.2	5.31
Malaysia	Exports	3 858.96	11 601.6	11 516.7	11 919.3	13 940.5	14 455	..	3.74
	Imports	5 484.54	14 980.8	13 126.7	14 735.3	16 747.4	16 656.6	..	2.25
Pakistan	Exports	1 429.29	1 857.25	1 404	1 373	1 380	1 459	2 469	-5.77
	Imports	2 072.86	2 937.53	2 261	2 146	2 252	2 330	2 239	-5.18
Philippines	Exports	3 244	9 348	7 477	4 803	3 972	3 148	3 056	-15.73
	Imports	1 761	6 926	10 107	7 515	6 402	5 198	4 320	-1.56
Singapore	Exports	12 810.8	29 648.6	18 124.5	23 689.9	26 761.4	26 168.3	..	-2.03
	Imports	8 641.55	17 367.2	17 070.7	19 234.5	21 693.7	20 442.8	..	4.55
Sri Lanka	Exports	439.631	819.205	916.598	964.316	938.71	1 355.45	1 268.3	2.76
	Imports	639.162	1 199.11	1 361.64	1 413.68	1 621.45	1 180.16	997.02	6.22
Thailand	Exports	6 419.02	14 845.2	13 155.6	14 635.1	13 868.2	13 024.3	15 319.1	-1.35
	Imports	6 309.19	18 803.8	11 998.3	13 582.8	15 460.3	14 619.4	16 721.7	-3.84
Viet Nam	Exports	..	..	2 616	2 493	2 702	2 810	2 948	3.03
	Imports	..	..	3 146	3 040	3 252	3 382	3 698	4.12

Source: *UNCTAD Handbook of Statistics on CD-ROM,* 2003.

Note: The growth rate for Hong Kong, China and Viet Nam is calculated for the period 1998-2002.

offering construction services to the region as reflected in their high export growth. As for shipping and other ocean logistics Japan, the Philippines, the Republic of Korea and Singapore are the major exporters. It needs to be pointed out that the region is growing not only in terms of services export but also in services market. There have been only few attempts[23] at the regional level to harness the potentiality. As noted earlier, exporting as well as importing countries are spread throughout the South, South-East and North-East subregions, and a special effort is required to open up the services sector in stages regionally through region-wide cooperation. As the service sector is still a sensitive issue in many countries, region-wide agreement may not be possible all at once, however, sector wise a regional agreement may be pursued through a positive list.

V. CONCLUDING REMARKS

The article highlights the potentiality among countries of SAARC, ASEAN and the North-East Asian subregion for further trade cooperation. It also critically reviews the institutional set-up of major trade blocs in the region and emerging trends. The analysis of the existing cooperation and trade performance points out the need to develop a cooperation strategy as countries of these subregions are actively trading with each other. The article draws the following conclusions.

- The current trend shows that the relatively developed countries of South-East and North-East Asia would like to engage in intense cooperation for integration. However, South Asian countries are linked haphazardly either through bilateral agreements or through cross-subregional agreements such as BIMST-EC and the Bangkok Agreement. The BIMST-EC FTA will be operational from July 2006 and Bangkok Agreement members have recently finished their third round of negotiations. Despite slow progress, trade among members of these groups, especially among Bangladesh, China, India, the Republic of Korea, Sri Lanka and Thailand, has shown a positive trend. A consolidation of current efforts will give headway to this integration process.

[23] The ASEAN Framework Agreement on Services was signed in 1995. It aimed to enhance cooperation in services amongst members in order to improve the efficiency and competitiveness, diversify production capacity and supply and distribution of services of their service suppliers within and outside ASEAN, eliminating the restrictions to trade in services. At present, ASEAN has concluded four packages of services commitments through three rounds of negotiations since 1 January 1996. Services included are air transport, business services, construction, financial services, maritime services, telecommunications and tourism.

- The result of SAPTA has not been significant among members. SAFTA may be seen as a culmination of bilateral agreements such as the India-Sri Lanka and India-Bangladesh trade pacts. SAFTA and the BIMST-EC FTA also are expected to ease the existing high trade barriers (MFN rates) in South Asian countries. As trade barrier reduction time plans are already in hand, ASEAN may consider the extension of the ASEAN+India arrangement, with gradual flexibility to other South Asian countries. This may be seen as a realizable goal in the near future and needs to be tuned with SAFTA and BIMST-EC FTA time line. The "prosperity" document aiming to create the ASEAN-India FTA by 2011 (2016 for LDCs)[24] definitely will be a new beginning of the relationship between South and South-East Asia. At the same time, looking at the trade potentiality, SAARC may consider extraregional agreements in the form of SAARC+1 arrangements, which will ultimately serve the same purpose.

- The 1998 proposal for a free trade agreement between Japan and the Republic of Korea marked a historic shift by these two countries from their long-standing aversion to involvement in PTAs. Since, both countries have actively pursued BTAs with many other countries in the region. Proposals have also emerged within the region for an ASEAN+3 FTA between ASEAN members, China, Japan and the Republic of Korea. This arrangement may result in creating an East Asian trade bloc (Scollay, 2003). The ASEAN+3 framework currently has been making steady headway towards future undertakings of regional cooperation including building a durable institutional framework for region-wide dialogue and cooperation. ASEAN members are engaging in regular discussions (in Bali in 2003 and Vientiane in 2004) with their dialogue partners, China, India, Japan and the Republic of Korea for further cooperation in various fields.

- The analysis shows that ASEAN as a collection of small countries would like to be a "hub" and become connected with different countries separately through agreements such as the ASEAN-China or ASEAN-India arrangements. The recently signed ASEAN-China agreement of trade in goods (2004) further intensifies the ASEAN philosophy of integration, with a target of creating the world's largest

[24] For details see the ASEAN website at: www.aseansec.org.

FTA by 2010 (2015 for LDCs) catering to almost 2 billion people. The shape of the traditional "hub and spokes" architecture will depend on the gravitational force between ASEAN as a bloc and the larger countries in the region. ASEAN, with its longer experience in promoting RTAs in Asia, could integrate itself separately with South and North-East Asia at a different speed but targeting the same goal.

- The logic of further cooperation receives support from China's trade growth in India and other South Asian countries. The Republic of Korea's growth in India and Japan's growth in Bangladesh and China are equally encouraging. India's export to China and Hong Kong, China is also noteworthy. It is important to note that SAARC has a better TC index in North-East Asia compared with ASEAN, which implies a higher trade complimentarity in the form of an export-import match between North-East and South Asia. Between 1997 and 2001, the TC index of SAARC in North-East Asian countries showed some improvement, also indicating that further trade cooperation may provide more benefits. In general, ASEAN countries have a closer economic relationship with North-East Asian countries, which is reflected in a high TC index. At the same time, some ASEAN members such as Singapore and Thailand show a significant improvement in their TC index in SAARC. Malaysia's export growth in India and Sri Lanka is also noteworthy. South Asian countries are also involved in diversifying their export baskets, indirectly reflecting their improvement in competitiveness. All of these observations intensify the requirement for further trade cooperation between South, South-East and North-East Asia.

- The study also reveals that some major service exporter and importer countries are also located in Asia. There are few attempts to include services in trade negotiation by the selected trade blocs, except by ASEAN. As the service sector is still a sensitive issue in many countries, a regional agreement may be pursued sector-wise through a positive list.

- Asian regionalism as a whole has been complicated by the increasing number of agreements in the form of BTAs and EPAs in addition to FTAs and their coverage and aspirations. This is because different FTA time lines overlap with each other and there are a large number of least developed countries that require special

treatment. As a result, short- and medium-term efficiency gains from these efforts are unclear. However, this lays the foundation for the eventual integration of all countries in the region. For this reason, the consolidation of agreements is necessary. However, to achieve further economic integration in Asia, bigger countries and stronger economies need to take the lead (ESCAP, 2004a). A successful Asian integration will pave the way for further benefits once this reduces the MFN tariff rates. Many least developed countries in the region are not WTO members. It is the responsibility of all these blocs to create a level playing field by ensuring effective and meaningful participation of these countries with less possibility of backsliding. The implementation of the Doha Agenda in this context is absolutely necessary to develop the capacities of weaker countries so that they can participate in the negotiation process effectively. A two-track approach, helping ASEAN+3 to ahead and in stages gradually link with SAARC, possibly through a sector-by-sector approach, will benefit the countries of the Asian region from the vibrant trade relationship among themselves.

Table A1. Exports of selected Asian countries or areas and regional groups

(Thousand US dollars)

	1980	*1985*	*1990*	*1995*	*1999*	*2000*	*2001*	*2002*
ASEAN	71 463 320	72 115 560	144 073 694	320 502 605	356 600 028	425 151 238	384 363 512	160 385 239
Bangkok Agreement	34 708 333	56 918 409	148 495 049	313 003 191	383 985 347	477 248 576	471 439 043	491 134 266
SAARC	12 147 803	14 031 406	27 138 379	47 493 620	54 075 142	65 378 463	64 658 149	14 626 898
Bangladesh	740 367	973 656	1 556 435	3 407 241	3 918 997	4 691 657[a]	5 681 769	NA
Bhutan	8 836[a]	989[a]	75 000[a]	103 531[a]	115 947[a]	63 490[a]	91 038[a]	NA
India	7 510 634	8 949 523	17 858 807	31 649 957	36 671 964	45 249 648	44 306 555	NA
Maldives	15 646[a]	24 910[a]	52 000[a]	49 805	63 951	76 195	76 578	90 757
Nepal	74 584[a]	128 523	180 362	359 218	524 294	708 776	737 579[a]	NA
Pakistan	2 754 731[a]	2 707 600	5 522 077	8 124 916	8 312 710	9 129 914	9 177 957	9 852 719
Sri Lanka	1 043 005	1 246 204	1 893 698	3 798 952[a]	4 467 279	5 458 783[a]	4 586 673[a]	4 683 422
Brunei Darussalam	4 470 776[a]	2 676 573[a]	2 147 752	2 088 587[a]	1 327 998[a]	2 585 971[a]	2 410 998[a]	NA
Malaysia	12 944 694	15 637 884	29 453 234	73 778 178	84 511 923	98 229 800	88 004 508	NA
Myanmar	447 787[a]	356 087[a]	472 331[a]	952 740[a]	1 124 982[a]	1 621 362[a]	2 271 890[a]	NA
Indonesia	21 908 887	18 586 717	25 675 334	45 417 984	48 665 445	62 124 003	56 316 868	NA
Philippines	5 750 882	4 588 751	8 090 699	17 173 834	35 036 885	38 078 242	32 149 876	35 208 156
Singapore	19 375 474	22 845 825	52 730 131	118 263 153	114 681 779	137 805 771	121 753 785	125 177 083
Thailand	6 369 169	7 057 087	23 004 009	56 344 554	58 423 067	68 786 657	65 113 283	NA
China	7 916 609[a]	15 412 183	62 091 405	148 779 565	194 930 863	249 202 562	266 098 210	325 595 965
Hong Kong, China	13 671 595	16 599 161	29 002 408	29 945 853	22 380 644	23 536 718	20 272 853	18 327 511
Taiwan Province of China	19 838 002	30 624 792	67 041 281	111 343 290	119 395 220	148 727 464	122 781 687	NA
Japan	129 807 031	175 901 305	286 947 524	442 937 420	417 610 187	479 247 654	403 363 667	416 715 316
Republic of Korea	17 451 083	30 282 843	65 015 704	125 056 486	143 685 442	172 267 493	150 434 533	160 854 879

Source: *UNCTAD Handbook of Statistics on CD-ROM,* 2003.

[a] Estimates.

Table A2. Dynamics of exports in selected regional groups in Asia and the Pacific

(Millions of US dollars)

	Partner	1990	1995	1996	1997	1998	1999	2000	2001	2002
ASEAN	Intra-trade of group	27 365	79 544	84 049	85 362	69 809	77 892	98 059	87 902	94 760
	Rest of the region[a]	53 233	110 255	122 895	125 664	108 031	122 335	152 861	143 626	150 372
	Rest of the world	117 001	243 243	258 379	270 506	260 105	281 003	328 299	305 306	320 348
	Total trade of group[b]	144 365	322 786	342 429	355 868	329 914	358 896	426 359	393 207	415 108
Bangkok Agreement	Intra-trade of group	2 429	21 728	25 005	29 482	25 240	28 224	37 895	40 801	44 470
	Rest of the region[a]	74 110	149 979	152 405	168 855	152 059	161 717	201 897	197 306	231 781
	Rest of the world	149 588	296 317	303 605	340 526	333 882	355 879	437 191	431 646	556 531
	Total trade of group[b]	152 016	318 046	328 610	370 008	359 122	384 103	475 086	472 447	601 001
SAARC	Intra-trade of group	863	2 024	2 144	2 174	2 466	2 180	2 614	2 827	2 697
	Rest of the region[a]	7 133	14 193	16 026	15 960	14 373	15 564	18 511	20 137	20 947
	Rest of the world	26 368	43 808	47 285	49 802	48 789	51 960	61 213	63 213	67 321
	Total trade of group[b]	27 231	45 832	49 429	51 976	51 255	54 140	63 827	66 040	70 018

Source: *UNCTAD Handbook of Statistics on CD-ROM,* 2003.

[a] Region in "Rest of the region" refers to the UNCTAD definition of the Asian region.

[b] Total trade of group is sum of "intra-trade of group" and "rest of the world".

Table A3. Export of selected services from some Asian countries or areas

(Millions of US dollars)

	Sector	1990	1995	1998	1999	2000	2001	2002	1995-2000 Growth (percentage)
Bangladesh	Total services	392	698	724	778	815	752	894	3.14
	Transport	38	70	92	94	91	72	93	5.41
	Travel	19	25	52	50	50	48	57	15.01
	Other business services	238	373	62	53	99	98	101	-23.26
China	Total services	5 855	19 130	23 895	26 248	30 431	33 334	39 745	9.73
	Transport	2 706	3 352	2 300	2 420	3 671	4 635	5 720	1.83
	Travel	1 738	8 730	12 602	14 098	16 231	17 792	20 385	13.21
	Communications	159	756	819	590	1 345	271	550	12.23
	Construction	..	..	594	985	602	830	1 246	20.36[a]
	Other business services	918	3 740	6 941	7 410	7 663	8 448	10 419	15.43
Hong Kong, China	Total services	..	..	35 132	35 983	40 759	41 428	45 159	6.48[a]
	Transport	..	..	10 984	11 502	12 772	..	..	7.83[b]
	Travel	..	..	7 574	7 279	7 930	..	..	2.32[b]
	Other business services	..	..	12 403	13 193	15 952	..	..	13.41[b]
	Financial services	..	..	2 108	2 475	2 677	..	..	12.71[b]

Table A3 *(continued)*

	Sector	1990	1995	1998	1999	2000	2001	2002	1995-2000 Growth (percentage)
Taiwan Province of China	Total services	7 008	15 016	16 768	17 259	19 952	19 495	21 240	5.85
	Transport	2 323	4 548	3 656	3 605	4 063	3 529	3 710	-2.23
	Travel	1 741	3 287	3 372	3 571	3 738	3 990	4 229	2.60
	Insurance	146	418	699	376	607	404	563	7.75
	Financial services	..	..	712	680	805	514	757	1.54[a]
	Other business services	2 260	5 759	7 069	8 013	9 692	10 034	11 048	10.97
India	Total services	4 625	6 775	11 691	14 509	18 331	..	..	22.03
	Transport	959	1 890	1 773	1 844	1 882	..	..	-0.09
	Travel	1 558	2 582	2 949	3 010	3 168	..	..	4.18
	Insurance	123	170	230	238	249	..	..	7.87
	Other business services	1 967	2 120	6 096	8 892	12 289	..	..	42.12
Indonesia	Total services	2 488	5 469	4 479	4 599	5 213	5 500	6 574	-0.95
	Travel	2 153	5 229	4 255	4 353	4 974	5 276	5 285	-0.99
	Other services	265	240	224	246	239	224	300	-0.08
Japan	Total services	41 384	65 274	62 412	60 998	69 238	64 516	65 712	1.19
	Transport	..	22 506	21 270	22 927	25 599	24 007	24 022	2.61
	Travel	..	3 224	3 743	3 431	3 373	3 306	3 497	0.90
	Construction	..	6 559	7 736	5 729	5 849	4 793	4 625	-2.27
	Computer and information services	..	..	1 338	1 257	1 569	1 413	1 140	-3.93[a]
	Financial services	..	305	1 608	2 042	2 865	2 711	3 127	56.46
	Royalties and licence fees	..	6 005	7 388	8 190	10 227	10 462	10 422	11.24
	Other business services	..	24 437	17 078	15 811	17 709	16 245	17 401	-6.24
Republic of Korea	Total services	9 637	22 827	25 565	26 529	30 534	29 055	28 143	5.99
	Transport	3 179	9 272	10 204	11 466	13 687	13 180	13 073	8.10
	Travel	3 161	5 150	6 908	6 841	6 834	6 384	5 294	5.82
	Other business services	2 376	6 761	6 580	6 035	7 200	6 388	6 245	1.27
Malaysia	Total services	3 859	11 602	11 517	11 919	13 941	14 455	..	3.74
	Transport	1 198	2 466	2 271	2 492	2 802	2 748	..	2.59
	Travel	1 684	3 969	2 381	3 588	5 011	6 863	..	4.78
	Other business services	885	5 004	6 749	4 714	5 055	3 537	..	0.20
Pakistan	Total services	1 429	1 857	1 404	1 373	1 380	1 459	2 469	4.15[c]
	Transport	722	830	715	746	840	818	831	0.02[c]
	Communications	..	269	307	282	190	202	332	3.08[c]
	Other business services	333	178	171	131	136	144	218	2.94
Philippines	Total services	3 244	9 348	7 477	4 803	3 972	3 148	3 056	-15.73
	Transport	246	274	324	575	891	659	631	26.60
	Travel	466	1 136	1 418	2 554	2 134	1 723	1 740	13.44
	Other services	2 532	7 938	5 735	1 674	947	766	685	-34.64

Table A3 *(continued)*

	Sector	*1990*	*1995*	*1998*	*1999*	*2000*	*2001*	*2002*	*1995-2000 Growth (percentage)*
Singapore	Total services	12 811	29 649	18 125	23 690	26 761	26 168	..	-2.03
	Transport	2 225	4 957	4 456	4 577	5 336	4 720	..	1.48
	Travel	4 650	7 744	4 764	5 084	5 394	5 111	..	-6.98
	Insurance	88	354	435	501	957	1 119	..	21.98
	Other business services	5 756	16 500	8 372	13 447	14 995	15 142	..	-1.89
Sri Lanka	Total services	440	819	917	964	939	1 355	1 268	2.76
	Transport	169	335	403	403	400	384	514	3.59
	Travel	128	226	230	273	248	213	363	1.87
	Other business services	110	212	225	226	182	168	171	-3.04
Thailand	Total services	6 419	14 845	13 156	14 635	13 868	13 024	15 319	-1.35
	Transport	1 327	2 455	2 671	3 017	3 250	3 057	3 265	5.78
	Travel	4 325	8 035	6 174	7 028	7 483	7 075	7 901	-1.41
	Construction		19.19	94	236	229.7	296	244.5	64.29
	Other business services	630	3 844	3 919	4 042	2 600	2 298	3 593	-7.53

Source: UNCTAD Handbook of Statistics on CD-ROM, 2003.

[a] Growth rate for the period 1998-2002.

[b] for 1998-2000.

[c] for 1995-2002.

Other business services include merchanting and other trade-related services; operational leasing services; and miscellaneous business, professional and technical services.

.. means not availability of data.

REFERENCES

ASEAN, 2003. "Southeast Asia: a free trade area", available online at http://www.aseansec.org (20 November 2003).

Asian Development Bank, 2002. *Asian Development Outlook 2002* (Hong Kong, Oxford University Press).

De Rosa, D.A., 1995. *Regional Trading Arrangements among Developing Countries: The ASEAN Example,* IFPRI Research Report 103.

ESCAP, 2000. "Regional trading arrangements, partnership and the international trading system"; a. background in "Development through globalization and partnership in the Twenty First Century: an Asia-Pacific perspective for integrating developing countries and economies in transition on a fair and equitable basis", available online at http://www.unescap.org/tid/publication/chap3_2054.pdf (24 April 2003).

_____, 2004a. *Meeting the Challenges in an Era of Globalization by Strengthening Regional Development Cooperation* (United Nations publications, Sales No. E.04.II.F.24).

_____, 2004b. "Multilateralism free trade areas in Asia and the Pacific: progress, challenges and prospects", Document E/ESCAP/SCITI/1, 01.09.04, ESCAP.

Finger, J.M. and M.E. Kreinin, 1979. "A measure of export similarity and its possible uses", *Economic Journal,* vol. 89, No. 356, pp. 905-912.

Fukase, E. and W. Martin, 2001. "Free trade area membership as a stepping stone to development: the case of ASEAN", vol. 1, World Bank Discussion Paper, No. WDP 421, World Bank.

Hoekman, Bernard, A. Matoo and P. English (eds.), 2003. *Development, Trade and the WTO: A Handbook* (Washington, World Bank).

Kreinin, M.E. and M.G. Plummer, 2002. *Economic Integration and Development: Has Regionalism Delivered for Developing Countries?* (Cheltenham, Edward Elgar).

Krumm, K. and H. Kharas (eds.), 2004. *East Asia Integrates: A Trade Policy Agenda for Shared Growth* (World Bank IBRD and Oxford University Press).

Mohanty, S.K., 2003. "Implications of SAPTA on intraregional trade flows of the South Asian region: an empirical assessment", paper prepared for the ESCAP Expert Group Meeting on Regional Trade Agreements in Asia and Pacific, Bangkok, 30-31 January 2003.

SAARC, 2004. *SAARC: A Profile,* available online at http://www.saarc-sec.org.

Sakakibara, E. and S. Yamakawa, 2003. "Regional integration in East Asia: challenges and opportunities", Part I: History and Institutions, Policy Research Working Paper 3078, World Bank.

Scollay, R., 2003. "Economic impact of RTAs in Asia and the Pacific", paper prepared for the ESCAP Expert Group Meeting on Regional Trade Agreements in Asia and Pacific, Bangkok, 30-31 January 2003.

UNCTAD, 2003. *UNCTAD Handbook of Statistics* on CD-ROM, (United Nations publication, Sales No. E/F.05.II.D.2).

_____, 2003. PC-TAS (HS), CD-ROM for 1997-2001, International Trade Centre, UNCTAD/WTO.

WTO, 2003. "The changing landscape of RTAs", paper prepared by the WTO Secretariat for the Seminar on Regional Trade Agreements and the WTO, Geneva, 14 November 2003.

THE COOPERATION EFFECT CREATION SCHEME (CEC-SCHEME)

*Mario Arturo Ruiz Estrada**

The objective of this research paper is to present a suitable scheme of regional integration which can be applied between developing countries and less developed countries. This new scheme is called the Cooperation Effect Creation Scheme (CEC-Scheme). The CEC-Scheme demonstrates the basic conditions for regionalism to succeed in any form, whether open (free trade area) or closed (customs union), between developing countries and less developed countries. This paper proposes that implementation of the CEC-Scheme will facilitate the fulfilment of successful regionalism between developing and less developed countries.

The CEC-Scheme will generate the cooperative creating effect within the same regional bloc. In turn, the cooperative creating effect will generate the intraregional trade creating effect in the short term and the interregional trade creating effect in the medium term, which facilitate the growth of regionalism between developing countries and less developed countries (see figure 7).

I. COOPERATION EFFECT CREATION SCHEME (CEC-SCHEME)

The CEC-Scheme is an equitable and harmonious regional economic development scheme. It is based on the interaction between a series of socio-economic assistance programmes and the open regionalism concept. More precisely, the implementation of the CEC-Scheme involves the application and coordination of a series of programmes with social and economic implications, both with different priorities, as well as the application of open regionalism, for the

* The author is a PhD candidate in the doctoral programme in the Faculty of Economics and a Senior Research Assistant at the Asia-Europe Institute (AEI), University of Malaya, Kuala Lumpur, Malaysia.

integration of a group of developing and less developed countries. Its application can be tailored to the needs of the region concerned.

This interaction is based on four programmes: (a) Education and Technical Training Standardization Cooperation Module (M1); (b) Social and Productive Infrastructure Cooperation Module (M2); (c) Trade and Tourism Promotion Cooperation Module (M3); and (d) Public Administration Development Cooperation Module (M4). The coordination and systematic control of these modules can create favourable conditions for economic development at the regional level, thereby enabling countries in the region to compete in the international market.

As indicated above, the programme of the CEC-Scheme are adapted to the requirements and characteristics of any region. The general objective of the CEC-Scheme is to increase the intraregional trade and extraregional trade through improved productivity, efficiency and competitiveness. The principles behind the CEC-Scheme are non-discrimination, voluntarism, tolerance, respect and flexibility.

The CEC-Scheme has seven specific objectives, as follows:

(a) Through the combination of its four modules and the new focus on open regionalism, the CEC-Scheme seeks to serve as a new approach (regional economic development model) suitable for bringing together developing countries and less developed countries.

(b) The CEC-Scheme seeks to offer a basic mechanism to strengthen the weak areas of regional integration within the regions of developing countries and less developed countries according to the social, economic, technological and political situations in these countries. It also takes into account the internal and external conditions of each region.

(c) With its emphases on the new world order and international trade in the globalization process, as well as its adoption of a multi-functional and flexible structure, the CEC-Scheme presents a new focus for integrating developing countries and less developed countries into a single trading bloc.

(d) Taking education and training as the pillar of formation of regional human capital, the CEC-Scheme seeks to create an intraregional information/education exchange network, through the promotion of information exchange and coordination of academic programmes

at the elementary, high school, technical/vocational training, university and research levels.

(e) The CEC-Scheme seeks to generate equal benefits to every country in a region. This is done by attaching much attention to, first, the building of a regional physical infrastructure to help in the mobility of goods and the labour factor, and second, the search for efficient financial resources allocation and employment in the same region based on bilateral and multilateral negotiations in different intraregional projects.

(f) The CEC-Scheme places much emphasis on intraregional trade, investment and tourism promotion issues. It seeks to sell a single region in the international market by encouraging the active participation in international fairs and expositions, where all member countries of the region are grouped together in the same physical space and with the same patent. Thus, the region concerned has an image that is readily identifiable in the international market. In addition, the costs of trade, investment and tourism promotion in the same region are reduced.

(g) Through the standardization of training courses in different government and public institutions in each participating country in the region, the CEC-Scheme helps to identify solutions to problems in public administration and management, the legal system and public institutions.

II. THE COOPERATION EFFECT CREATION SCHEME (CEC-SCHEME) MODULES

Education and Technical Training Standardization Cooperation Module (M1)

The first programme in the CEC-Scheme is the Education and Technical Training Standardization Cooperation Module (M1). This programme uses an action framework to create regional human capital based on the standardization of education at the regional level. The action framework will standardize education in the region and concurrently create the conditions to produce a highly qualified, productive and competitive regional labour force. This pool of capable human capital in turn produces goods and services with high added value that can compete well in the international market in addition to serving as the pull factor for foreign direct investment (FDI) into the region.

There are four principal intraregional activities in this programme: (a) implementation of a literacy campaign in certain countries to raise their basic education level; (b) coordination and standardization of elementary and high school programmes; (c) development of technical training programmes; and (d) setting up a university information network based on joint research and development projects. Capitalizing on these four activities, the general objective of this programme is to lay a solid education foundation for the younger generations in the region so that they are able to compete internationally.

At the tertiary level, the development of technical training programmes aims to join with academic programmes in different scientific fields through the exchange of academic programmes at the intraregional level, including the exchange of professors and experts and joint research and development (R&D), in different scientific fields. This approach, accompanied by scholarships for the Masters and Doctoral programmes worldwide, together with joint R&D among universities in the same region, is more likely to meet with success. This approach should be complemented with the offer of postgraduate scholarships by universities in the region.

With regard to technical training, this programme proposes a common strategy for the coordination and standardization of training in different sectors such as agriculture, industry and services to be placed under the purview of technical institutes and engineering faculties of the universities in the region.

At the same time, information technology should be considered as the basis for regional education development, as it is instrumental to the information exchange in the coordination and standardization efforts of this education and technical training programme. It is responsibile for coordinating all programmes using information exchange at different levels based on the education and technical training standardization programme (see table 1 and figure 1).

Social and Productive Infrastructure Cooperation Module (M2)

This paper takes into consideration two types of infrastructure development between developing countries and less developed countries. It is especially pertinent to pay attention to these two types of infrastructure in countries with a limited budget for infrastructure. This is because inadequate infrastructure creates a constant poverty cycle in these countries and thereby inhibits production growth and human development within the region concerned (see table 2 and figure 1).

The general objective of this joint infrastructure programme between developing countries and less developed countries is to solicit financial support

Table 1. Education and Technical Training Standardization Cooperation Module (M1)

- Literacy campaign
- Standardization of elementary and high school programmes, especially in science, mathematics and the English language
- Tertiary level academic exchange and joint R&D network

  The standard programme for different science subjects
  Intraregional and foreign/interregional exchange of professors
  Intraregional student (information and exchange) network
  Intraregional scholarship information network
  Inter-university/intraregional research and development (R&D) assistance
- Standardization of technical training in the agricultural, industrial and service sectors
- Information technology cooperation and exchange

Figure 1. Cooperation Effect Creation Scheme (CEC-Scheme) modules

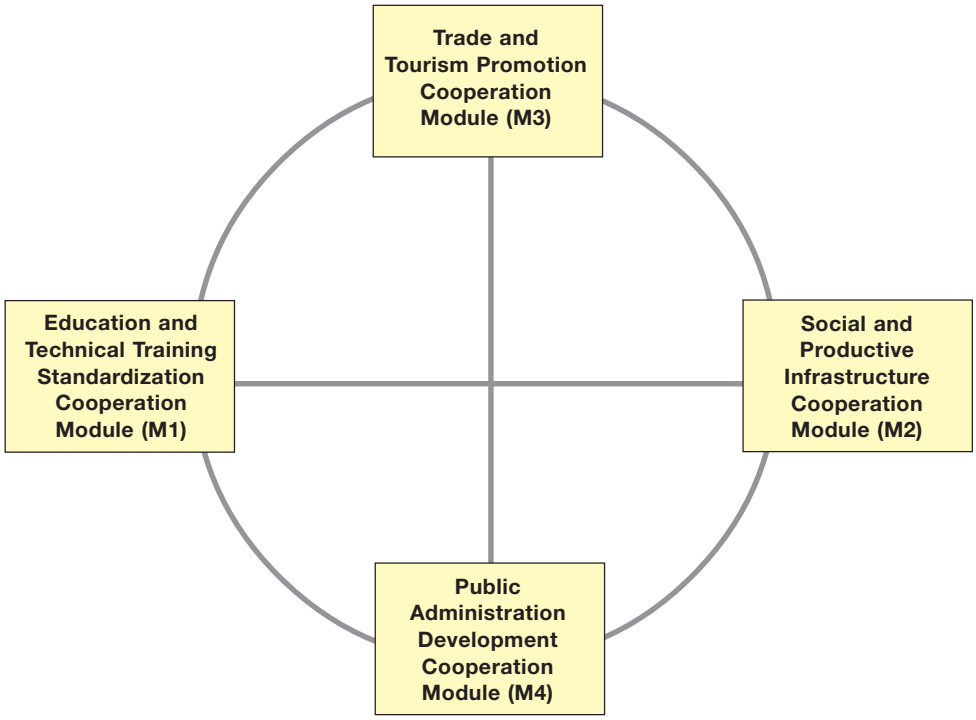


Table 2. Social and Productive Infrastructure Cooperation Module (M2)

Social infrastructure • Food and nutrition security cooperation • Immigration and security information network exchange • Medical assistance in the event of natural disasters and plagues • Human rights and ethnic cooperation programme • Education infrastructure in rural areas programme
Productive infrastructure • Intraregional transportation system connection at border points (airports, ports, highways, railways), energy, communications • Intraregional control and management of natural resources programme (removable and non-removable)

from international technical and financial organizations. These organizations may help to develop better infrastructure in the region under bilateral or regional negotiations. In this regard, this programme serves as a guide for developing the intraregional mega-project proposals to obtain credit from different international financial organizations.

The social infrastructure aspect of this module aims to promote efforts relating to social well-being, such as supplies of food and nutrition, medical assistance in times of natural disasters, ethnic mediation, the provision of education, as well as the development of a sound immigration database to address security issues. All these efforts can serve significantly as a base for economic development in any region concerned. The favourable social conditions resulting from the improvement of social infrastructures in developing and less developed countries will increase their bilateral trade. Productive infrastructure, the other aspect of this module refers to communication services, public transportation joint ventures and physical infrastructure (bridges, highways, railways, airports and ports) cooperation.

Trade and Tourism Promotion Cooperation Module (M3)

The third programme of the CEC-Scheme is the Trade and Tourism Promotion Cooperation Module (M3). The general objective of this programme is to concentrate efforts within the region to create a common module to promote trade, investment and tourism at an intraregional level overseas.

More specifically, this module of the CEC-Scheme seeks to expand the export potential of the region in different international markets based on productivity

and competitiveness, as well as to attract into the region FDI and tourists from different parts of the world. This module can also reduce the cost of marketing intraregional products promotions at the international level. All this contributes to the promotion of intraregional trade and tourism at the same time.

The efforts adopted for the above objectives include the search for platforms that enable each country in the region to sell its goods and services internationally, and participation as a region and single trade bloc in international fairs and seminars. This will help the member countries of the region to be easily identified by the international community. This in turns enables them to compete under the same conditions in the international market. It also becomes easier for international sellers and buyers to locate and negotiate with this specific region.

Moreover, those participating in the Trade and Tourism Promotion Cooperation Module (M3) should undergo an intensive training programme with an emphasis on English and foreign languages, international marketing, international economics, management, design and organization of event management as well as information technology. For this reason, a training module is incorporated into this programme (see table 3 and figure 1).

Table 3. Trade and Tourism Promotion Cooperation Module (M3)

TRADE

- The joint trade advisor network information centre is based on a general database of company profiles from each country in one region. Additionally, this centre can help with export and import procedures, lists of tariffs and trade regulations, logistic procedures, taxation, lists of seminars, overseas fairs and expositions, production standards, trade and market research and development and country profiles for each market in the same region. All this information is accessible through the Internet. This centre will offer a complete list of magazines and directories from each country. There after, the same information can be distributed by each respective embassy under the same promotion standards (e.g. ESCAP, Association of Southeast Asian Nations).
- Active and constant participation in international fairs, expositions and seminars
- Regional standardization of quality control of products and services
- Business facilitation programme (e.g. Asia-Pacific Economic Cooperation)
- Competitiveness and productivity programme
- Trade research and development programme
  - Diagnostic and tendencies of international markets research (business intelligence)
  - Research and development of new products and services
  - Research and development in branching, packing and marketing
  - Research and development in transportation and logistic distribution channels

Table 3 *(continued)*

Research and development of new technologies, production techniques and the environment
Training of trade promotion and negotiation programme
Trade, investment and tourism promoters programme
Trade negotiations and mediation negotiators programme

- Trade negotiation, mediation and conciliation programme

Origin rules
Copyright and intellectual property
Free trade areas negotiations
FDI and IDI protection agreements

INVESTMENT

- Joint stocks and exchanges regional markets programme
- Foreign direct investment and foreign regional investment promotion and protection under a general intraregional legal framework
- Foreign and regional investors advisor programme
- Financial support and credit for small and medium-sized enterprises and cooperatives
- Privatization based on leasing, free zones and fiscal incentives programmes

TOURISM

- Joint tourism organizations in the same region
- Intraregional tourism information centre
- Intraregional standardization tourism services programme

Public Administration Development Cooperation Module (M4)

The Public Administration Development Cooperation Module (M4) is the fourth module in the CEC-Scheme. The central idea of this module is to search for a solution to different problems in the public administration of each country in the region. The focuses of this module are administrative procedures, legal framework and institutional organizations, based on research and specialized training for public sector workers at all levels.

Additionally, it is proposed that specialized R&D centres be set up to provide consultation and advice on existing common regional problems. At least four categories of R&D with their respective centres should be put in place: (a) economic information, (b) public, legal and institutional information, (c) technology information, and (d) social information. It is proposed that each of these centres be further compartmentalized into specialized sections as detailed in table 4 and figure 1.

Table 4. Public Administration Development Cooperation Module (M4)

- **ECONOMICS: Economic information, research and training centre**
  Rural economic and agrarian productive restructuring section
  Productive restructuring and economics modernization R&D section
  Monetary policy section (banking, stock market, finance and stock exchange studies)
  Fiscal policy section (taxation and national budget design)
  The management of internal and external debt section
  Foreign trade policy section: negotiation of free trade areas and trade differences
  Economic and social planning section
  Technical and financial section
  Environmental and natural resources management section
- **LEGAL: Public, legal and institutions information, research and training centre**
  Human rights and minorities section
  Judicial and fiscal framework section
  Constitutional section
  Law and politics studies section
  Diplomatic studies section
  Strategic and security studies section
- **TECHNOLOGY: Technology information, research and training centre**
  Training and systematization of offices section
  Management systems and R&D of new technologies section
- **SOCIAL: Social information, research and training centre**
  Popular housing and urbanism section
  Public health prevention, food security and basic diet section
  Population and geography section
  Drugs, narcotics, violence, delinquency and terrorism

After implementation of the CEC-Scheme, constant feedback from different countries in the same region is vital. The constant feedback can help to rectify the failures and shortcomings of this model in the medium and long terms.

III. PRIOR TO THE APPLICATION OF THE CEC-SCHEME

For illustrative purposes, this paper presents two trade blocs, A and B, and two goods, g1 (agricultural goods) and g2 (industrial goods) in the application of the CEC-Scheme.

Trade bloc A consists of one developing country (Aa) and two less developed countries (Ab & Ac), all with similar production structures. Trade bloc B

is made up of developed countries, Ba, Bb and Bc. The three countries of trade bloc A are at different trade liberalization levels owing to the application of different trade and non-trade barriers by each member in the same region.

Trade bloc A

It is postulated that, in any region, the higher trade protection of small countries creates division, distrust and loss of credibility in the intraregional negotiations among countries. In the example presented here, however, trade bloc A is attempting to create a customs union (CU) agreement among its members based on the common external tariffs applied to third parties (see figure 2).

The three countries of trade bloc A produce the same type of export products, that is, agricultural products (g1) in raw form. As raw materials, g1 has low added value and thus commands low prices in the international market. Similarly, the industrial structure of trade bloc A is minimal. In addition, industries in this trade bloc concentrate on the production of manufactured goods only. Although country Aa has a higher number of manufacturing firms compared with countries Ab and Ac, all three lack heavy or technological industries. The deficit in the balance of trade shows the trade dependency level of capital goods and intermediate goods imported from developed countries or trade bloc B in this case. Therefore, trade bloc A would have to depend on the developed countries of trade bloc B for capital goods and intermediate goods. As a result, trade bloc A always has a higher deficit in its balance of trade in relation to trade bloc B and consequently, a high balance of trade deficit.

In addition to a high balance of trade deficit, all countries of trade bloc A also have a low per capita average income. Consequently, both the saving level (saving = investment) and the capital production volume supply (or investment) are low.

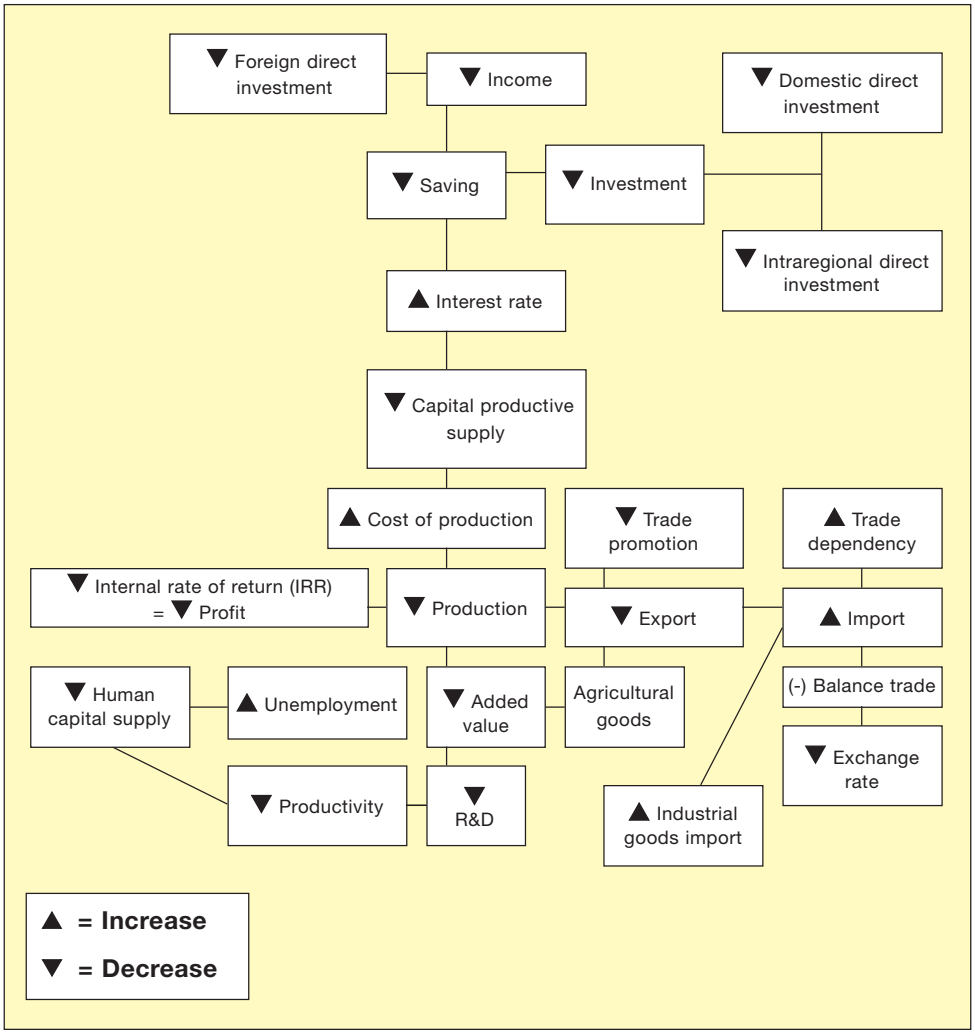
Investment is divided into three types: domestic direct investment (DDI),[1] intraregional direct investment (IDI)[2] and foreign direct investment (FDI).[3] DDI and

[1] DDI is the domestic capital formation in the local operations of domestic firms through the acquisition of a local operation, establishment and expansion of operations in the same country.

[2] IDI consists of the mobility of investment from one country to another in the same region.

[3] FDI is all investment in the foreign operations of a company through acquisition of a foreign operation, or establishment of a new site. It implies control and managerial and perhaps technical input and is generally preferred by the host country (Bannock, 1998).

Figure 2. Common problems hindering developing countries and less developed countries from integrating into a single trade bloc



IDI are expensive and difficult to obtain by the private sector at the domestic and regional levels, because the interest rate is higher for the limited productive capital volume supply. The capital productive volume supply faces a series of obstacles in its attempt to increase domestic production. Therefore, the export supply is smaller. Additionally, the small export supply is affected by poor trade promotion strategies. The high cost of production stems from the higher capital production cost and affects the market price directly. As a result, the internal rate of return (IRR) is lower; consequently, the profit of the local and regional firms is lower.

In addition, FDI in trade bloc A is smaller. In the present example countries of trade bloc B are the source of FDI in trade bloc A. The assumption as to why there is less FDI in trade bloc A is based on the following: fragile legal framework, political instability, corruption, complicated bureaucracy, limited availability of information about the country and the region, limited highly qualified labour, scarce physical infrastructure and lower income. However, with regard to exchange rates, there are constant devaluations in trade bloc A arising from speculative and black-market transactions.

Countries of trade bloc A are faced with a high rate of unemployment. This constitutes a great obstacle to efforts the standard of education in these countries and the reason behind the low labour productivity at the regional level. The smaller human capital supply also creates a large obstacle to the introduction of R&D and hence the quest to produce new goods and services. In addition to the above shortcomings, in trade bloc A there is inadequate physical infrastructure, a high population growth rate, a high level of poverty as well as an imbalance in the distribution of wealth (see figure 2).

As for politics, there is political instability in trade bloc A, owing to fragile democracies with soft legal frameworks and the lack of government institutions in each member country. The economic elites also have minimal interest in being part of a single trade bloc. Last but not least, there are problems relating to the borders between some member countries in the trade bloc.

Trade bloc B

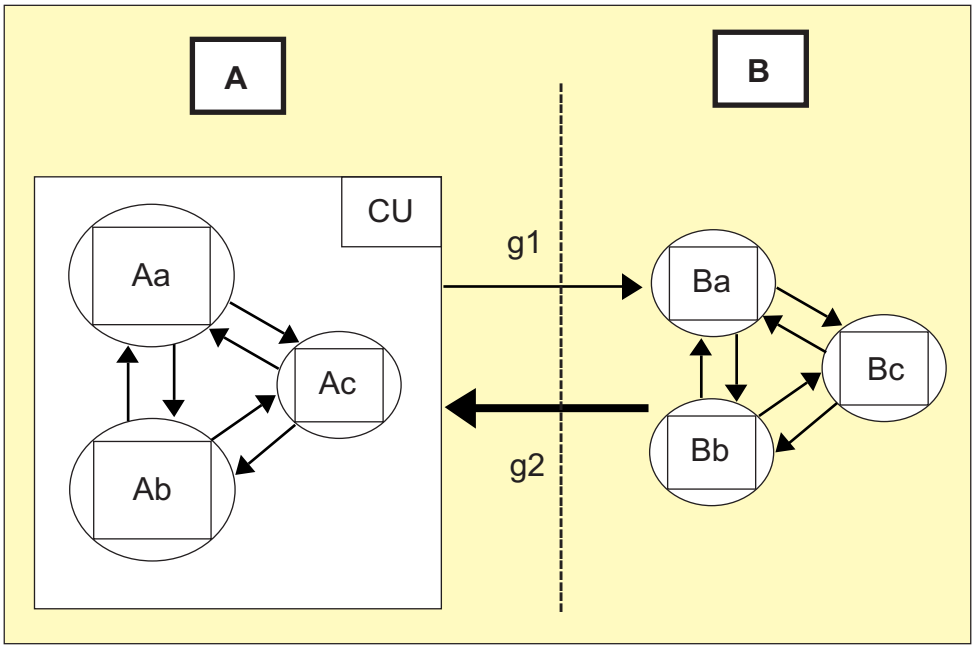
Trade bloc B has a better scenario compared with trade bloc A. While trade bloc A is forming a customs union, the three countries of trade bloc B (Ba, Bb and Bc) are in the process of signing an agreement on a free trade area. The countries of trade bloc A are excluded from this agreement. As compared with trade bloc A, trade bloc B shows a stronger trade and investment exchange between its members and higher levels of income.

The countries of trade bloc B base their economies on high technology industries and services, in this case the production of industrial goods, g2. Countries in this trade bloc have a comparative advantage to produce g2 based on low production costs. Hence this trade bloc offers high value added products to the international market. Meanwhile, based on g2 trade, a trade-creating effect is generated among the member countries in this trade bloc.

Trade bloc B begins to produce more g1 and the customs union formed by trade bloc B stops importing g1 from trade bloc A, generating a trade-diverting effect and at the same time, a trade diversion between trade bloc A and trade bloc B. The crux of the problem is that, owing to the comparatively higher cost of producing g1 in trade bloc B because of the higher labour cost, trade bloc B has less comparative advantage in the production of g1 than trade bloc A.

Nevertheless, as shown in figure 3, the opposite situation is true for trade bloc A. This is, in effect, the situation prior to the implementation of the CEC-Scheme. The following section explains how the situation of trade bloc A improves after the implementation of the CEC-Scheme.

Figure 3. Cooperation effect creation scheme (CEC-Scheme) before its implementation between trade bloc A and trade bloc B



IV. AFTER IMPLEMENTING THE CEC-SCHEME

Before the CEC-Scheme is applied in any type of regional integration initiative around the world, it is recommended that an analysis of the following aspects of each member country of the region and the region as a whole be carried out: culture, history, stage of economic and social development, stage of regional integration process, political situation, legal framework, regional institutions available and the needs of each country. This paper proposes the application of the modules priority mobility (MPM) concept to the analysis purposes. In MPM, a list of necessities and priorities that each member country in the same trade bloc present is used.

The four modules of the CEC-Scheme, as explained in the earlier part of this paper are: (a) Education and Technical Training Standardization Cooperation Module (M1); (b) Social and Productive Infrastructure Cooperation Module (M2); (c) Trade and Tourism Promotion Cooperation Module (M3); and (d) Public Administration Development Cooperation Module (M4) (see figures 1 and 4).

Additionally, each of the four modules of the CEC-Scheme should be applied in conjunction with a new regionalism or open regionalism approach (Garnaut, 1994 and Bergsten, 1997). Both the CEC-Scheme and the open regionalism approach promote multilateralism[4] with other trade blocs (see figure 4).

V. THE CEC-SCHEME MODULES

Education and Technical Training Standardization Cooperation Module (M1)

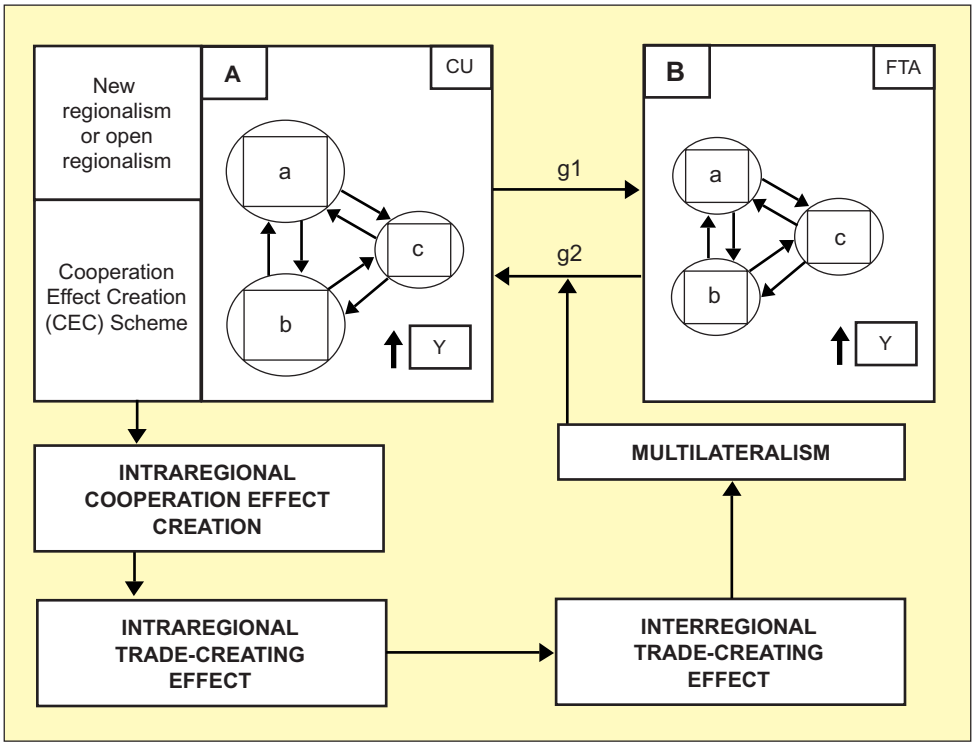
As indicated in this paper, the general objective of the intraregional Education and Technical Training Standardization Cooperation Module (M1) is to increase the supply of regional human capital or soft technology[5] based on a knowledge economy (K-economy). This leads to an improvement in R&D, which not only enhances productivity, but also creates new goods and services with high added value for new niches in the international market. It is based on ideas, working groups, innovation, strategies and plans to create new goods and services for the international market.

---

[4] International trade and exchange between more than two countries or regions without non-discrimination trade barriers between those involved, by contrast with bilateralism (Bannock, 1998).

[5] Soft technology is defined here as all general knowledge, technical and theoretical learning, experiences, training and adaptability to challenges. It includes cultural and environmental changes introduced by the workers of a country.

Figure 4. Cooperation Effect Creation Scheme (CEC-Scheme) modules after its implementation



The production resulting from the application of intraregional education and technical training standardization cooperation module (M1) can generate new goods and services with high added value through the promotion of the DDI and IDI.

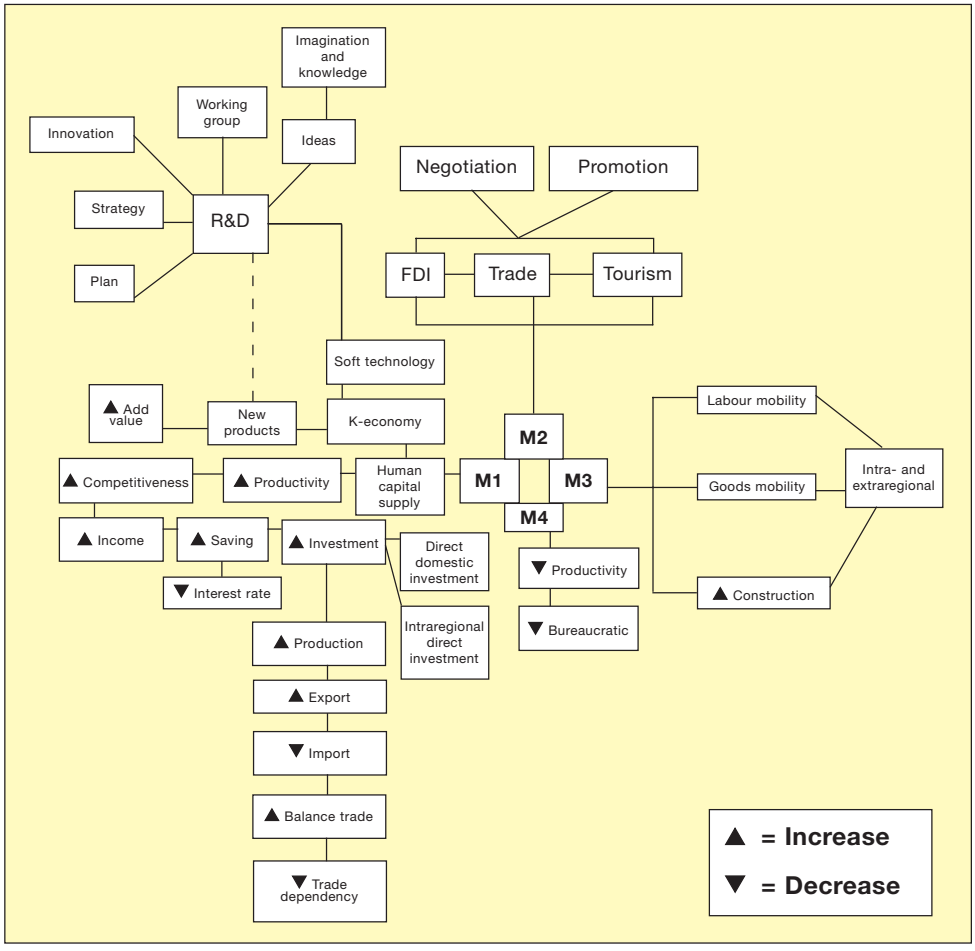
The above development in turns brings about a rise in the income per capita and hence the saving rate in the region. The next positive result will then be an increase in the supply of productive capital derived from the regional capital accumulation process. If the productive capital supply is higher than the demand, it pushes down the interest rate and the cost of production and thereby the market price.

If the M1 module is applied to trade bloc A, all the above benefits obtainable from its implementation will enable all goods and services from the trade bloc to compete in the international markets.

The positive outcomes of the implementation of the M1 module also include improvement in the internal rate of return and higher profits for domestic, regional and multinational firms. This, coupled with the growth of purchasing power within the trade bloc, will readily attract FDI into trade bloc A.

The growth of regional production spurred by DDI, IDI and FDI will invariably lead to an increase in the export volume. The ultimate benefit for trade bloc A will then be reduced trade dependency and an improvement in the balance of trade (see figure 5).

Figure 5. Cooperation Effect Creation Scheme (CEC-Scheme) modules effects



Social and Productive Infrastructure Cooperation Module (M2)

This module is meant to create the conditions for the formation of intraregional infrastructure for the mobility of goods and labour in both intraregional and extraregional trade (import and export). The social infrastructure can help reduce the difficulties arising from income inequality among the countries in the same region based on the implementation of the present regional integration proposal for developing countries. The M2 module can help create employment in the construction sector at the regional level.

Trade and Tourism Promotion Cooperation Module (M3)

In the light of the new international image of trade bloc A following the developments achieved through the implementation of the M1 and M2 modules, the promotional programmes of the M3 module further strengthen these developments by generating interest from the international market, thereby creating more business opportunities at the regional level.

The M3 module is based on an open consensus in both the private and public sectors of each member country of the region or trade bloc. Such an open atmosphere created by trade bloc A provides an equal opportunity and equal conditions for all of its member countries in all aspects of trade, investment and tourism. This manifests itself in the design of common and equitable strategies for all member countries, where the promotion and negotiation of free trade agreements, intraregional export, FDI and tourism are carried out collectively and efficiently.

In short, through the M3 module, all countries in trade bloc A and the region as a whole will not only have improved their image, but also a shared identity as a single market. The trade bloc will thus be easily identified by international sellers, buyers and investors in the international market. This programme demands the collaboration and coordination between the ministry of economy, exporters (traditional and non-traditional products), chambers of trade and the ministry of foreign affairs in each country.

Public Administration Development Cooperation Module (M4)

The objective of the last module, the Public Administration Development Cooperation Module (M4) (see figures 1 and 5), is to search for a solution to the different problems that face the public administrations while trying to increase productivity through intensive training programmes and further research. This module will try to improve the administrative procedures, legal framework and institutional organizations.

VI. CONSIDERATIONS IN THE APPLICATION OF THE CEC-SCHEME

The application of the CEC-Scheme varies slightly for the regional integration of developing countries and less developed countries from that for the regional integration of developing countries and developed countries.

It is important to note that the basic step to take in the CEC-Scheme for integrating developing countries and less developed countries, for example the Central American Common Market (CACM) and the Andean Community, is to foster an open cooperation, in the form of participation in socio-economic aid assistance, to solve the differences between members of the scheme.

In the case of regional integration agreements between developing countries and developed countries, for example the Association of Southeast Asian Nations (ASEAN) and the North American Free Trade Agreement (NAFTA), the application of the CEC-Scheme is geared towards a large amount of open trade and open cooperation in the form of participation in socio-economic aid assistance. This is the first step towards helping developing countries that do not have a sufficient trade volume to compete in the international market.

According to the CEC-Scheme, the trade volume is the deciding factor in the regional integration process. Countries and regions with a high trade volume in the international market – a result of a large diversity of products and services with high added value – need to seek free trade agreements with others that also have the same conditions. This is the case for regional integration between two regions of developed countries. An example of regions that have taken this step in their regional integration process is EU and NAFTA.

However, countries or regions whose trade volume in the international market is small owing to their limited diversity of products and services with low added value, should give priority to open cooperation rather than open trade (see figure 6). This applies to the regional integration process of developing countries and less developed countries, for example, between CACM and the Andean Community.

Figure 6. Priority between open cooperation and open trade in different regional integration schemes based on economic development stage

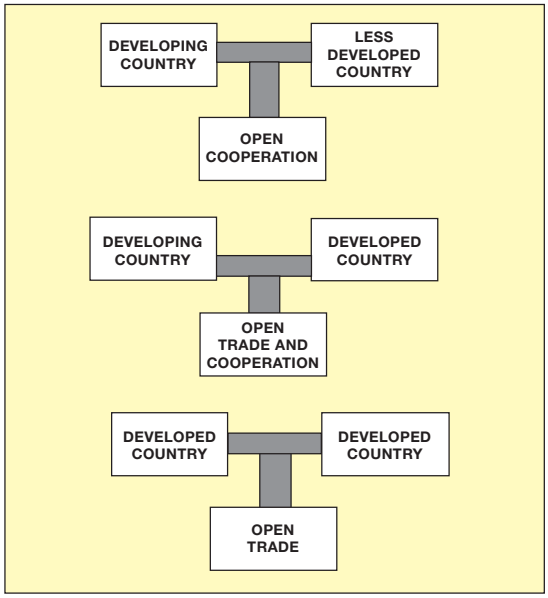
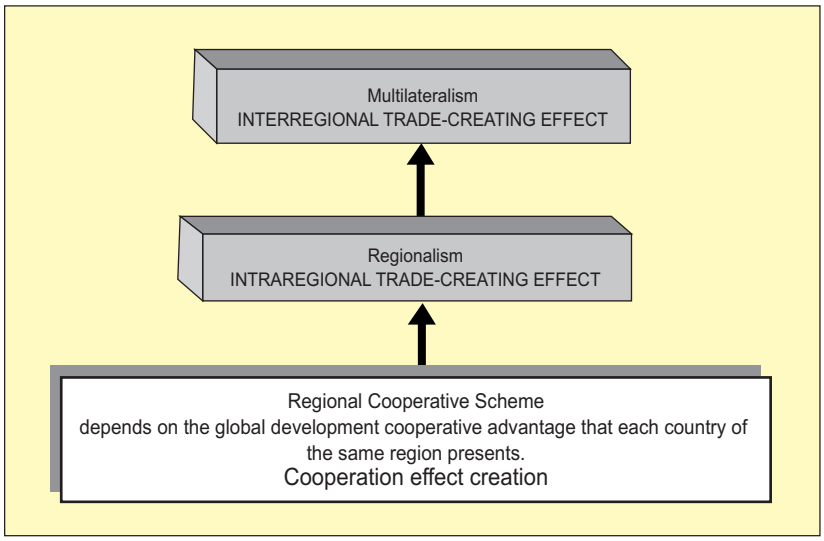


Figure 7. Interaction between the cooperation effect creation and trade-creating effect



VII. CONCLUSION

After examining the CEC-Scheme, the importance of Viner's contribution in the regional integration field based on the theory of customs union through the application of a partial equilibrium system (static model) is recognized. Viner presents a general explanation of the impact of the formation of a customs union based on the explanation of its basic concepts (trade-creating and trade-diverting effects) to analyse the regional integration process of any region and its impact on world trade (Viner, 1950).

The CEC-Scheme is the showcase of how the regional integration process could be analysed using the concepts of trade-creating and trade-diverting effects. It is concluded here that in the regional integration between developing countries and less developed countries, the trade-creating effects at the intraregional and extraregional levels that are achieved in the short- and medium-term could be brought about through the implementation of the CEC-Scheme, specifically through open cooperation in the social assistance modules, in addition to open regionalism (agreements on free trade areas). Neither the free trade agreements nor the customs unions can be successful without the concurrent implementation of socio-economic cooperation programmes.

REFERENCES

Balassa, B., 1985. "Exports, policy choices, and economic growth in developing countries after the 1973 oil shock", *Journal of Development Economics,* 18(1), pp. 23-35.

Baldwin, R.E., D. Cohen, A. Sapir and A.J. Venables (eds.), 1999. *Market Integration, Regionalism and the Global Economy* (Cambridge, Cambridge University Press), pp. 5-40.

Bannock, Graham, 1998. *Dictionary of Economics,* sixth edition (New York, Penguin Books).

Bergsten, C.F., 1997. "Open regionalism", *Journal of the Institute for International Economics,* vol. 97, No. 3, pp. 1-24.

Bhagwati, Jagdish, 1993. "Regionalism and multilateralism: an overview", in Jaime de Melo and A. Panagariya (eds.), *New Dimensions in Regional Integration* (London, Centre for Economic Policy Research).

Bhagwati, Jagdish, Pravin Krishna and Arvind Panagariya, 1999. *Trading Blocs: Alternative Approaches to Analyzing Preferential Trade Agreements* (Massachusetts, Massachusetts Institute of Technology Press), pp. 3-20.

Cable, Vincent and David Henderson, 1994. "Trade blocs? The future of regional integration", Chapter I (London, Royal Institute of International Affairs), pp. 3-15.

Deardorff, A.V. and R.M. Stern, 1994. "Multilateral trade negotiations and preferential trading arrangements", in A.V. Deardorff and R.M. Stern (eds.), *Analytical and Negotiating Issues in the Global Trading System* (Ann Arbor, University of Michigan Press), pp. 27-85.

Fernández, R. and J. Portes, 1998. "Returns to regionalism: an analysis of nontraditional gains from regional trade agreements", *The World Bank Economic Review,* vol. 12, No. 2, pp. 197-220.

Garnaut, R., 1994. "Open regionalism: its analytic basis and relevance to the international system", *Journal of Asian Economics,* vol. 5, No. 2, pp. 273-290.

Lawrence, R.Z., 1996. *Regionalism, Multilateralism, and Deeper Integration,* Chapter III (Washington, The Brookings Institution), pp. 21-33.

Lipsey, R.G. and K. Lancaster, 1997. "The general theory of second best", in Richard G. Lipsey (ed.), *Microeconomics, Growth and Political Economy: The Selected Essays of Richard G. Lipsey,* Volume I (Cheltenham, Edward Elgar), pp.153-80 [a revised version of an article originally published in the *Review of Economic Studies,* XXIV, 1956, pp. 11-32].

Mattli, W., 1999. *The Logic of Regional Integration: Europe and Beyond,* Chapter II (Cambridge, Cambridge University Press).

Viner, J., 1950. "The economics of custom unions", in *The Customs Union Issues,* Chapter IV (New York, Carnegie Endowment for International Peace), pp. 41-81.

APEC AND FINANCIAL EXCLUSION: MISSED OPPORTUNITIES FOR COLLECTIVE ACTION?

*John Conroy**

The Asia-Pacific Economic Cooperation (APEC) has recently recognized the phenomenon of "financial exclusion" in its member economies, in consequence of a realization of the need to deal with the "losers" in the globalization process. With leadership from Mexico in 2002, APEC considered the merits of "microbanking" as a remedy for financial exclusion. With a number of member economies preferring to deal with financial exclusion as a "development" issue, rather than as a general condition in all APEC economies, APEC appears to have settled upon "microfinance", rather than microbanking, as the solution to financial exclusion.

This paper examines financial exclusion as a generalized problem applicable to all APEC economies. It notes that, in all APEC economies, significant population subgroups are excluded from access to the services of formal financial institutions. It argues that providing such access would bring economic benefits, both in terms of aggregate economic efficiency and of interpersonal equity and equity between households. The paper examines the distinction between microbanking and microfinance, concluding that the latter is a subset of the former and primarily applicable to the developing economies, rather than representing a solution to the generalized problem of financial exclusion. The paper provides an overview of the different forms that microfinance has taken in APEC economies, including Australia. It also reviews the adequacy of the APEC process to discuss financial exclusion effectively.

Financial exclusion is a process that prevents poor and disadvantaged social groups from gaining access to the formal financial systems of their countries. This paper[1] examines the circumstances in which, quite recently owing to the

* Special consultant, the Foundation for Development Cooperation, Brisbane, Australia.

[1] This is a revised version of a paper presented at the Access to Finance International Conference organized by the World Savings Banks Institute and the World Bank, Brussels, 28-29 October 2004.

initiative of Mexico, the phenomenon of "financial exclusion" has been recognized by the Asia-Pacific Economic Cooperation (APEC). It will consider what potential lies within APEC to address the problems of financial exclusion affecting its diverse populations. These problems are becoming more widely recognized, as seen for instance by the United Nations Capital Development Fund's sponsorship of an international dialogue on building inclusive financial sectors to mark the United Nations International Year of Microcredit in 2005.[2]

APEC[3] is an intergovernmental grouping established in 1989 to facilitate economic growth, trade and investment, and capacity- and community-building in the Asia-Pacific region. It has 21 member economies located on and within the Pacific Rim. These account for more than a third of the world's population, over 50 per cent of world GDP and some 41 per cent of world trade. The member economies cover a wide span of development, ranging from transitional economies such as Viet Nam (GDP per capita of around $420)[4] to developing market economies in Asia, such as Indonesia (GDP per capita $810) and Thailand ($1,990), and in Latin America, such as Chile ($4,400), to advanced market economies such as Japan ($31,400) and the United States of America ($36,400).[5]

Central to achieving APEC's vision are the "Bogor goals" of free and open trade and investment in the Asia-Pacific region. However, APEC is a multi-faceted process. The member economies engage in policy coordination and cooperative activities at the official and ministerial levels in a wide range of sectors, from environment to telecommunications and from fisheries to financial systems. These wide-ranging APEC activities are conducted in many fora, including working groups and committees composed of officials and representatives of industry, academia and civil society. In this respect APEC resembles the Organization for Economic

---

[2] Information available online at http://www.uncdf.org/bluebook/.

[3] APEC members are Australia; Brunei Darussalam; Canada; Chile; China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Philippines; Russian Federation; Singapore; Taiwan Province of China; Thailand; United States of America; and Viet Nam.

[4] GDP per capita and other economic indicators for the APEC member economies are available online at http://www.apecsec.org.sg/apec/member_economies/key_economic_indicators.html.

[5] A classification of the APEC economies for the purpose of this paper, focusing on aspects of financial sector development, is as follows:

(a) Developing market economies: Brunei Darussalam; Chile; Indonesia; Malaysia; Mexico; Papua New Guinea; Peru; Philippines; Thailand;

(b) Transitional (developing) economies: China; Russian Federation; Viet Nam;

(c) Developed market economies: Australia; Canada; Hong Kong, China; Japan; New Zealand; Republic of Korea; Singapore; Taiwan Province of China; United States of America.

Cooperation and Development (OECD). However, as noted above, APEC embraces developed, developing and transition economies, whereas OECD is a grouping of advanced industrial nations.

The outcomes of APEC's sectoral fora are reported to the APEC ministerial meetings held towards the end of each calendar year. In turn, the deliberations of these sectoral ministerial meetings are reported to the primary APEC deliberative body. This is the annual APEC Ministerial Meeting, attended by foreign and economic or trade ministers. The cycle culminates in an annual headline event, the Leaders' Meeting, which is a quasi-summit of the APEC membership.[6] This paper draws upon the work relevant to financial exclusion conducted by a number of APEC sectoral working groups and committees. In particular, it is based on the deliberations of the APEC Economic Committee and the APEC Small and Medium Enterprises (SME) Working Group.[7]

I. APEC, SHARED PROSPERITY, MICROBANKING AND MICROFINANCE

Meeting in Shanghai in 2001, the APEC Leaders expressed the need to address shared prosperity in the face of the pressures of globalization.[8] This was to be coupled with attention to the problems of microenterprise, which was seen as providing livelihood to the majority of the populations of the poorer APEC member economies. Then, during 2002, APEC turned its attention specifically to issues of financial exclusion, as a means to achieve greater economic efficiency and equity in the Asia-Pacific region. Under President Vicente Fox, Mexico pressed for APEC members to give more attention to microenterprise development (MED), increase economic participation by the poor and provide social safety nets for those displaced by globalization. APEC's interest in MED has been parallelled by attention to the provision of financial services tailored to the needs of microenterprises and low-income people, known as microbanking. This again was a Mexican initiative.

---

[6] APEC eschews the term summit because of political sensitivities, since not all APEC members are independent States. Thus, APEC is the first, and so far the only, international forum which seats both Taiwan Province of China and Hong Kong, China at the same table as China. This sensitivity also explains the use of the term member economies instead of governments to describe participants, and Leaders' Meeting rather than heads of government meeting to describe the annual quasi-summit.

[7] Information on the complex set of activities in the annual APEC working cycle is in Outcomes and Outlooks 2003/2004 available online at http://www.apec.org/apec/enewsletter/march_vol2/publication.primarycontentparagraph.0001.LinkURL.Download.ver5.1.9.

[8] APEC Economic Leaders' Declaration: Meeting New Challenges in the New Century, Shanghai, China, 21 October 2001, available online at http://www.apecsec.org.sg/apec/leaders_declarations/2001.html.

During 2002, a number of APEC committees and working groups studied microenterprise development and microbanking or microfinance, while several conferences and symposia also considered the issues. Microbanking was pursued through the Economic Committee, while MED and microfinance both received attention in the work directed by ministers responsible for SMEs and for women. The Economic Committee produced a comprehensive study of the requirements for microbanking development, regulation and supervision in the Asia-Pacific region,[9] which was endorsed by the 2002 APEC Ministerial Meeting. The study adopted financial exclusion as an analytical principle, and defined microbanking broadly as consisting of "the provision of small-scale financial services, such as credit, savings, insurance, and remittance services, that are targeted towards low-income segments of the population and microenterprises."

However, in regard to the financing needs of microenterprises, the SME Ministerial Meeting in 2002 saw the solution not in microbanking, but in microfinance, and stated that:

> "Ministers recognized the importance of micro-finance as a sustainable development tool for micro-enterprises.....[and] welcomed the recommendations to (1) develop an appropriate risk based regulatory framework for the commercial microfinance industry; (2) incentivize banks and financial institutions to enter the business of microfinance; (3) provide incentives, training and rewards to commercial institutions that demonstrate excellent performance; (4) limit microfinance subsidies to activities that disseminate information, develop financial tools, and train managers and staff; (5) provide capacity-building initiatives for the most promising institutions entering the micro-financing market; (6) and share lessons across APEC regarding the transformation of non-governmental organizations to commercial microfinance institutions."[10]

This statement by SME Ministers is exemplary in a number of respects, including its emphasis on the sustainability and professionalism of institutions. It sets out alternative paths to the creation of workable models for microfinance provision; these may arise either because orthodox financial institutions modify their operations so as to incorporate microfinance clients, or because voluntary

---

[9] APEC, chapter 2, "Microbanking Development, Regulation and Supervision in the APEC Region" in *2002 APEC Economic Outlook* (Singapore, APEC, 2002), available online at http://www.apec.org/apec/publications/free_downloads/2002.html.

[10] Joint Ministerial Statement at the ninth APEC Small and Medium Enterprise Ministerial Meeting, Acapulco, Mexico, 24-25 August 2002, available online at http://www.apecsec.org.sg/apec/ministerial_statements/sectoral_ministerial/small_medium_enterprises/2002_small_medium.html.

agencies scale up and professionalize their operations to achieve sustainability, perhaps becoming formal financial institutions in the process. However, the statement does not appear to be directed towards financial exclusion seen as a whole-of-APEC issue. The choice of the term microfinance rather than microbanking and the description of the former as a development tool both appear significant. The Ministers seemed intent upon quarantining the issue strictly within the borders of APEC's developing economies.

At the conclusion of the process for 2002, on 27 October, the APEC Leaders also endorsed microfinance and MED. Their Declaration stated that:

> "We agreed that micro-financing is crucial for the expansion of micro-enterprises, and we praise efforts to develop and promote market-based micro-finance to assure micro and small businesses and entrepreneurs have access to capital. We agreed that government action should create an enabling policy environment and a legal and regulatory framework for the growth and expansion of sound and sustainable micro-financing intermediaries, fostering their gradual and full integration into the domestic financial system."[11]

From these statements of APEC Leaders and Ministers we can draw an important distinction. On the one hand, the Economic Committee report endorsed at the APEC Ministerial Meeting employed the generic term microbanking to describe a range of financial service delivery options. These appear to have the potential to address financial exclusion, seen as a whole-of-APEC problem. On the other hand, the statement from the Small and Medium Enterprises Ministerial Meeting adopted the more narrow term microfinance, which (by implication at least) is seen as the solution to a developing economy problem. This partial rather than whole-of-APEC approach seems to have won the day at the 2002 Leaders' Meeting, and was reflected in their Declaration.

This was unfortunate, because microbanking is the more inclusive concept and has the potential to address a failure of financial sector development common to all APEC economies. The reasons for APEC's adopting the less comprehensive approach are complex and revolve around differing national perceptions of the goals of APEC. Some of the more-developed economies appear to have regarded any examination by APEC of their own financially-excluded subpopulations as irrelevant, although it is interesting that the United States was broadly supportive of a generalized approach to the issue. A number of developing member economies

[11] For full text, see the APEC Economic Leaders' Declaration, Los Cabos, Mexico, 27 October 2002, available online at http://www.apecsec.org.sg/apec/leaders_declarations/2002.html.

were content to see the argument for financial inclusion treated simply as a development issue, and this is the view that prevailed. The distinction between microbanking and microfinance is discussed at greater length in section V, below.

II. THE RELEVANCE OF FINANCIAL EXCLUSION TO APEC'S ECONOMIES

If financial exclusion is to be seen as relevant to all economies, it is necessary to frame the discussion in a manner which captures the diversity within APEC. One way of approaching this is to accept that in all APEC economies, whether developed or developing, and whether market-based or transitional, there are population subgroups which are neither adequately served by formal financial systems, nor by conventional financial institutions, especially the banks. Thus in the wealthiest APEC economy, the Economic Committee's report on *Microbanking Development, Regulation and Supervision*[12] notes that "the existence of 40 million Americans who are not using mainstream banking services led the Treasury Department to launch the programme 'First Accounts' in late 2001", and documents this programme.

This failure of access occurs in developing member economies, where the informal or un-enumerated sector is of major importance as a source of livelihood for the poor and the household is the primary unit of both production and consumption. Considerations such as geographic isolation, low population density and gender also play a part in determining patterns of unequal access in economies where financial sector development is limited. Particular sectors, notably smallholder and peasant agriculture, with their associated post-harvest and off-farm economic activities, pose special challenges for financial service provision. A general problem in the developing member economies is the inability of many lower-income households to meet lenders' requirements for formal physical collateral.[13]

Inequality of access occurs also in developed economies, where the forces of privatization and rationalization impelled by the internationalization of finance have wrought massive structural changes in domestic financial markets. In some cases such restructuring has led to the withdrawal of conventional financial institutions from particular geographic areas or demographic categories. In other cases, increasing economic and social polarization has caused conventional financial institutions to focus their services on high-yield market segments and to neglect

[12] See footnote 9 above.

[13] As Hernando de Soto has shown, however, land tenure and land titling deficiencies often prevent the poor from collateralizing assets they have accumulated.

others, such as low-income and otherwise disadvantaged households. Gender is a variable influencing access in developed as well as in the less developed member economies.

From the above it can be seen that in all economies there are households whose members, in consequence of financial exclusion, face obstacles in realizing their economic and social potential. This is most commonly because their income levels and the quantum of their financial service needs are pitched substantially lower than those of the population groups that have access to formal financial services. This is not to say that the deprived subgroups are always minorities. Indeed, they may be a majority by number, though not by share of income, within their economies. In the least developed economies formal financial institutions may serve only between 15 and 50 per cent of households.

Thus in regard to access to financial services there is a unifying feature, which enables us to bind together the concerns of all economies, developed and developing. In all cases, the household is the economic unit which experiences the least adequate access to financial services. An important distinction exists, however, between the developing and developed economies. In the developing economies, including those in transition, households are disadvantaged both as units of production and consumption. Improved access to financial services has the potential to increase both efficiency in production and equity in consumption in those economies. In the developed member economies, households are disadvantaged primarily in their role as units of consumption, given their very limited importance in production. In the developed economies the benefits of improvements in access are primarily in terms of interpersonal and inter-household equity.

III. THE CONTRIBUTION OF MICROBANKING AND MICROENTERPRISE DEVELOPMENT TO ECONOMIC EFFICIENCY

In all economies, developed as well as developing, microbanking can contribute to the process of financial deepening, which is an important concomitant of economic development. There is real significance for financial sector development in the extension of savings facilities to millions of poor householders. This is true no matter how small the mean balance of their accounts. The poor, especially in the developing economies, can demonstrate a surprisingly high propensity to save. This is particularly true if they have access to safe, liquid, deposit facilities bearing positive real rates of interest. Extension of financial services to the poor, especially deposit-taking, lays the foundation for a cumulative process of financial deepening.

A second important contribution to economic efficiency relates to the developing economies and concerns their competitiveness in international trade. Microenterprises in these economies are, as previously discussed, mainly household-based and are the most numerous units of production as well as the largest source of employment. It is true that microenterprises, especially the typical "survival" enterprises of the poor, make little direct contribution to exports. However in some economies, for example Taiwan Province of China, there are well-established supply-chain relationships in export industries which reach down into the household-based microenterprise sector. Lower wage rates paid in that sector can be a factor in the international competitiveness of industries where such relationships prevail.

The most important, if indirect, contribution to export promotion of microenterprises consists of their capacity to supply wage-goods and services to the industrial workforce. For developing economies to exploit comparative advantage in manufacturing based on low labour costs, it is necessary for workers to have access to low-cost wage-goods and, particularly, services. It is the comparative advantage of microenterprise to produce such goods and services, which can form a substantial proportion of the consumption basket of manufacturing workers. This is especially the case where workers in export-oriented manufacturing are employed away from their homes and families. In such circumstances, microenterprises spring up to serve the needs of an industrial workforce. Street stalls supply food and drink, while other microentrepreneurs offer homestay accommodation, minibus transport, outdoor haircuts, tailoring and a host of other workers' needs. Microbanking institutions can play an important role in increasing the productivity and profitability of such microenterprises by funding the capital requirements of microentrepreneurs.

Microbanking institutions serving the needs of industrial workers can contribute to export competitiveness in other ways. By providing deposit services they can assist industrial workers to accumulate savings and by providing funds transfer services they can reduce the transaction costs of remittances to families. By increasing the net rewards of participation in the industrial workforce, such services tend to reduce wage pressures in the export industry and thereby act to maintain its international competitiveness.

IV. THE CONTRIBUTION OF MICROBANKING AND MICROENTERPRISE DEVELOPMENT TO DISTRIBUTIONAL EQUITY

The 2001 APEC Leaders' Declaration, as seen above, called for member economies to develop and strengthen social safety nets to protect the vulnerable. This call reflected concern for shared prosperity in the face of globalization. The introduction of microbanking and microenterprise development to APEC's agenda reflects an assumption that these activities act to improve distributional equity within economies.

First, microenterprise conducted at the household level provides income to poor and low-income people in the developing member economies. It is a mechanism that enables the benefits of economic growth to flow to poor and low-income people, and to facilitate their participation in that growth. Action to improve the productivity of microenterprises, including increasing their access to financial services, will have direct distributional benefits, because these enterprises are the major source of non-agricultural employment in developing APEC economies.

Microbanking could be regarded as trivial in financial terms, in the sense that the transactions of microbanking institutions would scarcely register in the consolidated balance sheets of the financial sectors of any APEC economy.[14] Microbanking transactions, however, are significant in the lives of millions of people who are not served by formal financial institutions. Microbanking can assist the sharing of prosperity in developing economies by assisting poor households to meet both their consumption and production needs. In developed economies, microbanking and MED can raise the consumption levels of the financially excluded. Additionally, in all economies, female-headed households are overrepresented among the poor and stand to gain disproportionately from access to microbanking services and MED opportunities.

Finally, support for microbanking and MED has the potential to ameliorate the impact of market-opening measures on those who might otherwise bear the brunt of the costs of adjustment. Such measures may result from multilateral trade negotiations through the World Trade Organization, or as the result of bilateral and/or regional trade agreements. In the case of the APEC economies, such support for microbanking and microenterprise development could increase the political feasibility of moving towards the Bogor goals of free and open trade and

[14] Indonesia, where a range of regulated financial institutions caters to the needs of a substantial proportion of lower-income people, is an important exception to this generalization.

investment. In the meantime, given the proliferation of less comprehensive "free" trade agreements of a bilateral or regional nature, having access to financial services increases the capacity of low-income households and microenterprises to withstand the shocks of adjustment imposed by international trade treaty obligations.

V. MICROBANKING AND MICROFINANCE

The distinction between microbanking and microfinance is important and is discussed at length in this paper. In brief, however, one could say that microfinance is a subset of microbanking, and is more adapted to the circumstances of developing member economies. Microbanking, on the other hand, could be regarded as applicable to the circumstances of all member economies. For the developing member economies, microfinance is often proposed as the solution to the financial exclusion of households operating in the informal economy. It is certainly the most publicized, owing to the many published accounts, both professional and popular, of the achievements of Grameen Bank and its founder, Dr. Muhammed Yunus. The energetic advocacy of the Microcredit Summit has also increased popular awareness of microfinance.

For developing economies of the Asia-Pacific region, it is appropriate to accept the specific definition of microfinance used in the Asian Development Bank's Microfinance Development Strategy for the region:

> "Microfinance is the provision of a broad range of financial services such as deposits, loans, payment services, money transfers, and insurance to poor and low-income households and their microenterprises."[15]

The Asian Development Bank's definition is a good deal more inclusive than those adopted by many microfinance practitioners, who would apply strict criteria for loan size and targeting of clients, excluding from consideration the supply of services to people who are merely low-income, rather than poor. However, for our purposes, it is appropriate to focus on the supply of financial services to the bottom half or two thirds of the income ladder, as all of the poor and most informal sector entrepreneurs are likely to be found there. Such a frame of reference enables the discussion to consider the achievements of such accomplished formal development financing institutions as the Bank Rakyat Indonesia (BRI), Thailand's Bank for Agriculture and Agricultural Cooperatives (BAAC) and the Banco del Estado of Chile, which finance the microenterprise sectors in their respective economies.

[15] Asian Development Bank, policy papers, *Finance for the Poor: Microfinance Development Strategy* (Manila, ADB, 2001), available online at http://www.adb.org/Documents/Policies/Microfinance/default.asp.

"Microfinance" encompasses access to savings and other financial services, as well as credit. The term has come into greater currency since the early 1990s and has largely, but not entirely, supplanted the term microcredit in the professional literature.[16] The latter term is now recognized as unfortunate because its use has focused attention on a single aspect of microfinancial services, lending to the poor, and diverted attention from the need to develop systems of financial intermediation in which the poor are involved. Savings is often described, in a memorable phrase, as the forgotten half of rural finance. Using the term microcredit perpetuates this amnesia.

Microfinance institutions (MFIs) are developing forms of "microinsurance" to protect the vulnerable from misfortunes, such as ill health, which can tip them over the edge into poverty. In addition, microfinance practitioners are working to introduce newer services, such as money transfers to facilitate remittances by migrant workers. These are valued by poor and low-income workers and their families, given their high degree of spatial mobility, both domestically and internationally, and the difficulty and expense they experience in remitting funds.

VI. MICROFINANCE IN APEC'S DEVELOPING MEMBER ECONOMIES

There is great diversity among APEC member economies in the degree to which systems of microfinancing have emerged, in the institutional forms developed or adapted for them and in the policy and regulatory environments that shape those institutions. This account of patterns of development in the various microfinance sectors is designed primarily to give some indication of the diversity that exists. APEC economies are classified as developed, developing and

[16] The terms used to describe institutional efforts to reduce financial exclusion have evolved with a fuller understanding of the processes involved. Until the mid-1990s the term microcredit was in vogue, until the realization that this failed to capture the importance of financial services other than credit, most notably access to savings services. Now microfinance, which is thought to encompass this wider range of meanings, has very largely superseded microcredit, though it has not done so sufficiently to prevent 2005 being designated as the International Year of Microcredit. The term microbanking is more recent and not yet widely employed although it has excellent credentials. These flow, inter alia, from its use in the title of the *Microbanking Bulletin,* published by the Consultative Group to Assist the Poor, from the Food and Agriculture Organization of the United Nations Microbanker software package, and from Bank Rakyat Indonesia's Microbanking Division. These uses of the term have in common an approach to eliminating financial exclusion based on the transformation of informal institutions to formal and accountable entities, the standardization of reporting and performance measure and the sustainability of financial services. This is an evolutionary process that may in time see microbanking supersede microfinance as the generic label. This paper notes the use of these two terms as illustrating a divide between the approaches taken to financial exclusion among APEC member economies.

transitional, according to the schema outlined above (see footnote 5) and a distinction is made between activities in Asia and Latin America.

APEC developing market economies in Asia

Among the developing market economies in Asia there are considerable differences, both in the incidence of poverty, which might stimulate microenterprise development and microfinance initiatives as a response to disadvantage, and in the balance between private and public involvement in the process. For example, Malaysia and Thailand have considerably higher levels of per capita income than their APEC neighbours, Indonesia and the Philippines. In Malaysia in particular, absolute poverty was, at least until the financial crisis from 1997, regarded as a residual and diminishing problem which could be eliminated early in this current century.

The official Malaysian approach to microenterprise development, and to the provision of microfinancing services as an element in that process, has been essentially 'social-welfarist'. Microfinance services for households without access to conventional financial institutions have been seen within the framework of a redistributive social policy involving substantial subsidies. For the poorest Malays, the Government has nurtured a major MFI operated by an NGO, while the State agricultural bank has extensive rural outreach. For the off-farm microenterprise sector, another State institution, the Credit Guarantee Corporation, underwrites commercial bank lending to small- and microenterprises, down to the level of street hawkers.

In the case of Thailand, elements of subsidy, and implicit redistribution, have also been present in the financial policy for lower-income rural households. However, there are marked differences between Malaysia and Thailand in microfinance policy and practice. In Thailand, for example, the voluntary or NGO sector of financial service provision is relatively undeveloped. Instead, a government agricultural bank has primary responsibility for microfinancing and has become both an international leader in its field and an integral part of the Thai financial system.

There is a division of labour between financial institutions serving the microenterprise development and informal sectors. The State agricultural bank, BAAC, primarily serves small and medium farms, cooperatives and associations, with the last two serving many microentrepreneurs. The poor and landless are served mainly by informal finance and a few government programmes and NGOs. Agricultural cooperatives and village-level credit unions also reach poorer segments of the rural population to some extent. More recently, rotating credit funds have

been established in most Thai villages, but it is not clear that their financial sustainability is an important objective. From 2001, specialized financial institutions have been employed as instruments for policy lending. This development is discussed in section IX below, in an APEC context.

Indonesia and the Philippines also provide some marked contrasts, both with one another and with Malaysia and Thailand. Indonesia has adopted a model of microfinance service provision based very largely on the operations of regulated financial institutions, whereas NGOs are of relatively limited significance. This is sometimes described as a rural financial systems approach to household and microenterprise financing. The emergence of sustainable and effective models of microfinancing within the formal financial system, many of them privately owned and operated, has been more a by-product of Indonesia's efforts at financial sector development than of any conscious policy to stimulate microfinance, per se.

The "village units" of BRI, the State agricultural bank, have acquired an international reputation for the effectiveness of their outreach to middle- and low-income households operating microenterprises in rural Indonesia. Indeed, the profitability and savings mobilization capacity of these units kept Bank Rakyat as a whole afloat during the Asian financial crisis. Indonesia has also developed a range of small regulated financial institutions which serve the communities in which they are embedded effectively.

By contrast, Indonesia also provides some examples of mass microcredit programmes involving NGOs and other community organizations, especially in the late Suharto era, which were politically-driven and not at all concerned with financial sustainability. There is also a long history of ill-targeted and subsidized schemes of directed credit serving the SME sector.

Microfinancing in the Philippines has followed a more conventional course, based primarily on the energies of a burgeoning NGO community. The influence of Grameen Bank methods of service delivery has been very strong in that NGO community and the Philippines also has a regulatory environment favourable to the operation of small regulated banks suitable for microfinance. The Government has explicitly incorporated microfinance into its poverty alleviation strategies, has encouraged NGOs to develop sustainable microfinance programmes, and promotes the transformation of successful microfinance NGOs into regulated financial institutions.

In the Philippines there are three categories of MFI, each of which answers to a different regulator. These are rural and thrift banks, NGOs that provide microfinancial services, and credit unions or cooperatives. Of these three

institutional types, the rural banks appear to deal with somewhat higher-income clients and to make larger loans than the microfinance NGOs. Many of the NGOs have adopted variants of the Grameen Bank model and, in general, group organization of one sort or another is their most common mode of service delivery. The assets of these three types of MFIs were equivalent to only about four per cent of the assets of the commercial banking system in 1996. However, the combined number of MFI offices, some 7,900 outlets, was more than twice the number of commercial bank offices.

Procedures exist for successful MFIs operated by NGOs to transform themselves into regulated financial institutions. The Government has established a second tier financial institution specifically for the purpose of providing loanable funds for MFIs, as well as setting up capacity-building mechanisms for these institutions. The Government has also acted to rationalize the proliferation of ad hoc credit schemes operated by line agencies of government, eliminating subsidies and ensuring that credit provision as part of targeted government programmes becomes the sole preserve of regulated financial institutions.

Microfinance is in its infancy in Papua New Guinea, and indeed financial sector development in general has not proceeded very far by comparison with the other developing market economies of APEC. Variants of the Grameen model are being trialled in a number of centres, and the Asian Development Bank is supporting the creation of a second tier microfinance fund and capacity-building facilities for MFIs. There is a single small regulated financial institution, currently inactive, but seeking restoration of its banking license, with as yet limited outreach, concerned with reaching a low-income clientele and serving microentrepreneurs. The savings and loan movement is in a revival phase, as is the State agricultural development bank.

APEC developing market economies in Latin America

Presented here are some generalizations about microfinance in Latin America, even though APEC's concern is with only three economies in the region, Chile, Mexico and Peru. However, there appear to be some commonalities in the regional microfinance culture, perhaps based on language and intraregional communication, the latter assisted by the activities of international agencies, especially the Inter-American Development Bank, and umbrella bodies with affiliates throughout the region. Commonalities observable in Latin American microfinance provide some interesting contrasts with what is seen in Asian APEC economies.

In general, the focus of Latin American MFIs is on providing financial services to microenterprises as businesses, rather than on providing services to

households of the poor. Loan sizes appear to be larger than in many parts of Asia, and the financing of agriculture and rural economic activities is relatively neglected in favour of servicing an urban clientele.

In a number of countries the commercialization of microfinance has proceeded relatively far, although larger banks which entered the field now have withdrawn in many cases. Instead, commercialization has occurred more owing to the operations of small regulated financial institutions, with many MFIs established by NGOs and community groups transforming themselves into such institutions. The creation of enabling legislative regimes in a number of countries has been a factor in this transformation pattern of commercialization.

Growth has been rapid in the regional microfinance sector. Over the period 1998-2001, according to one report, the sector grew at 25 to 30 per cent annually. With a loan portfolio of around $1.4 billion in 2000, the continuation of such growth would require as much money again for loanable funds in less than three years. Borrower numbers were estimated at around 1.5 million, while a similar number being served by credit unions. Historically, some credit unions appear to have been established more as conduits for external grant funds than as savings mobilizing institutions. This reverses the normal credit union priorities, and in fact deficiencies in savings mobilization appear to be a general weakness of MFIs in the region.

APEC transitional economies

In the transitional economies, China, the Russian Federation and Viet Nam, there is a range of experience and some marked contrasts in terms of overall economic and financial sector development. China offers a potentially enormous market for microfinance services, but effective financing for microenterprise development is hampered pending the resolution of major macroeconomic, fiscal and financial sector policy issues in the transition to a “socialist market economy”. In the meantime, interest rate controls remain a significant impediment to the emergence of sustainable microenterprise financing.

There are a small number of MFIs adapting the lessons of international microfinance experience to Chinese conditions, in association with bilateral agencies and under conditions agreed with central and local authorities. The Chinese NGO sector operates within narrow confines, however, and there is little official tolerance for unregulated financial service “experiments”. Without the official approval enjoyed by bilateral projects, MFIs would experience problems with their legal identity and institutional status.

The primary source of microcredit is the Government, which has adopted it as a poverty eradication tool. It is appropriate to call these programmes microcredit rather than microfinance as there is no attempt to incorporate savings into the model. The official policy of providing microcredit primarily in backward, resource-poor regions, rather than in regions (including cities) where greater economic opportunity exists for microenterprise, is another impediment to its success. This, together with the substantial interest rate subsidies involved, reflects the fact that microcredit is seen as a social rather than a financial sector programme. There is a need to allow local-level financial institutions, including the rural credit cooperatives, greater flexibility in setting interest rates for loans and deposits and to develop a range of bank and non-bank financial institutions, the latter including MFIs, engaged in microenterprise financing.

Viet Nam is experiencing a difficult transition to financial liberalization. Among many elements in a poverty reduction strategy, the Government has focused on the financial service needs of the poor, particularly in rural areas. Government efforts in the field have involved central bank regulation of interest rates, direction of the state banking system to provide subsidized credit to target groups and the creation of specialized financial institutions for the purpose. International agencies and NGOs have drawn the Government's attention to the potential of microfinance to alleviate poverty and stimulate Microenterprise development, and have supported a number of projects trialing imported microfinance models.

An autonomous NGO movement, as distinct from mass organizations set up by the State, is still substantially lacking. The mass organizations are important agencies for the provision of credit under official schemes. All these developments have occurred while Viet Nam has been moving to establish the institutional framework for a modern financial system and to introduce elements of liberalization as possible and appropriate. The growth of outreach of State banks during the last few years is a notable feature of the Vietnamese financial system.

In the states which comprised the former Soviet Union, there was typically very little micro- and small enterprise, since the environment of the centrally-controlled economies was not conducive to their development. During the economic difficulties of the 1990s, income inequality increased in the Russian Federation, with some 35 per cent of the population below the official poverty line at the end of that decade. These circumstances might be thought favourable to the flowering of informal sector and microenterprise activity, but the data suggest that less than 10 per cent of the labour force were employed in the microenterprise (up to 10 workers) and small enterprise (up to 200 workers) sectors at that time. This does not, however, allow for underenumeration in the informal sector, where operators have good reason to remain unobtrusive.

Internationally-supported efforts to establish microfinance in the Russian Federation commenced during the 1990s and took one of two forms. One was downscaling. This was a process in which commercial banks were encouraged, in projects supported by the European Bank for Reconstruction and Development, to adapt their financial technologies to the service of lower-income customers. The second approach is described as upscaling, supported by bilateral development assistance and international NGOs. This requires the creation of grass-roots organizations to offer specialized savings and credit programmes, with either group or individual client relationships (by contrast with which the downscaling efforts of the banks were strictly on an individual client basis). The financial crisis of 1998 set back all these efforts, with the systemic problems of Russian banking posing particular difficulty for the downscaling approach.

VII. MICROFINANCE AND OTHER FINANCING ALTERNATIVES IN THE DEVELOPED ECONOMIES

By employing the concept of alternative financing mechanisms for the reduction of financial exclusion, among which microfinance is simply one possibility, we are able to extend the discussion beyond the informal sector in developing economies. This enables us to embrace, in addition, certain deficiencies of financial service provision in more developed economies. There is a wide range of alternative financial mechanisms, outside the conventional operations of commercial banks, which may be observed in these economies. Indeed, the appropriate alternative mechanisms may be a good deal more heterogeneous than those needed in the developing economies.

First, it is appropriate to discuss the status of microenterprise in developed APEC economies and to consider the reasons why conventional microfinance, as practiced in the developing economies, has not flourished in developed economies. Microenterprise in the developed industrial APEC economies is of relatively minor importance. The microsector employs a small proportion of their workforces (for example the self-employed are only around a tenth of the male workforce in the United States) whereas in developing economies a majority of workers may be in the sector. In Australia, Canada or the United States, microenterprise suffers from the competition of large firms, whereas in developing economies there is a marked segmentation of markets, with the poor meeting most of their basic needs for services and commodities from informal sector sources. The industrial structure in Taiwan Province of China is marked by the strength of its SME sector, with firms typically in complex supply chain relationships with one another and with large enterprise, while with economic growth microenterprise has become a diminishing residual.

Microenterprise methods of production and distribution often come into conflict with regulatory standards in developed economies, whereas in developing countries the regulatory environment is often more permissive, or at least more open to negotiation. Also, the existence of social safety nets in high-income countries acts as a disincentive to engagement of the poor in microenterprise.

Attempts to apply microfinance principles in developed industrial economies encounter difficulties for a number of reasons. The poor have access to conventional sources of finance, notably credit cards. Group methods of organization encounter particular difficulties in the urban industrial setting. The reasons for this have to do with trust, and with people's valuations of their own time, influenced in part by the availability of social welfare benefits. Also, the principal vehicle for asset-building in developing economies is incremental investment in home improvement, a process suited to microfinancing. However, this is much more difficult in industrial economies where building codes and the commoditization of housing impede incremental home improvement by owner-occupiers.

The universe of alternative financial service delivery systems in developed member economies is substantial and diverse. Research conducted for the study on microbanking development, regulation and supervision by the APEC Economic Committee in 2002[17] provided some information on the diversity of alternative financing mechanisms in operation. Much successful practice in alternative systems of financial service delivery is based upon local, subnational, action by community groups and agencies and is not usually well publicized. The best approach to our substantial information deficit in this area would be to commission studies, based on a sound analytical framework, of financial service delivery mechanisms in developed economies. Australia is used below as an example of a developed economy situation.

VIII. FINANCIAL EXCLUSION IN AUSTRALIA

A study conducted in Australia noted the withdrawal, or at least the distancing, of commercial banking services from particular geographic areas and social categories, compelled by forces of rationalization and restructuring, discussed above. According to Connolly and Hajaj, the most basic, and the most important, financial service for most Australians is the bank account. The provision of a bank account is essential for receiving pay and benefits and making and receiving

[17] See footnote 9 above.

payments. Having a bank account is no longer a mere convenience, it is a prerequisite for engaging in the economic process'.[18]

According to these Australian researchers, the impacts are suffered by households and small business:

> "Less affluent communities which have lost banking services have tended to go into a steep decline which in due course touches almost every aspect of community life. This is not surprising in view of the significant manner in which Australian communities are geared through access to banking services. In many cases, 'the bank' acts as the main mechanism for attracting people to a given shopping locale. Over many years, other businesses have developed around a bank site, assuming that consumers would be attracted by the convenience of completing their financial transactions as well as their household shopping in the one place. The banks' presence is critical for individual banking needs (and for the provision, through local knowledge, of the capital needed for business to grow and re-invest."

The accompanying box contains a more detailed discussion of the consequences of financial exclusion drawing on this Australian study. It details conclusions that would probably apply in other developed APEC economies, such as Canada, New Zealand and the United States.

In Australia, there have been a number of responses, both governmental and community-based, to this removal of services. They include the establishment of transaction centres for financial services in post offices, supermarkets and other places in communities from which the banks have departed. They include the emergence of community banks in a growing number of towns and suburbs, facilitated by a franchising operation in which a particular dynamic provincial bank (Bendigo Bank) offers citizen groups access to its banking license under a strict set of conditions as to capital commitment, community involvement and operational standards.

The responses also include initiatives by the Australian credit union movement to fill financial service gaps in some communities. The Australian credit unions are, quite apart from their responses to these more recent changes in the Australian financial landscape, an interesting and instructive study of alternative approaches, given their progressive modernization and embrace of technology and

[18] C. Connolly and K. Hajaj, *Financial Services and Social Exclusion,* Financial Services Consumer Policy Centre, University of New South Wales, Sydney, 2001, available online at http://www.fscpc.org.au/publ/publications.htm.

FINANCIAL EXCLUSION IN AUSTRALIA

Connolly and Hajaj have studied the consequences for households and communities of financial exclusion, defined as "the processes that prevent poor and disadvantaged social groups from gaining access to the financial system." They focused particularly on the effects of the closure of bank branches and agencies.

Community consequences of financial exclusion

In urban areas

- Increased travel requirements
- Higher incidence of crime
- General decline in investment
- Difficulties gaining access to credit
- Decreased choice in local shops and businesses
- Increased unemployment

In regional and remote areas

- Financial drain from the community, as people travelled to larger centres to do their banking and shopping, with 88 per cent of respondents reporting that their expenditure locally had decreased
- Loss of financial investment, with 30 per cent of respondents indicating that the new financial environment had persuaded them not to proceed with undertaking a loan
- Loss of confidence in the community, with 90 per cent of respondents indicating they were now more pessimistic about the future of their community and 39 per cent reporting that they would leave if they could

Business consequences of financial exclusion

In urban areas

- General decline in passing trade
- Loss of access to middle class and higher-income consumers
- Higher retail tenancy vacancy rates
- Less investment
- Difficulties in gaining access to banking staff with local knowledge, especially regarding lending

- Higher cash handling costs
- Higher insurance premiums
- Increased risk of crime

In regional and remote areas

Consequences for small businesses seem to be exacerbated. Research suggests that small businesses were the first to feel the effects of any withdrawal of financial services. These consequences included:

- Increase in cheque cashing
- Loss of cash sales
- Accumulation of excess cash
- Delay in deposit of cheques
- Increase in bad debts

Another study cited by Connolly and Hajaj added the following consequences:

- Increased security concerns owing to the lack of secure facilities to deposit takings and the need to transport large amounts of cash to and from the nearest bank branches in an unsuitable vehicle such as a private car
- Difficulties in obtaining small change
- Farming businesses being particularly disadvantaged by the loss of bank staff with intimate knowledge and experience in rural banking

Connolly and Hajaj cite British research findings that a lack of local knowledge among financial institutions can perpetuate a cycle of urban degeneration. They note also that loss of local knowledge is a significant issue in both urban and regional areas, as it tends to make financial institutions more cautious in local lending, falling back on national lending models which may not be appropriate in the local area.

Source: C. Connolly and K. Hajaj, Financial Services and Social Exclusion, Financial Services Consumer Policy Centre, University of New South Wales, Sydney, 2001, available online at http://www.fscpc.org.au.

their efforts to reach out to new communities, including Aboriginal people and migrants.

There is also some evidence of the reinvigoration of a nineteenth century social institution, the "Friendly Society", as a base for providing access to financial services to the long-term unemployed and low-income families. Efforts are being made to associate friendly societies and credit unions with rotating savings and credit associations (RoSCAs), which operate along traditional lines among the recently-arrived in some migrant communities. Other initiatives are being taken by voluntary welfare agencies to free low-income earners (the working poor) who do not have access to bank credit from dependence on so-called 'payday lenders' who operate at the factory gate. Such schemes have often started as low- or no-interest lending, but experience has convinced some agencies to attempt a greater degree of cost recovery.

It is obvious that most of the Australian microbanking services described above are directed to households rather than to enterprises, and to financing consumption rather than investment. This serves to remind us of an important difference, discussed above. This difference is between the developed economies, in which there is usually a clear distinction between household and enterprise, and where relatively few enterprises are household-based, and the developing economies where, typically, the household *is* the enterprise.

IX. THAILAND'S PROMOTION OF SPECIALIZED FINANCIAL INSTITUTIONS

In 2003, Thailand became Chair of APEC and, among other initiatives, introduced the topic of specialized financial institutions (SFIs) to the agenda of APEC's Economic Committee. SFIs were described as institutions underwritten by Governments and designed to fulfil specific social purposes, filling gaps in financial service provision left unfilled by commercial entities. Thailand proposed this theme as an extension of initiatives taken by Mexico in 2002 to focus attention on financial exclusion in APEC economies.

In fact, there are grounds for questioning the degree to which emphasis on SFIs could be regarded as supportive of a financially-inclusive financial sector. This is because in the developing APEC economies there remain significant elements of financial repression, supported in many cases by the activities of SFIs. In these economies vestiges of earlier approaches to financial institutions and markets continue to exist. These include credit guarantees and insurance, state participation in the capital and management of financial institutions, differential interest rates and cross-subsidies, and preferential rediscount rates and facilities furnished by

monetary authorities at the behest of Governments. Such activities lessen the capacity of financial systems to achieve financial inclusion in a sustainable fashion.

Among the financial sector measures is a wholesale moratorium on farm debt and the injection of some US$ 1.5 billion of spending power across the rural sector through a village development fund. Each of these initiatives was implemented by a state SFI. These and other stimulatory measures are credited with contributing to the boom in consumer spending that supported economic growth in Thailand over the period 2001-2004.

Thailand's farm debt moratorium expired during 2004. The Bank for Agriculture and Agricultural Cooperatives is an SFI with an international reputation as an effective and efficient rural development bank. It was required by the Government to carry the outstanding farm debt, although its management had reservations about eventual repayment and anticipated damage to the bank's balance sheet.[19] As for the other initiative, the village development fund, there is a dearth of data concerning their loan collection performance. The possibilities of politicized lending and damage to the rural credit culture cannot be excluded. Both the debt and village banking initiatives have implications for the sustainability, and hence capacity for inclusiveness, of Thailand's rural financial system.

The Thai study of SFIs, published by the Economic Committee towards the end of 2003, appeared to endorse the provision of subsidized credit by SFIs to low-income households and microenterprises despite the implications of such lending for rural credit culture and financial sector development.[20] That APEC members passed this report through the Economic Committee does not mean they had committed themselves to such policies.

---

[19] M.-L. Haberberger, L. Wajananawat and N. Kuasakul, "Case Study: Bank for Agriculture and Agricultural Cooperatives, Thailand" in *The Challenge of Sustainable Outreach. How can Public Banks Contribute to Outreach in Rural Areas? 5 Case Studies from Asia* (Eschborn, Deutsche Gesellschaft für, 2003), pp. 249-288, available online at http://193.97.170.92/themen/economic-development/download/COSO-5CaseStudiesfromAsia.pdf. This study of BAAC notes that "[i]n the past...BAAC ha[d] managed to sustain pressures from political interest groups and to resist interference from local government in borrower selection and lending decisions." However, as a result of the 1997 financial crisis and international debt exposure, about half of the bank's equity was lost. With the advent of the Thaksin government in 2001, the study judges that the government-directed farm debt suspension was "...affecting the autonomy of the BAAC's operations." Further, "the outcome of the debt suspension program is uncertain. It certainly interrupted BAAC's struggle for viability and presents a potential threat to its long-term sustainability and [seems likely to] support the spread of moral hazard of BAAC borrowers. Therefore, BAAC should be well prepared for a very challenging time ahead from 2004 onwards."

[20] APEC, chapter 2, "Role and Development of Specialized Financial Institutions" in *2003 APEC Economic Outlook,* (Singapore, APEC, 2003), available online at http://www.apecsec.org.sg/apec/publications/free_downloads/2003.html.

X. MORE RECENT DEVELOPMENTS

Among the outcomes of the APEC process for 2003 was a call in the APEC Leaders' Declaration for action to "mainstream the informal sector".[21] This appeared to recognize the importance of the informal sectors of APEC economies and to legitimate efforts to bring household production units in those informal sectors within reach of formal financial services. This positive development was coupled with an endorsement, by SME Ministers, of microfinance as "an instrument to reduce the 'financial exclusion' often experienced by micro-enterprises in the APEC economies". The Ministers declared that "...there should be a clear policy framework and development plan for a micro-finance system in APEC economies where the need exists for the extension of the financial system to incorporate the financially excluded".[22] These statements represented explicit acceptance of the concept and language of financial exclusion into the APEC lexicon and provided a basis for further progress should APEC members be disposed to pursue the issue in future. Recognition of these principles at the political level, however, may not be enough to overcome inertia at other levels, as discussed below.

During 2002 (under Mexican leadership) and 2003 (under Thai leadership), issues of relevance to financial exclusion were discussed within the Economic Committee process of APEC. This was strategically sound, in that the Committee was established to conduct policy-relevant economic analysis and dialogue as well as to advance structural reform within APEC economies. However, under Chilean guidance in 2004, the Economic Committee was redirected to consider other issues. The locus of activities concerned with microfinance and microenterprise financing switched to the SME Ministerial process and the newly created Sub-Group on Micro-enterprises. The new Subgroup arose with the realization that the SME Working Group was not an ideal forum for discussion of the quite distinct problems of microenterprise. However, the Subgroup is required to report to the annual APEC Ministerial Meeting via the SME Working Group and the SME Ministers.

Given a close identification between microenterprises and households in the developing APEC economies where financial exclusion is most extreme, the Subgroup might seem to be an appropriate forum to progress an agenda of financial inclusion. It also appears well-placed to work on the Leaders' instruction, from

[21] APEC 2003 Economic Leaders' Declaration: Bangkok Declaration on Partnership for the Future, Bangkok, 21 October 2003, available online at http://www.apecsec.org.sg/apec/leaders_declarations/2003.html.

[22] Joint Ministerial Statement at the tenth APEC Small and Medium Enterprise Ministerial Meeting, Chiang Mai, Thailand, 7-8 August 2003, available online at http://www.apecsec.org.sg/apec/ministerial_statements/sectoral_ministerial/small_medium_enterprises/2003_small_and_medium.html.

2003, to mainstream the informal sector. However, there seems still to be some ambivalence within the SME Working Group concerning initiatives to incorporate the informal sector into policy frameworks. This is despite the Working Group having taken up the challenge in its work programme from 2004. Conceptual issues also pose a barrier to progress, notably the difficulty of agreeing upon operationally-useful definitions of microenterprise among so diverse a group of economies. Where issues of microenterprise financing are discussed, there is some tendency to consider them outside a financial sector development framework. For these reasons, progress has been uneven. Definitional difficulties lead to the introduction of inappropriate small and medium enterprise issues into the Subgroup discussions, and relatively few economies have fielded experts on micro issues at the Subgroup meetings.[23] Potentially useful initiatives by developing member economies (for example, a Peruvian proposal to consider micro- and small enterprise financing as a tool for mainstreaming the informal sector) are to be progressed in 2005. A proposal by Viet Nam to secure endorsement for an APEC Fund for Microenterprises, with a special concern for microenterprise financing and participation by international financial institutions active in the region, appears to have stalled.

These considerations raise a question, whether the SME Working Group and the Subgroup are the most appropriate forums in which to progress an essentially financial sector issue, that of financial exclusion. The SME process may yield benefits, in terms of more appropriate policies for increasing the productivity of microenterprises and their incorporation into the formal sector. However, the financial inclusion of households, in their dual roles as units of consumption and production, might be better addressed through an APEC forum concerned with issues of financial sector development. For this purpose, the APEC Finance Ministers' process may be more suitable. Finance Ministers already have work in progress on SME financing within APEC economies, suggesting that they are prepared to consider lower-level issues of financial sector "architecture". Also, China has proposed the creation of an Asia-Pacific Finance and Development Centre within the Finance Ministers' process. This could offer a platform for the exploration of financial exclusion, if its charter were made sufficiently broad. Without expert assistance from a financial sector forum, the SME process is unlikely to achieve the "clear policy framework and development plan for a micro-finance

[23] In recognition of this, SME Ministers noted that "In recognizing ME as a unique sector of the economy, Ministers noted the need for better participation by ME specialists in the Subgroup'." Joint Ministerial Statement at the eleventh APEC Small and Medium Enterprise Ministerial Meeting, Santiago, Chile, 6-7 October 2004, available online at http://www.apec.org/apec/ministerial_statements/sectoral_ministerial/small_medium_enterprises/2004_small_and_medium_html.html.

system in APEC economies ... to incorporate the financially excluded", for which the SME Ministers called in 2003, as noted above.[24]

XI. CONCLUSION

After explaining the circumstances under which microbanking and microenterprise development issues were introduced into the APEC agenda over the period 2002-2003, this paper has argued the case for the continuing relevance of the concept of financial exclusion to all of the APEC economies, whether advanced industrial, developing or transitional. It pointed to evidence that, in all APEC economies, significant population subgroups are excluded from access to the services of formal financial institutions. It argued that providing such access would bring economic benefits, both in terms of aggregate economic efficiency and in terms of interpersonal equity and equity between households. The paper examined the distinction between microbanking and microfinance, concluding that the latter is a subset of the former and primarily applicable to the developing economies, rather than representing a solution to the generalized problem of financial exclusion.

The paper then discussed the different forms that microfinance has taken in a wide range of institutional settings in developing economies within the APEC region. After this it examined alternative financial service delivery systems that have developed in a representative advanced APEC economy, Australia, and which are likely to have analogues in other such industrial economies in which financial exclusion persists.

This paper has argued that Mexico made a promising beginning by introducing issues of microbanking and microenterprise development to the APEC agenda in 2002. Mexico secured the endorsement of the APEC Ministerial Meeting for a comprehensive statement of principles on microbanking development, regulation and supervision, which was paralleled by a comprehensive endorsement of microfinance as a measure for microenterprise development by the APEC Ministers responsible for SMEs. It also introduced the concept of financial exclusion into the APEC vocabulary. These advances signaled the acceptance by APEC economies of the need for financially-inclusive policies.

Thailand's championing of specialized financial institutions in APEC the following year may have reduced the momentum for reform. However, the process continues, with other APEC forums, including the SME process and

[24] See footnote 22.

a specially-constituted Sub-Group on Micro-enterprises, currently providing the locus of activities for the reduction of financial exclusion as it affects the populations of APEC economies. However, these forums suffer from impediments, in terms of their capacity to address the issues effectively. Among these is their lack of a comprehensive financial sector development philosophy. Further progress within APEC towards the elimination of financial exclusion would be assisted by cross-sectoral cooperation, to which the resources of the APEC Finance Ministers' process should be committed.

EFFECTS OF INFRASTRUCTURE ON REGIONAL INCOME IN THE ERA OF GLOBALIZATION: NEW EVIDENCE FROM SOUTH ASIA

*Prabir De** and *Buddhadeb Ghosh***

The South Asian Association for Regional Cooperation (SAARC), a combination of seven nations – Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka – in a diverse subcontinent of Asia, is going through the process of structural adjustment programmes. Without proper trading infrastructure, no country or economic bloc can succeed in the new borderless world where, for all practical purposes, regional cooperation has become an instrument for creating a competitive edge over other regional blocs. This paper tries to find out the role played by infrastructure facilities in economic development across South Asian countries over the past quarter century. The findings are statistically very significant to warrant major changes in future regional policies in order to remove rising regional disparities in both infrastructure and income. This also has a strong bearing on the success of poverty removal policies as the poor are regionally concentrated in such a diverse and heterogeneous region of the world, where market imperfections abound and heterogeneities are insurmountable.

At a time when the world is set to become virtually borderless in terms of flows of commodities and factors of production, it apparently may be felt that regional economic cooperation is coming to an end. If reality is any guide, however, the need for economic integration and cooperation leading to a regional economic bloc is much more pressing for the developing nations in a rule-based competitive World Trade Organization environment. Theoretically and practically, justification for stronger economic cooperation among the South Asian countries has become substantial beyond their inherent historical, cultural and socio-economic commonalties, geographical and ecological propinquity in time and space. Indeed,

* Research Associate, Research and Information System for the Non-aligned and Other Developing Countries, India Habitat Centre, India.

** Associate Scientist, Economic Research Unit, Indian Statistical Institute, India.

countries in South Asia were fully under one Government (British) rule just half a century ago. Bangladesh, India and Pakistan were ruled by the same laws, and had a common currency; even Nepal and Sri Lanka permitted the Indian rupee to circulate freely. Countries in the region, divided by a common heritage and bondage, quarrels and conflicts, have now to reorient their internal and external policies for mutual benefit.

Being one of the poorest regions of the world, there is a high degree of simultaneity among all seven members of SAARC insofar as government initiatives in undertaking liberalization policies are concerned (see table 1).[1] Despite the

Table 1. Selected economic and social indicators of South Asian countries in 2002

	Population (million)	*Population growth*[a] (%)	*Population density* (per sq km)	*Poverty headcount*[b] (%)	*GDP per capita*[c] (US$)	*GDP per capita PPP*[c] (US$)	*Trade in goods*[d] (%)	*Gross FDI*[e] (US$ Bln.)	*Gross CAB*[f] (US$ Bln.)	*Gross FCF*[g] (%)
Bangladesh	135.68	1.91	1 042	33.70	396.20	1 501.34	29.45	0.953	0.742	23.09
Bhutan	0.85	3.40	18	..	580.10	..	50.07	0.004	-0.042	47.27
India	1 048.64	1.92	353	28.60	493.27	2 364.61	20.78	22.592	4.656	22.14
Maldives	0.29	2.79	957	..	2 262.50	..	76.97	0.117	-0.044	26.87
Nepal	24.13	2.70	169	..	240.68	1 216.88	35.81	0.058	-0.165[h]	19.21
Pakistan	144.90	2.77	188	32.60	518.41	1 719.25	35.80	6.170	3.871	13.80
Sri Lanka	18.97	1.39	293	..	898.82	3 159.75	65.21	2.061	-0.264	23.65
South Asia	1 373.46	2.01	431	31.63	770.00	1 992.37	44.87	31.956	8.754	25.15

Source: World Bank, *World Development Indicators CD-ROM 2004.*

Notes: [a] Decadal population growth rate for the period 1991-2001.

[b] Taken in percentage of population.

[c] Taken in constant 1995 US$.

[d] As a percentage of GDP.

[e] Gross cumulative foreign direct investment, taken at current US$ billion for the period 1991-2002.

[f] Gross current account balance, taken at current US$ billion.

[g] Gross fixed capital formation, taken in average as a percentage of GDP for the period 2000-2002.

[h] Data are for the year 2001.

.. Data not available.

[1] In essence, all these countries undertook such economic policies specifically from the late 1980s and early 1990s. These essentially involve removal of licensing and monopolistic practices, de-nationalization, permission of foreign equity participation in domestic industries, etc. In this endeavour, Sri Lanka is the only country which was embarked upon the path of economics of reforms as early as 1977 (Kelegama, 1998). A good review for these countries can be found in ESCAP (2002).

recent success in raising the general level of prosperity, as observed in some of the countries in South Asia, many changes are taking place that are reshaping regional integration in South Asia (Dash, 1996; Paranjpe, 2002; Srinivasan, 2002; RIS, 2004). However, the real problem facing most of the South Asian countries is not necessary demographic but economic in nature, i.e. how to ensure good infrastructure for all the countries in the region for mutual benefit (Ghosh and De, 2000b; De and Ghosh, 2003). When South Asian countries agreed to establish the South Asian Free Trade Area (SAFTA) with effect from 1 January 2006, an important objective was improved and integrated transport infrastructure to economically help member countries not only to reduce transaction costs but also to generate higher intraregional trade and promote international market access. Faster progress in infrastructure development will be crucial to sustaining South Asia's competitive advantages. The low quality of infrastructure and high logistics costs for South Asian countries are the result of underdeveloped transport and logistics services and slow and costly bureaucratic procedures dealing with intraregional trade. Opportunities for improvement of infrastructural facilities are immense in this region.

The purpose of this paper is to investigate the role played by infrastructure facilities in determining per capita income across South Asian countries over different timespans during the past quarter century, particularly to understand better the linkages between infrastructure and income across the region. Section I deals with data and methodology. Sections II and III elaborate on regional disparity in per capita income and infrastructure endowment among South Asian countries. Section IV focuses on the nature and strength of the relationship between different categories of infrastructure endowments and economic development. Finally, section V presents the summary, limitations of the study and implications for policy.

I. DATA AND METHODOLOGY

The most serious hurdle has been the lack of a consistent set of data on income, labour, capital and other related variables in South Asian countries over a reasonable period of time. The problem becomes multiplied when one has to work with infrastructure variables' for, in the absence of detailed information on infrastructure investment, one has to opt for infrastructural facilities or services rather than capital expenditures on such areas.

For the present purpose, we use decadal data (and not manual figures) for seven South Asian countries over the period 1971-2001.[2]

Infrastructure facilities can be understood largely as public infrastructural inputs from the supply side. However, depending on the nature of services delivered, infrastructure can be broadly divided into physical, social and financial categories – all economically desirable. The first of these consists of transport (railways, roadways, airways and waterways), electricity, irrigation, telecommunication, water supply and the like. Notwithstanding their very direct impact on production through external economies, they are beneficial for "crowding in" private investment (both domestic and foreign) in the concerned geographical region. In a "cumulative causation" fashion, physical infrastructure contributes to economic growth through lower transaction cost and generates "multipliers" of investment, employment, output, income and ancillary development. Social infrastructure, through the enrichment of human resources in terms of education, health, housing, recreation facilities and the like, improves the quality of life. This is primarily responsible for the higher concentration of better human resources in a region, and helps improve productivity of labour. Finally, financial infrastructure incorporating banking, postal and tax capacity of the concerned population represents the financial performance of the state. These three taken together represent the relative income-generating capability of a state within a country or a country within a region. Hence, even in a federal polity, some amount of competition is inevitable among the constituent regions.

We have taken 11 important infrastructural variables across the seven South Asian countries for four different time points over the period 1971-2002. Unlike most other inputs into the production process, the supply of infrastructural facilities is not continuously derivable, i.e. it increases as fixed inputs almost appear to leap over different time spans. We have tried to consider infrastructure variables from most of the sectors of the economy, from agriculture to transport to banking to communication. These include (a) transport facilities (TF), which are composed of railway route length in kms per thousand sq km of area, and road length in kms per thousand sq km of area, and waterways in kms per thousand sq km of area, (b) proportion of irrigated land area to total crop land area (IL), (c) per capita

[2] The major sources of these data are various issues of (i) *World Development Indicators,* World Bank, (ii) *Economic Survey,* Government of India, (iii) *Statistical Abstract,* Government of India, (iv) *Direction of Trade Statistics Yearbook,* International Monetary Fund, (v) *Asian Development Outlook*, Asian Development Bank, (vi) *Economic Survey,* Government of Pakistan, (vii) *Bangladesh Economic Review,* Government of Bangladesh, and (viii) *Statistical Yearbook,* Government of Sri Lanka. This data set is supplemented by various publications of the Centre for Monitoring Indian Economy (CMIE) and the India Infrastructure Database (Ghosh and De, 2005b).

consumption of electricity (PCE), (d) telephone main line per 1,000 persons (TL), (e) fertilizer consumption per 100 grams per hectare of arable land (FC), (f) tractors per 100 hectares of arable land (AM), (g) literacy rates (LR), (h) infant mortality rates (IMR), (i) domestic credit provided by the banking sector as percentage of GDP (BC), (j) tax collected as percentage of GDP (TC) and (k) port capacity utilization (PC).[3]

II. MEASURES OF INFRASTRUCTURE DEVELOPMENT

An attempt is made here to estimate some composite index of infrastructure development, namely the infrastructure development index (IDI), having derived the weights for 11 representative indicators of infrastructure, namely TF, IL, PCE, TL, FC, AM, LR, IMR, BC, TC and PC on the basis of principal component analysis (PCA). The basic limitation of the conventional method of construction of IDI is that, while combining the infrastructure indicators, they either give subjective ad hoc weights to different indicators or leave them unweighted. Since there is every possibility for the indicators to vary over time and space, assignment of equal ad hoc weights could lead to unwarranted results. To overcome these limitations, we have employed the well-known multivariate technique of "factor analysis" from which follows the required weights (Fruchter, 1967).

In the PCA approach, the first principal component is that linear combination of the weighted variables which explains the maximum of variance. Hence, here the sole objective is to explain the variance across the countries for each of the variables. Thus the numerical bias of this method does not give much value to economic judgement.

We have at our disposal values of 11 infrastructure variables for four different years, 1971-1972, 1981-1982, 1991-1992 and 2001-2002, across seven South Asian countries, namely, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The last two breaks help us evaluate the impact of differential infrastructure endowments on the performance of the countries in the post-liberalization period.

[3] Supply of infrastructure is a sort of static stock available over different discrete time points that make it difficult for continuous treatment in a framework of typical neo-classical growth regression. On the other hand, an individual infrastructure facility on overhead basis is certainly more important than the mere amount of capital investment on the facility. The point is not that investment is unimportant. Over and above, due to the non-availability of a consistent and reliable set of data on various infrastructure facilities across South Asian countries over a reasonably long period of time, we have proxied some infrastructure variables by close substitutes cases such as education and health care services, where we have considered literacy and infant mortality rates as indicators to represent the state of education and health care in the region.

Table 2. Weights of infrastructure variables: PCA

Variables	1971-1972		1981-1982		1991-1992		2001-2002	
	Weights	Rank	Weights	Rank	Weights	Rank	Weights	Rank
IL	0.475	11	0.393	10	0.380	10	0.421	10
PCE	0.740	9	0.777	8	0.814	5	0.888	4
PC	0.836	7	0.794	7	0.884	3	0.851	5
TL	0.601	10	0.104	11	-0.305	11	-0.058	11
TF	0.934	2	0.908	5	0.928	1	0.905	1
FC	0.888	4	0.943	2	0.895	2	0.894	2
LR	0.910	3	0.926	4	0.833	4	0.894	3
IMR	0.868	5	0.886	6	0.802	6	0.670	7
BC	0.788	8	0.438	9	0.755	8	0.638	8
AM	0.843	6	0.943	1	0.797	7	0.800	6
TC	0.967	1	0.935	3	0.633	9	0.482	9
Eigen value	7.341		6.709		6.288		5.839	
Total variance (%)	67.00		61.00		57.00		53.00	

Note: Weights count only first principal factor (unroated factor loadings).

The weights and corresponding ranks of 11 infrastructural variables are presented in table 2. A few observations are as follows.

First, TF as desired has become the most influential infrastructure variable for most of the years. Thus, transport facilities such as road, rail and waterways have been emerging as important factors in determining economic life across the South Asian countries.

Second, next to TF, FC and LR have appeared as the other two important factors. IMR has been unequivocally left as the least influential factor.

Third, in contrast to popular belief, TL and IL have emerged as factors of low importance in determining IDI.

It may be demanding to touch upon the intercountry variations of the raw infrastructure variables over time.[4] Interestingly, the coefficients of variation (CV) for all the facilities have been either falling or have remained almost constant over time, which, in another way, indicates a tendency towards equalization of infrastructure facilities across the countries in South Asia. That is, the relative difference of these facilities among these countries has been narrowing down over

[4] The values of the mean, standard deviation (SD) and CV of the raw infrastructure variables over time, are given in appendix 1.

time. First, we have not found any single facility whose supplies across the countries have become equitable over time. Second, while the coefficient of variations for TL has been rising continuously from 0.639 in 1971-1972 to 0.820 in 2001-2002 (incidentally, this is the highest value of disparity among all), that of PC (port facility) has marginally increased from 0.878 in 1971-1972 to 0.883 in 2001-2002. Thus, on the whole, the supply of infrastructure facilities as appeared from the CV of raw data bears some symptoms of long-run convergence in this region in a neo-classical sense. Or, in other words, overall infrastructure facilities in the region have been increasing in the recent period.

Spatial variation of IDI over time

An attempt is made here to investigate the spatial variation of infrastructure stock across the South Asian countries over time. The weights derived from PCA are used as the multiplying factor with the unit free values of the 11 infrastructure variables. However, after multiplying the unit free values with the weight of each of the 11 factors we have obtained the individual index. Then adding all 11 indices for a particular country in a particular year we have derived the IDI for that country. The process is repeated for all seven countries in South Asia for four years. The final values of IDI with corresponding ranks across the countries over time are given in table 3a.

Table 3a. Infrastructure Development Index (IDI): PCA

	1971-1972		*1981-1982*		*1991-1992*		*2001-2002*	
	IDI	*Rank*	*IDI*	*Rank*	*IDI*	*Rank*	*IDI*	*Rank*
Nepal	3.928	5	5.323	5	6.319	5	7.871	5
Bangladesh	7.374	4	8.187	4	9.277	4	10.527	4
Bhutan	2.183	7	2.392	7	2.502	7	3.960	7
Maldives	3.343	6	4.506	6	4.000	6	6.722	6
India	13.007	3	12.995	3	14.897	3	16.045	2
Pakistan	14.094	2	13.737	2	15.672	2	15.738	3
Sri Lanka	24.238	1	23.377	1	20.770	1	21.842	1
Mean	9.738		10.074		10.491		11.815	
SD	7.341		6.709		6.288		5.839	
CV	0.754		0.666		0.599		0.494	

Interestingly, the coefficient of rank correlation of IDI has been very high throughout the years (table 3b). It tells us that the relative positions of the countries in South Asia have remained unaltered in terms of infrastructural endowment over the past three decades. The evolution of these countries has produced some interesting outcomes as revealed from both values and rankings of IDI and values of mean, standard deviation (SD) and CV. That is, although the disparity among the countries in terms of infrastructure endowments is low, there is nothing unusual in the estimated infrastructure development indices across the countries.

Table 3b. Year-wise rank correlation of IDIs

	1971-1972	*1981-1982*	*1991-1992*	*2001-2002*
1971-1972	1.000	1.000	1.000	0.964
1981-1982		1.000	1.000	0.964
1991-1992			1.000	0.964
2001-2002				1.000

Insofar as regional convergence or divergence in income is concerned, the easiest way to verify that hypothesis is to establish the relationship with the help of initial income and long run rate of growth (Barro and Sala-i-Martin, 1995 in general; Ghosh, Marjit and Neogi, 1998 for India). However, since infrastructure by any definition is a flow of services out of a certain amount of capital stock at a point of time which essentially provides the service for income or output generation, the Barro-type testing cannot be done here. Logically, we have opted to show countries in final IDI ranking over time, which is given in table 4.

Table 4. Countries in descending order of IDI

1971-1972	*1981-1982*	*1991-1992*	*2001-2002*
Sri Lanka	Sri Lanka	Sri Lanka	Sri Lanka
Pakistan	Pakistan	Pakistan	India
India	India	India	Pakistan
Bangladesh	Bangladesh	Bangladesh	Bangladesh
Nepal	Nepal	Nepal	Nepal
Maldives	Maldives	Maldives	Maldives
Bhutan	Bhutan	Bhutan	Bhutan

Table 4 shows consistency in Sri Lanka's development during the past quarter century. The ranks of the countries were determined in 1971-1972, and the same set of countries in the respective groups has been repeated in 1981-1982, 1991-1992 and 2001-2002. In the post-reform period, there is a noticeable change in this grouping. India is benefiting from the reform started in 1991 and has in fact replaced Pakistan, occupying second place after Sri Lanka in 2001-2002. Caution is needed at this stage. As the values of IDI are derived from a principal component analysis, they represent some composite scores in a comparative perspective, and do not mean an absolute decline. The apparent decline of the value for Sri Lanka and rise for other nations in a waypoint to a long-term tendency towards regional equalization.

Two notable trends have also been confirmed from this analysis. There has been no compositional change among the countries holding the bottom three positions. Bhutan has recorded the lowest infrastructure endowment in all four points. In essence the relative positions of the countries have remained unaltered during the past quarter century.

Individual infrastructure facilities

The revelation so far made on the basis of IDI might suggest that intra-South Asia variations are so diverse that an aggregate concept may not make much sense. The actual picture in terms of each of the 11 infrastructure variables, however, is not so straightforward. As the construction of IDI implies, the losing countries consistently represent lower values for most of the individual infrastructure facilities. Table 5 presents the list in terms of rank of individual infrastructures. South Asia's landlocked countries, namely Nepal and Bhutan, comprise the geographical area that suffers most.

Even those countries that are ranked higher – India (in IL and IMR), Sri Lanka (in IL), Pakistan (in IMR) and Bangladesh (in TC and TL) – have inadequate infrastructure facilities. Interestingly, Maldives has a better penetration of telephone lines (which may be owing to its small size), but is inadequate in other infrastructure endowments. All infrastructure endowments are inadequate in Nepal and Bhutan.

A very common feature for all of these countries is that the spread of infrastructure varies across three broad categories of regions: congested, intermediate and lagging. Congested regions are characterized by a very high concentration of population, industrial and commercial activities and public infrastructure. Lagging regions are characterized by a low standard of living owing to small-scale agriculture or stagnant or declining industries and poor infrastructural facilities. The intermediate region lies in-between. However, the performance in

Table 5. Ranking of countries in individual infrastructure facilities

	IL	*PCE*	*PC*	*TL*	*TF*	*FC*	*LR*	*IMR*	*BC*	*AM*	*TC*
1971-1972											
Nepal	6	5	5	7	5	5	5	5	5	4	4
Bangladesh	5	4	4	6	3	4	3	2	4	5	5
Bhutan	4	6	5	5	6	6	7	6	6	6	7
Maldives	7	6	5	2	7	6	6	6	6	6	6
India	3	1	1	4	2	3	2	3	3	3	3
Pakistan	1	2	3	3	4	2	4	4	1	2	2
Sri Lanka	2	3	2	1	1	1	1	1	2	1	1
1981-1982											
Nepal	3	5	5	5	5	5	5	4	5	4	4
Bangladesh	6	4	3	6	3	3	3	2	6	5	6
Bhutan	4	7	5	7	7	6	7	6	7	6	7
Maldives	7	6	5	1	6	7	6	6	1	6	5
India	5	1	4	4	2	4	2	3	4	3	3
Pakistan	1	2	2	3	4	2	4	5	3	2	2
Sri Lanka	2	3	1	2	1	1	1	1	2	1	1
1991-1992											
Nepal	2	5	5	6	5	5	5	3	5	4	5
Bangladesh	3	4	3	7	4	2	4	2	6	5	6
Bhutan	4	7	5	5	7	6	7	6	7	6	7
Maldives	7	6	5	1	6	7	6	6	4	6	2
India	5	2	2	4	2	4	2	4	1	3	4
Pakistan	1	1	4	3	3	3	3	5	2	1	3
Sri Lanka	6	3	1	2	1	1	1	1	3	2	1
2001-2002											
Nepal	3	5	5	6	5	5	4	4	3	4	5
Bangladesh	2	4	3	7	4	2	5	2	6	5	7
Bhutan	6	7	5	4	7	6	7	6	7	6	6
Maldives	7	6	5	1	6	6	6	3	5	6	2
India	5	1	1	3	2	4	2	5	1	2	4
Pakistan	1	2	4	5	3	3	3	7	4	1	3
Sri Lanka	4	3	2	2	1	1	1	1	2	3	1

individual infrastructure does serve, for all practical purposes, both the policymakers as well as the potential investors who can choose the regions for a higher return on investments. Hence, the scope for improvement in the lagging regions could be utilized through better incentives to private sector investment and is a coordinated regional development policy for South Asia. In this context, it is worth mentioning the work of Basu (2001): "If in an economy some people control all the water, some all the food and some all the energy, even if the total amount of water, food and energy is very large, if this society does not learn how to exchange and trade, it will be a very poor society; indeed so poor that all may die. In a modern nation, it is not enough for there to be a lot of medical knowledge and engineering knowledge and knowledge of information technology. If the nation does not have the organization to share and exchange this knowledge and to harness it where it is needed, it will be a miserable and poor nation. Since we do not typically think of organizational skill and the ability for coordinated action as a resource or capital, it is easy to overlook their importance."

The critiques of interregional comparisons cannot refute the fact that lower inter-South Asia variations in IDI (and which are not unachievable) could facilitate better utilization of hitherto unutilized resources in the lagging regions. Hence, a major outcome of a spatial approach to economic growth analysis is to call for more coordination between government agencies at all levels and for the integration of all infrastructure decisions in an overall regional development strategy.

Before the wisdom of such a development strategy is assessed, a number of questions must be answered. For example, how do we identify the mechanisms by which infrastructure generates regional growth? What types of infrastructure investments are crucial for promoting regional growth? Does the existing infrastructural stock put South Asia in any steady-state position? These questions are being dealt with in the subsequent sections.

III. COMPARISON OF INCOME OVER TIME

As discussed earlier, it is widely believed that infrastructure is not an end in itself. It is a composite means for generating income. Table 6a presents the rankings of the countries in terms of per capita income (PCI) at constant 1995 United States dollars from 1971-1972 to 2001-2002. Caution must be made here. Although economists' concept of regional imbalance is generally represented by the coefficient of variation over time and across countries, it is highly probable that there may be subregions (e.g. states or provinces) even within a richer country that are deprived, which is true across the board for South Asia. For simplicity of analysis, South Asia mean real PCI is also provided. Some interesting findings follow from this table.

Table 6a. Ranking of countries in terms of PCI

	1971-1972		1981-1982		1991-1992		2001-2002	
	PCI	Rank	PCI	Rank	PCI	Rank	PCI	Rank
Nepal	143.05	7	157.0	7	195.8	7	248.13	7
Bangladesh	228.99	5	242.0	5	282.4	6	386.11	6
Bhutan	229.56	4	250.0	4	389.9	4	553.62	3
Maldives	620.70	1	980.5	1	1 450.3	1	1 937.92	1
India	211.75	6	237.1	6	320.5	5	477.06	5
Pakistan	267.47	3	333.7	3	459.1	3	517.20	4
Sri Lanka	348.58	2	474.6	2	637.1	2	876.37	2
Mean	292.87		382.1		533.6		713.77	
SD	145.57		261.2		396.4		530.43	
CV	0.50		0.68		0.74		0.74	

Note: Per capita income taken at constant price (1995).

First, if we cluster the countries above and below the South Asia average, it is clear that the economic conditions of the countries have remained unaltered on both sides over the past quarter century (see table 6b for rank correlation of countries in PCI). Countries such as Bhutan, Maldives and Sri Lanka, where growth rates also happen to be higher, have maintained their above-average positions throughout the period. India's total income is considerably high in the world but the PCI is miserably low even by South Asian comparison. Second, Nepal is the only country with an income ranking that is consistently the worst in South Asia and also over time. Finally, the performance of Pakistan in 2001-2002 is no better than that of India.

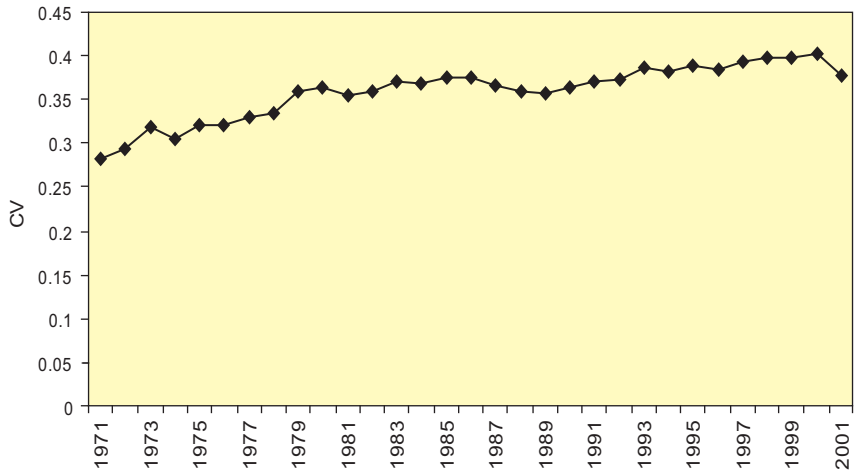
As with IDI, here also the composition of the countries has not significantly changed during the past quarter century. Whereas the average per capita income of South Asia has more than doubled from US$ 293 to US$ 714 over 30 years, the

Table 6b. Year-wise rank correlation of PCI

	1971-1972	1981-1982	1991-1992	2001-2002
1971-1972	1	1.000	0.964	0.929
1981-1982		1	0.964	0.929
1991-1992			1	0.964
2001-2002				1

poorest country (Nepal) has recorded an increase from US$ 143 to US$ 248 and the best performing country (Maldives) from US$ 621 to US$ 1,937. What is more, the combined population of these seven countries was 1.35 billion in 2001, i.e., 22 per cent of world's total population, or roughly about five times the population of the United States of America, or the combined population of Australia, France, Germany, Italy, Russian Federation, Sweden and the United Kingdom of Great Britain and Northern Ireland. On the whole, CV is increasing, and the hypothesis of rising regional disparity has strengthened. It can be seen from figure 1 (representing the time series trend of CV) that there is an exponentially rising tendency of income disparity across the countries.

Figure 1. Trends of CV of PCI (1995 = 100)



Therefore, the evidence supports the fact that the poorer countries in South Asia have remained poor and the more affluent countries have remained so, relatively speaking. Specifically, intra-South Asia disparity in income has been rising steadily, particularly during the post-liberalization period.

IV. RELATIONSHIP BETWEEN INFRASTRUCTURE AND INCOME

Beyond the neo-classical simplification of classifying different factors into only capital and labour, the indispensable role played by social overhead capital, which is used to build up infrastructure, in helping productive activities directly and indirectly was recognized by the pioneers of development economics (Hirschman,

1958 and Myrdal, 1958). An economy's infrastructure network, broadly speaking, is the very socio-economic climate created by the institutions that serve as conduits of commerce. Some of these institutions are public, others private. In either case, their roles can be conversionary, helping to transform resources into outputs, or diversionary, transferring resources to non-producers. Its role is very critical in reducing natural inequality among different regions within a country.

In general, infrastructure is a social concept for some special categories of inputs external to the decision-making units, which contribute to economic development both by increasing productivity and by providing amenities. It requires a long period of time to create these facilities.[5] For example, Hansen (1965), in looking into the role of public investment in economic development, divides public infrastructure into two categories: economic overhead capital (EOC) and social overhead capital (SOC). Mera (1973), examining the economic effects of public infrastructure in Japan, extends Hansen's definition of EOC to include communication systems. The absence of these facilities in a region may result in lower "productive efficiency" of the population (Munnell, 1990). These are the common set of characteristics that make an economic system successful while another a failure, and these characteristics are substantial enough to explain most, if not all, of the differences in prosperity that separate nations today.

The linkage between infrastructure and economic growth is multiple and complex, because not only does it affect production and consumption directly, but it also creates many direct and indirect externalities, and involves large flows of expenditure thereby creating additional employment. Most of the studies on macroeconomic impact were generated in the 1980s as a result of the initial failure to account for the productivity slowdown in the developed nations, particularly the United States (Aschauer, 1989). There are many studies which suggest that infrastructure does contribute towards a hinterland's output, income and employment growth and quality of life (Aschauer, 1990; Munnell, 1990; Gramlich, 1994; and Esfahani and Ramirez, 2003). However, much less focus has been placed on the least developed countries. Generally, unequal distribution of basic infrastructure facilities across different regions within South Asia may be so pervasive as to nullify the operation of the law of diminishing returns in the neo-classical sense (Kaldor, 1972). Ultimately, economies of agglomeration create a "backwash effect"

[5] For example, the construction of a dam or power plant in a disadvantaged region, or an underground railway in a congested city (the underground rail of Delhi), or a new port (the extension of the port of Colombo) needs very long-term perspective planning. Interested readers may consult Gramlich (1994).

against the waning regions. In fact, much before the recent resurgence of the theory of convergence, the pioneering works of Myrdal (1958) and Hirschman (1958) showed why economic activities starting from "historical accident" are concentrated in a particular region. The very recent works of Krugman (1991, 1995) have been largely responsible for the renewed interest in geographical and locational factors as possible determinants of regional inequality in the context of trade.

Although quite a large number of studies have addressed the problem of regional disparity in South Asia during the last few decades, only a few of them have dealt directly with infrastructure and economic development. Barnes and Binswanger (1986), Elhance and Lakshmanan (1988), Binswanger, Khandker and Rosenzweig (1989), Ghosh and De (2000b), Datt and Ravallion (1998), Sahoo and Saxena (1999), Khondker and Chaudhury (2001) and Jayasuria (2001) deal more directly with infrastructure and income. Binswanger and others (1989) show that the major effect of roads in rural India does not work through their impact on private infrastructure but rather through marketing and distribution and also through reduced transportation costs of agricultural goods. Yet electricity and other rural infrastructures have more direct impact on agricultural productivity through private investment in electric pumps (Barnes and Binswanger, 1986). Elhance and Lakshmanan (1988), using both physical and social infrastructures, have shown that reductions in production costs in manufacturing mainly result from infrastructure investment. In a detailed study, Datt and Ravallion (1998) prove that States starting with better infrastructure and human resources, among others, have seen significantly higher long-term rates of poverty reduction. Ghosh and De (2000b), using physical infrastructure facilities across the South Asian countries over the past two decades, have shown that differential endowments in physical infrastructure were responsible for the rising regional disparity in South Asia. Sahoo and Saxena (1999), using the production function approach, have concluded that transport, electricity, gas and water supply, and communication facilities have a significant positive effect on economic growth, and concurrently have found increasing returns to scale.

As is well known, the building up of additional infrastructural facilities in the initial stage may not have an immediate, high or positive impact on income. After the critical minimum level of overhead infrastructure level is crossed, the impact of IDI on PCI exponentially helps to increase income. The economic rationale behind this may be that in the initial stage the building up of an infrastructure facility may act as a downward pressure (or burden) on income thereby implying a sort of sacrifice, and beyond that level various external economies may multiply the contribution of infrastructure to income exponentially. Such a relationship may be captured in the following function:

$$Y = a + bX + cX^2 \quad (1)$$

where Y = PCI, and X = IDI.

The fitted results of the non-linear regression of equation 1 are presented in appendix 2 and the fitted curves with the corresponding scatters are presented in appendix 3. In finding out such a relationship between income and infrastructure, it is quite likely that the said relationship might be influenced by "time". To capture such an explanatory role of time in a recursive pooled regression framework,[6] equation (1) has been estimated as follows:

$$Y = a + bX + cX^2 + eD \quad (2)$$

where Y = PCI, X = IDI, and D = time dummy (= 0 for initial year, and = 1 otherwise). The fitted results of equation 2 are presented in table 7 with the corresponding values of the coefficients and the required statistics for four combinations of

Table 7. Recursive pooled ordinary least squares results

	Independent variables	*Coef-ficients*	*t-stat.*	R^2	*Adj.* R^2	*F-value*	*DW*	*SC*	*N*
1971-1972 and	Intercept	186.659	4.168	0.765	0.677	8.673	1.741	0.044	12
1981-1982	IDI	-2.761	-0.342						
	IDI^2	0.474	1.580						
	Dummy	46.688	1.575						
1971-1972,	Intercept	183.982	2.812	0.609	0.526	7.276	1.089	0.429	18
1981-1982 and	IDI	-5.980	-0.514						
1991-1992	IDI^2	0.692	1.549						
	Dummy	97.613	2.239						
1971-1972,	Intercept	191.446	2.132	0.537	0.467	7.717	0.906	0.564	24
1981-1982,	IDI	-12.532	-0.801						
1991-1992 and	IDI^2	1.061	1.766						
2001-2002	Dummy	157.638	2.611						

[6] In recursive least squares the equation is estimated repeatedly, using ever larger subsets of the sample data. If there are k coefficients to be estimated in the b vector, then the first k observations are used to form the first estimate of b. The next observation is then added to the data set and k+1 observations are used to compute the second estimate of b. This process is repeated until all the T sample points have been used, yielding T-k+1 estimates of the b vector. At each step the last estimate of b can be used to predict the next value of the dependent variable. It may be mentioned here that in all the regression exercises Maldives consistently came out as an outlier judged by the statistics (Cook's distance).

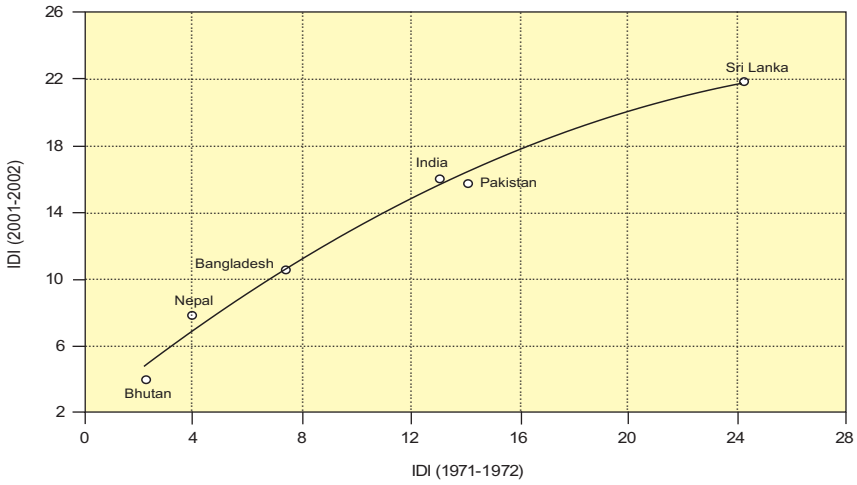
cross-section years. The results are very satisfactory. A brief analysis of the results is as follows.

Given the cross-section nature of the data, the value of adjusted R^2 confirms the fact that the composite index of infrastructure development alone explains a reasonably high proportion of income across the countries. It is interesting to note that in no situation has the coefficient of IDI produced any statistically significant t-value. The coefficient of the square term also does not appear to be very significant. The time dummy, however, has become increasingly significant as we have moved from 1971-1972 to 1981-1982 to 1991-1992 to 2001-2002. The time dummy appears to be highly significant particularly for the last two pairs of years when we consider three and four years of pooled regressions. The role of infrastructure with a high level of significance and expected signs of the coefficients concerned confirms the nature of the relationship between PCI and IDI as discussed above. Therefore, there are reasons to believe that this exercise has recorded a significantly changing scenario in all these countries in the relatively liberalized economic environment. Thus, the Governments of these countries should place emphasis on strengthening the infrastructure sector. One unwarranted implication of this relationship is that if the existing infrastructural differences across these countries persist, the rate of regional divergence is bound to increase in the years to come.

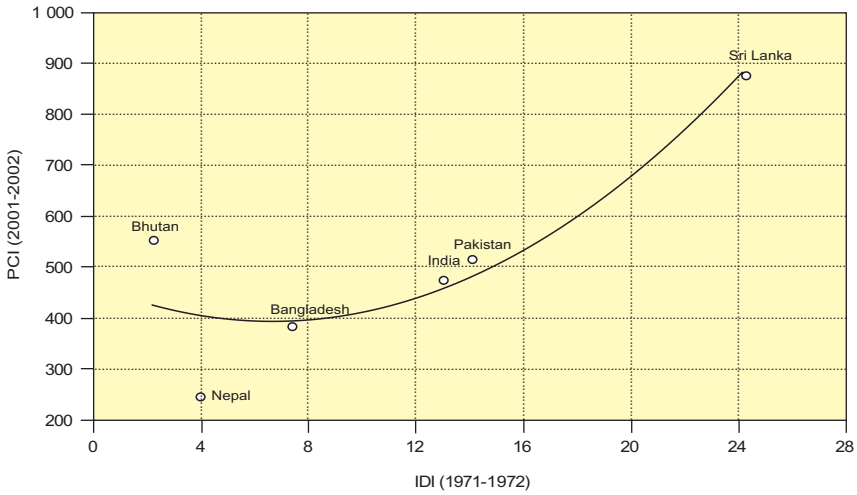
Second, we have seen in earlier sections that best endowed countries in terms of infrastructure in 1971-1972 have more or less remained in the same position relative to their poorer counterparts. As revealed from figure 2a, all the countries lie along the diagonal line where we measure IDI (1971-1972) in the horizontal axis and IDI (2001-2002) in the vertical axis. This general tendency is also largely true in figure 2b except for Bhutan and Nepal, where we measure IDI (1971-1972) and PCI (2001-2002). To be more specific, Nepal's PCI in 2001-2002 has not increased in pari passu with its IDI in 1971-1972, whereas Bhutan's PCI in 2001-2002 has reached a much higher level compared with its performance in infrastructure in 1971-1972. Therefore, a cursory look into figure 2 makes it clear that, perhaps, the infrastructure endowment of the 1970s has sealed the fate of South Asian countries at the beginning of the new century of the new millennium. In other words, unequal opportunities among the countries in terms of the most crucial utility resources on which the locus for further economic development depends have been the order of South Asia's regional development during the past quarter century.

Figure 2. Scatter diagram of IDI and PCI: 1971-1972 and 2001-2002

(a) IDI vs IDI



(b) IDI vs PCI



V. SUMMARY AND IMPLICATIONS

After a long period of state planning and a protected industrial regime since the Second World War, South Asia as a region has failed to foster a balanced regional development. The available evidence shows that inter-South Asia disparity in both basic infrastructure facilities and per capita income has been rising over the years. Rising inequality in major infrastructure facilities across the countries might be responsible for the widening income disparity over time. On the whole, there have been enormous differences in individual performance among the countries in terms of all the basic indicators of development. However, the relative positions of the countries have remained unchanged during the past quarter century in terms of the conventional definition of development.

These findings have very important policy implications. Given that the geopolitical situation has failed to make SAARC an economically prosperous bloc, the question is, given the diverse geopolitical complexities, does SAARC have any role to play in fostering balanced regional development? As we know, the unequal distribution of infrastructure facilities across the countries is largely responsible for differences in the income performance of the countries. To begin, it would be wrong to assume that performance difference is caused by the unequal distribution of public investment alone. There are reasons to believe that the efficiency in the utilization of public investment is not equal in all countries. This difference has serious repercussions on the level and rate of private capital accumulation. Under a liberal economic regime, the free play of market forces may further accentuate the problem of regional imbalance in South Asia. Therefore, a coordinated policy under a liberal economic regime, in sharp contrast to general belief, must play a very critical and decisive role in order to cure regional imbalance in this region.

South Asian countries have different options with respect to infrastructure development. First, they may invest in infrastructure in response to serious bottlenecks taking place owing to an expansion of the private sector. This leads to a passive strategy: transport infrastructure is following private investment. Another option is that Governments use transport infrastructure as an engine for regional development. This implies an active strategy where transport infrastructure is leading and inducing private investment. Although both the approaches have some pros and cons, many countries have used the latter approach to attract private investments vis-à-vis regional development. We have good examples of success stories of the North American Free Trade Agreement (NAFTA), the Southern African Development Community (SADC), the South American Common Market (Mercosur), through which improved transportation and transit facilities have created great value to the regional economies. As many of the regional blocs have been

engaged in formulating a regional infrastructure policy for enhancement of their interregional infrastructure networking, countries in South Asia may also formulate a comprehensive infrastructure policy which will foster trade and transport in the region.

Interestingly, setting in place adequate infrastructure in South Asia is gaining momentum because of (a) the rising stock of intraregional capital, represented by the current account balance (US$ 8.75 billion in 2002) and (b) the growing fixed capital formation (25.25 per cent of GDP in 2002). Nonetheless, most of the countries in South Asia have realized that without having a proper infrastructure in place, foreign direct investment (only US$ 32.96 billion for the period 1991 to 2002) may not flow in large denominations despite the region's labour cost advantage (Kumar, 2002). Focusing on South Asia's infrastructure is also pressing if we look into Eastern South Asia's trade coverage. When Eastern South Asia[7] – either through the Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation (BIMST-EC)[8] or through the South Asian Free Trade Area (SAFTA) or a combination of both – is planning to promote intraregional trade, integration of the whole region is limited by lack of an integrated and improved transport system the lifeblood of the process of globalization in tangible goods. Moreover, given the socio-cultural homogeneity and vast resources of the region, an improved and integrated regional integration process for the whole of South Asia is expected to boost intraregional trade at a time when most of the economies have been growing at a faster rate during the last few years. Even though political conflicts exist among its members, there is growing recognition in South Asia for setting in place regional public goods while leaving aside political disputes. Therefore, the relative paucity of integrated and improved infrastructure networks within South Asia in the past is not difficult to remove, given the outward-looking policies and rising openness. In addition, the liberalization process in South Asia has infused dynamism in the region's economies in several ways. South Asia is becoming more open, outward-oriented and more receptive to foreign investment and trade. At this juncture, working together for the improvement of infrastructural facilities, an essential element to promote intraregional trade, will pave the way for the region's international market access and through this to higher income. Therefore, the aim of cooperation in the infrastructure sector in South Asia should be to utilize the available resources optimally for the maximization of the welfare of the region as whole. Naturally, the rationale for this type of cooperation lies in developing regional

[7] Eastern South Asia in this context includes Bangladesh, Bhutan, India and Nepal.

[8] Prior to 31 July 2004, the official name was the Bangladesh-India-Myanmar-Sri Lanka-Thailand-Bhutan-Nepal Economic Cooperation.

public goods in an integrated manner and exploiting the complementarities for the mutual benefit of all.

The present paper suffers from some limitations. First, our aggregate indexation fails to synchronize between the varying perceptions of what is meant by development by the different communities of varying localities which comprise this diverse set of countries. In general, people who are poor will have very different perceptions of development from those who are affluent. While an aggregate index is useful in evaluating the effectiveness of a particular investment programme in a situation of tremendous resource scarcity and unequal distribution, it may still beg some fundamental groundwork with a smaller geographical area as a unit of analysis for defining a meaningful comprehensive indicator for the extreme diversities manifested in South Asia.

Second, it fails to incorporate institutional factors representing political will, work ethics and social networking by which to judge the quality of life, rule of law, motivation for development and economic reasoning on the part of both Governments and the people.

Third, efforts should also be made for collecting representative environmental factors, which contain information regarding intergenerational equity as well as short-term versus long-term rationality.

Finally, a sophisticated dynamic analysis may be tried for verifying the strong findings of this paper derived from artless statistical techniques.

Appendix 1

Mean, SD and CV of infrastructure variables

Variables	Mean				Standard deviation (SD)			
	1971-1972	*1981-1982*	*1991-1992*	*2001-2002*	*1971-1972*	*1981-1982*	*1991-1992*	*2001-2002*
IL	20.567	27.859	34.422	37.440	20.458	21.258	22.134	23.151
PCE	36.097	59.025	116.891	169.097	37.907	58.251	114.007	145.573
PC	50.971	50.507	52.541	57.453	44.748	43.794	45.635	50.714
TL	2.277	3.547	9.259	35.331	1.455	2.704	10.582	28.987
TF	62.374	93.323	122.092	344.073	73.137	106.339	119.911	405.108
FC	273.211	461.676	745.637	1 011.993	456.291	564.626	660.672	942.172
LR	29.335	35.399	42.650	48.904	22.125	21.738	20.126	19.349
IMR	0.007	0.008	0.014	0.022	0.005	0.007	0.012	0.015
BC	17.641	34.174	32.324	40.178	18.054	20.388	16.579	14.683
AM	0.299	0.338	0.422	0.511	0.619	0.468	0.462	0.558
TC	8.083	9.070	10.519	10.794	4.380	3.997	4.495	2.889

Variables	Coefficient of variation (CV)			
	1971-1972	*1981-1982*	*1991-1992*	*2001-2002*
IL	0.995	0.763	0.643	0.618
PCE	1.050	0.987	0.975	0.861
PC	0.878	0.867	0.869	0.883
TL	0.639	0.762	1.143	0.820
TF	1.173	1.139	0.982	1.177
FC	1.670	1.223	0.886	0.931
LR	0.754	0.614	0.472	0.396
IMR	0.743	0.799	0.877	0.712
BC	1.023	0.597	0.513	0.365
AM	2.070	1.385	1.096	1.091
TC	0.542	0.441	0.427	0.268

Appendix 2

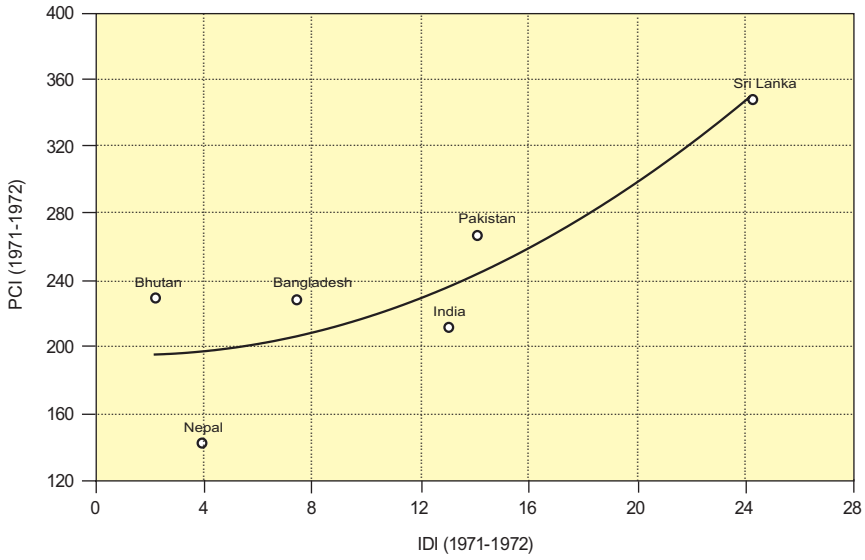
Ordinary least squares regression results

	Independent variables	*Coefficients*	*t-stat.*	R^2	*Adj.* R^2	*F-value*	*DW*
1971-1972	Intercept	195.758	3.952	0.865	0.581	4.462	2.147
	IDI	-0.744	-0.080				
	IDI^2	0.294	0.848				
1981-1982	Intercept	226.029	3.249	0.854	0.757	8.783	2.439
	IDI	-5.659	-0.446				
	IDI^2	0.708	1.494				
1991-1992	Intercept	458.388	4.574	0.882	0.804	11.265	2.536
	IDI	-47.398	-2.358				
	IDI^2	2.740	3.226				
2001-2002	Intercept	772.115	4.881	0.905	0.842	14.296	1.737
	IDI	-83.896	-3.047				
	IDI^2	4.101	3.904				

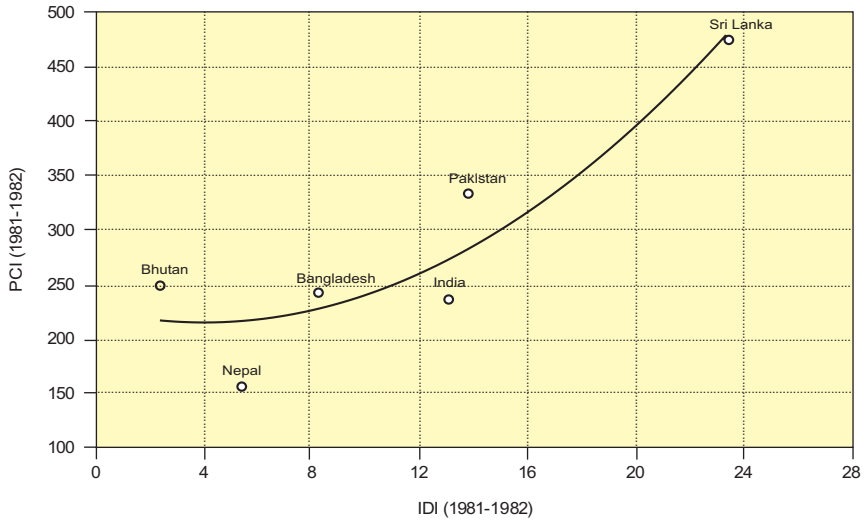
Appendix 3

Scatter diagram of IDI and PCI

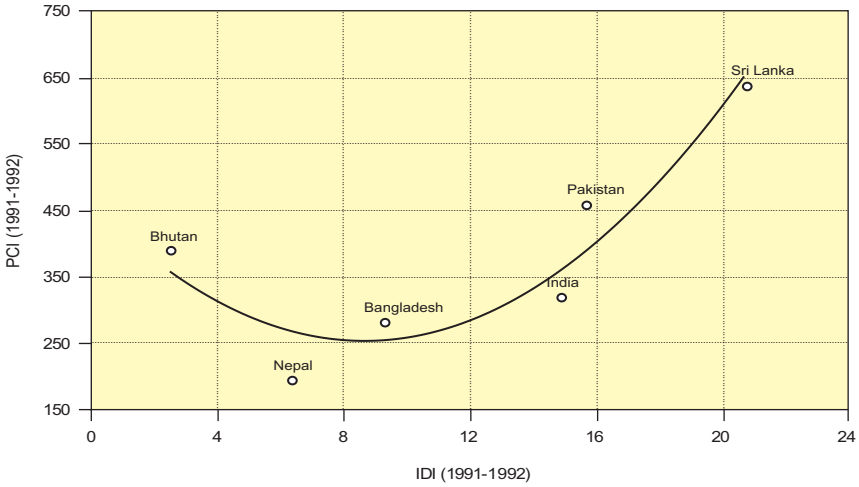
(a) 1971-1972



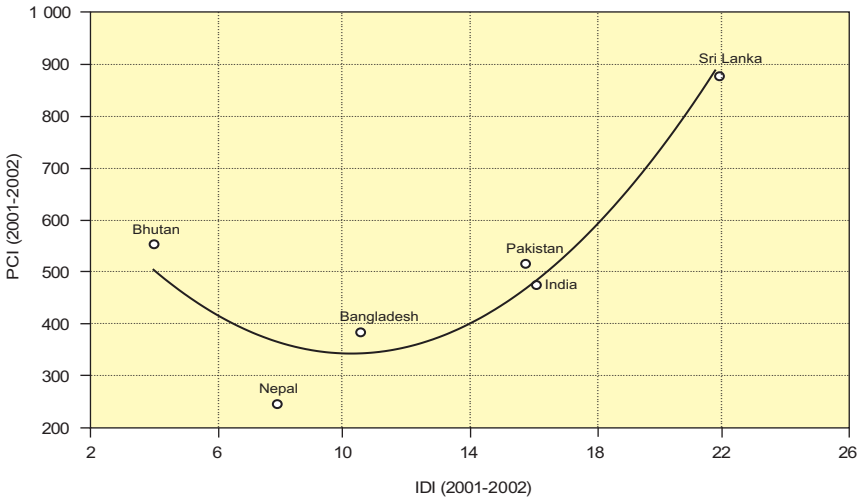
(b) 1981-1982



(c) 1991-1992



(d) 2001-2002



REFERENCES

Aschauer, D.A., 1989. "Is public expenditure productive?", *Journal of Monetary Economics,* vol. 23, No.1, pp. 177-200.

Aschauer, D.A., 1990. "Why is infrastructure important?", in Munnell.

Barnes, D.F. and H.P. Binswanger, 1986. "Impact of rural electrification and infrastructure on agricultural changes: 1966-1980", *Economic and Political Weekly,* vol. 21.

Barro, R.J. and X. Sala-i-Martin, 1995. *Economic Growth* (Boston, McGraw Hill).

Barro, R.J., 1991. "Economic growth in a cross section of countries", *Quarterly Journal of Economics,* vol. 106(2), pp. 407-443.

Basu, K., 2001. "India and the global economy: role of culture, norms and beliefs", *Economic and Political Weekly,* vol. 36, No. 40, pp. 3837-3842.

Binswanger, H.P., S.R. Khandker and M.R. Rosenzweig, 1989. "How infrastructure and financial institutions affect agricultural output and investment in India", Policy Planning and Research Working Paper No. 163 (Washington, World Bank).

Dash, K.C., 1996. "The political economy of regional cooperation in South Asia", *Pacific Affairs*, vol. 69, No. 2, pp. 185-209.

Datt, G. and M. Ravallion, 1998. "Why have some Indian states done better than others at reducing rural poverty", *Economica,* vol. 65, No. 1.

De, P. and B. Ghosh, 2003. "How do infrastructure facilities affect regional income? An investigation with South Asian countries", RIS Discussion Paper No. 66, Research and Information System for the Non-aligned and Other Developing Countries, New Delhi, available online at http://www.ris.org.in.

Elhance, A.P. and T.R. Lakshmanan, 1988. "Infrastructure-production system dynamics in national and regional systems: an econometric study of the Indian economy", *Regional Science and Urban Economics,* vol. 18, No. 4, pp. 511-531.

ESCAP, 2002. *Implications of Globalization on Industrial Diversification Process and Improved Competitiveness of Manufacturing in ESCAP Countries,* ST/ESCAP/2197 (United Nations publication, Sales No. E.00.II.F.52).

Esfahani, H.S. and M.T. Ramírez, 2003. "Institutions, infrastructure, and economic growth", *Journal of Development Economics,* vol. 70, No. 2, pp. 443-477.

Fruchter, B., 1967. *Introduction to Factor Analysis* (New Delhi, Affiliated East West Press).

Ghosh, B. and P. De, 2000a. "Linkage between infrastructure and income among Indian states: a tale of rising disparity since independence", *Indian Journal of Applied Economics*, vol. 8, No. 4.

_____, 2000b. "Infrastructure, economic growth and trade in SAARC", *BIISS Journal*, vol. 21, No. 2.

_____, 2004. "How do different categories of infrastructure affect development? Evidence from Indian states", *Economic and Political Weekly,* vol. 39, No. 42, pp. 4645-4657.

_____, 2005a. "Investigating the linkage between infrastructure and regional development in India: era of planning to globalization", *Journal of Asian Economies,* vol. 15, No. 6, pp.1023-1050.

_____, 2005b. *India Infrastructure Database 2005* (New Delhi, Bookwell).

Ghosh, B., S. Marjit and C. Neogi, 1998. "Economic growth and regional divergence in India: 1960 to 1995", *Economic and Political Weekly,* vol. 33, No. 26, pp. 1623-1630.

Gramlich, E.M., 1994. "Infrastructure investment: a review essay", *Journal of Economic Literature,* vol. 32, No. 3, pp. 1176-1196.

Hansen, N.M., 1965. "Unbalanced growth and regional development," *Western Economic Journal,* vol. 4, pp. 3-14.

Hirschman, A.O., 1958. *The Strategy of Economic Development* (New Haven, Yale University Press).

Jayasuria, L., 2001. "Rethinking social development: towards an equitable future for Sri Lanka", *South Asia Economic Journal,* vol. 2, No. 1, pp. 105-121.

Kaldor, N., 1972. "The irrelevance of equilibrium economics", *The Economic Journal,* vol. 82, No. 328, pp. 1237-1255.

Kelegama, S., 1998. "Economic development in Sri Lanka during the 50 years of independence: what went wrong?" Occasional Paper 53, Research and Information System for the Non-aligned and Other Developing Countries, New Delhi.

Khondker, B.H. and A.H. Chaudhury, 2001. "Growth with equity: a Bangladesh perspective", *South Asia Economic Journal,* vol. 2, No. 1, pp. 67-86.

Krugman, P., 1991. *Geography and Trade* (Leuven, Leuven University Press).

_____, 1995. *Development, Geography, and Economic Theory* (Cambridge, MIT Press).

Kumar, N., 2002. *Globalization and Quality of Foreign Direct Investment: A Quantitative Analysis of the Role of Host Country Characteristics and WTO Regime* (New Delhi, Oxford University Press).

Marjit, S. and S. Mitra, 1996. "Convergence in regional growth rates: Indian research agenda", *Economic and Political Weekly,* vol. 31, No. 33.

Mera, K., 1973. "Regional production functions and social overhead capital: an analysis of the Japanese case", *Regional and Urban Economics,* vol. 3, No. 2, pp. 157-185.

Munnell, A.H., 1990. "How does public infrastructure affect regional economic performance?", Is there a shortfall in public capital investment?, Conference Proceedings No. 34, Federal Reserve Bank of Boston.

Myrdal, G., 1958. *Economic Theory and Underdeveloped Regions* (Bombay, Vora and Co.).

Paranjpe, S., 2002. "Development of order in South Asia: towards a South Asian Association for Regional Cooperation Parliament", *Contemporary South Asia,* vol. 11, No. 3, pp. 345-356.

Research and Information System for the Non-aligned and Other Developing Countries (RIS), 2004. *South Asia Development and Cooperation Report 2004* (New Delhi, RIS).

Sahoo, S. and K.K. Saxena, 1999. "Infrastructure and economic development: some empirical evidence", *The Indian Economic Journal,* vol. 47, No. 2, pp. 54-66.

Srinivasan, T.N., 2002. *Trade, Finance and Investment in South Asia* (New Delhi, Social Science Press).

IS LIBERALIZATION OF TRADE GOOD FOR THE ENVIRONMENT? EVIDENCE FROM INDIA

*Kakali Mukhopadhyay** and *Debesh Chakraborty***

A policy of trade liberalization is often suggested as a means of stimulating economic growth in developing countries. Given the potential benefits of trade liberalization policies, it is important to examine whether such policies are in fact in conflict with the environment as they accelerate economic growth.

Two conflicting hypotheses emerge from the trade-environment debate. The first competing hypothesis states that increasing trade may encourage developing countries with weaker environmental protection to specialize in industries that create more pollution. This is referred to as the pollution haven hypothesis (PHH); the second hypothesis, known as the factor endowment hypothesis (FEH), predicts that trade liberalization will result in trade patterns consistent with the Heckscher-Ohlin-Vanek (HOV) theory of comparative advantage based on factor endowment differentials. The manifestation of PHH is in direct conflict with FEH.

The present paper aims at testing both hypotheses, PHH and FEH, for India's trade with the rest of the world and the European Union (15) during the 1990s when radical economic reforms were introduced. The input-output method is used and suitably modified to test both the hypotheses considering three pollutants, carbon dioxide, sulphur dioxide and nitrogen dioxide (CO_2, SO_2 and NO_x). It is clear from the results that import-related pollution is much greater than the export-related pollution for India. The findings of the present work challenge the pollution haven hypothesis, arguing that liberalization of trade policy in India has not been associated with pollution-intensive industrial development. On the other hand, the study supports the factor

* Visiting fellow, School of Environment, Resources and Development (SERD), Asian Institute of Technology, Pathumthani, Thailand.

** Former Professor, Department of Economics, Jadavpur University, Calcutta, India.

endowment hypothesis thus confirming that the export-oriented labour requirements are much more in weight than its import counterpart. Hence India gains in terms of emissions from trade in both cases. The paper also suggests several policies.

A policy of trade liberalization is often suggested as a means of stimulating economic growth in developing countries. Trade liberalization consists of policies aimed at opening up the economy to foreign investment and lowering trade barriers in the form of tariff reduction. However, while trade may stimulate growth it may simultaneously lead to more pollution either as a result of relocation of polluting industries from countries with strict environmental policy or owing to increased production in dirty industries. Given the potential benefits of trade liberalization policies, it is important to examine whether such policies are in fact in conflict with the environment as they expand production and accelerate economic growth.

Thus what happens to the environment when international trade is liberalized is a matter of debate. It is commonly assumed by economists and environmentalists alike that greater economic openness will lead to increased pollution in developing countries, as free trade will increase environmental degradation in developing countries. Among environmentalists, one common concern is that liberalized trade regimes and market-driven exchange rates, by increasing the incentive for export, will lead to a greater exploitation of natural resources. Secondly, free trade will increase industrial pollution in developing countries, through the displacement of dirty industries from developed countries with stricter environmental regulations, and through competitive pressure on developing countries to reduce further their environmental standards.

Two conflicting hypotheses emerge from the debate. The first competing hypothesis, known as the pollution haven hypothesis (PHH), argues that changes in environmental legislation can distort existing patterns of comparative advantage. In the developed world the costs of complying with environmental regulations appear to be increasing steadily. Since the stringency of environmental regulations increases with income and economic development (Dasgupta and others, 1995) the PHH assumes that developing countries possess a comparative advantage in pollution-intensive production. Thus “pollution havens” arise. The second hypothesis, the factor endowment hypothesis (FEH), predicts that trade liberalization will result in trade patterns consistent with the Heckscher-Ohlin-Vanek (HOV) theory of comparative advantage based on factor endowment differentials. Rich countries are typically well endowed with physical capital. Since capital-intensive goods are

often also pollution intensive,[1] factor endowment theories of international trade predict that rich countries specialize in pollution-intensive goods and export them. Thus, manifestation of the PHH is in direct conflict with the FEH. Both hypotheses are tested simultaneously for India.

There has been a tremendous change in the trade policy of the Indian economy since July 1991 which has been motivated by a full recognition of the important role that trade can play in promoting sustained economic growth in the context of sustainable development.

The growth rate has been much higher for both exports and imports following liberalization. India's share in world exports continued to increase from 0.52 per cent in 1990 to 0.67 per cent in 2000. This increase was higher than in the previous decade because of the gradual lifting of the quantitative restrictions and reduction in tariffs. The effect of liberalization is highly visible in external trade indices: post-liberalization growth has been much higher in both exports and imports and external trade now accounts for 20 per cent of India's GDP, significantly higher than the level of 13 per cent in 1990-1991. The annual average growth rate of exports increased from 7.6 per cent during 1980/1981-1991/1992 to 10 per cent during 1992/1993-1999/2000 and that of imports increased from 8.5 to 13.4 per cent for the same period. On the other hand, the share of imported manufacturing goods rose by 35.8 per cent in 1980-1981 to 48 per cent in the 1990s and rose sharply to 78 per cent in 1999-2000.

The European Union and the United States of America are by far the most important markets for Indian exports, absorbing each about 20 to 25 per cent of total exports. Asian countries excluding Japan also account for about 20 to

[1] An attempt has been made by Mani and Wheeler (1999) to link pollution intensity with capital and labour intensity of goods on the basis of the work of Hettige and others (1995). Emission intensity (emission per unit of output) has been calculated and the sectors that rank high on actual emission intensity. To determine high-ranking sectors by this criterion the authors have used detailed emissions intensities by medium for manufacturing in the United States by three digit standard industrial classification (SIC level) computed by the World Bank in collaboration with the United States Environmental Protection Agency and the United States census bureau (Hettige and others, 1995). They have computed average sectoral rankings for air pollutants. They have found that the following sectors which rank high are pollution-intensive industries: iron and steel, non-ferrous metal, non-metallic mineral products, miscellaneous petroleum, coal products, pulp and paper, petroleum refineries, industrial chemicals and other chemicals, wood products and glass products. In addition, they have estimated the capital intensity of these dirty industries and found that dirty industries are relatively intensive in capital because capital intensity is substantially higher in the dirty sectors with an average ration around 2:1 for capital output and investment output. Following the criteria they have identified that iron and steel, metal products and chemical products are highly capital intensive as well as pollution intensive. They have also found that the clean sectors are about 40 per cent more labour intensive on average.

25 per cent of exports. Japan is still a small market, with about 5 per cent of total Indian exports. The EU is currently one of India's largest trading partners, accounting for nearly a quarter of the total two-way trade; the largest suppliers are the United Kingdom of Great Britain and Northern Ireland, Germany and Belgium. In terms of imports, Asian countries (excluding Japan) and the EU supply almost 50 per cent of India's total imports. Middle East countries are the major supplier of India's oil imports and the region accounts for 16 per cent of total imports.

As mentioned earlier liberalization in India has led to an impressive growth in two-way trade. Indo-EU trade increased, specifically from 12.6 billion euros in 1993 to over 25.7 billion euros in 2000. With liberalization Indian exports have diversified and expanded, and there is a significant change in the composition and range of Indian exports that now enter the European market.

Indian exports are mainly dominated by textiles and clothing, (32.15 per cent), agricultural and marine products (8.57 per cent), gems and jewellery (12.24 per cent), and leather and leather goods (11.03 per cent), which together account for more than 60 per cent of total exports. Of late, exports of engineering and electronics (9.20 per cent) and chemical products (7.93 per cent), have registered a significant growth, although their overall size still remained small in 2000. Indian imports from the EU were dominated by gems and jewellery (37.90 per cent), engineering goods (29.73 per cent), chemical and allied products (8.55 per cent), metal and metal products (5.84 per cent) and transport equipment (3.74 per cent) in 2000.

What has been the impact of such a changed performance of trade on the environment in India? The present research concentrates on this question and aims at contributing to the environmental trade debate by testing the two conflicting hypotheses (PHH and FEH) for India's trade with rest of the world and exclusively with the EU since the 1990s.

I. SURVEY OF SELECTED LITERATURE

With revitalization of trade liberalization policies, the literature on the effects of international trade on the environment has been increasing. This section will briefly review some of this literature. Grossman and Krueger, 1992; Lucas and others, 1992; Birdsall and Wheeler, 1993; Wheeler and Martin, 1992; Khrushch 1996; Schaeffer and de Sá, 1996; Nordström and Vaughan, 1999; Gallagher and Ackerman, 2000; Antweiler and others, 2001; and Eskeland and Harrison, 2003 have made significant contributions on this issue. The methodologies employed to test these relationships are widely varied, as are the results (Gallagher and Ackerman, 2000).

The role of international trade in determining the environmental damage has been addressed by specialists using input-output techniques (Wright, 1974; Fieleke, 1975; Wyckoff and Roop, 1994; Antweiler, 1996; Lange, 1998; Proops and others, 1999; Lenzen, 2001; Lenzen and Munksgaard, 2002; Machado and others, 2001; Munksgaard and Pedersen 2001, Hann, 2002; Hayami and Nakamura, 2002; Lange and Hassan 2002; and Wadeskog, 2002).

The cross-country studies by Gerilla and others (2002) for China and Japan, Przybylinski (2002) for Poland and Germany, Hayami and Nakamura (2002) for Japan and Canada and Ahmad (2002) for selected Organization for Economic Cooperation and Development (OECD) countries are worth mentioning in this respect.

Regarding environmental regulation and foreign direct investment, the studies by Xing and Kolstad (1997) and Low and Yates (1992) deserve mention. They submitted that the dirty industries relocate to countries with lax environmental regulation. Using industry-level trade data from the United States, Levinson and Taylor (2001) showed that imports of dirty goods to that country increased over the past three decades. Smarzynska and Wei (2001) used firm-level data on investment projects in 24 transition economies and found some support for the PHH. Cole and others (2001) examine whether the North-South trade patterns are consistent with either PHH or FEH and conclude that both the hypotheses are at work and may, owing to their temporary nature, often cancel each other out. Recently, similar hypotheses have also been analysed theoretically and their validity examined using data on measured SO_2 concentrations from over 100 cities worldwide during the period 1971-1986 by Copeland and Taylor (2003). Results suggest that free trade is good for the environment.

Unfortunately very little work has been done in India. Recently, preliminary attempts have been made by Mukhopadhyay (2004), Mukhopadhyay and Chakraborty (2004), Dietzenbacher and Mukhopadhyay (2004) and Jha and Rabindran (2004). The present work aims to add to this work and attempts to contribute to the environment and trade debate by examining the impacts of international trade with the rest of the world and also with the EU on emissions of CO_2, SO_2 and NO_x in the Indian economy during the 1990s using input-output techniques.

II. METHODOLOGY

The methodology of the present research is based on Leontief's input-output framework (1951). The structure of the input-output model can be framed as:

$$X = A_d X + Y \quad (1)$$

from which it follows that

$$\mathbf{X = (I - A_d)^{-1} Y} \quad (1a)$$

Here X defines the domestic output and A_d the matrix of the domestic input-output coefficient and $[I - A_d]^{-1}$ = the Leontief domestic inverse matrix.

Now the emission model can be elaborated through equation (1a).

I) Emission model

The total amount of an emission from fossil fuel combustion can be calculated as a function of the output of industries. To estimate the carbon emission the model will be:

$$\mathbf{F_{pd} = CL1X_d = CL1\ (I - A_d)^{-1} Y} \quad (2)$$

Here F_p is a scalar giving the total quantity of an emission from fossil fuels combustion in India. Emissions under this study are CO_2, SO_2 and NO_x, which are defined as pollution type p. C is a vector of dimension m (1xm), of coefficients for the industrial emission intensity per unit of fossil fuel burnt. L1 is a matrix (mxn) of the industrial consumption in energy units of m types of fuel per unit of total output of n industries. In equation (2), CL1 carries only the direct requirement of pollution intensities from industries and CL1 $(I - A)^{-1}$ gives the direct as well as indirect requirement of pollution intensity from industries.

Let CL1 = S and $(I - A_d)^{-1} = R_d$. Then equation (2) will be:

$$\mathbf{F_{pd} = SR_d Y} \quad (2a)$$

To establish a link between trade and environment we need to develop the trade model by extending equation (2a).

Trade model

By separating the final demand vector as domestic (Yd) and net exports we get:

$$Y = Yd + Yx - Ym \quad (3)$$

where Yx(nx1) is defined as the vector content of export only and Ym(nx1) as the vector content of imports. Here we assume identical technology (Heckscher-Ohlin) to find out the pollution content of imports for the rest of the world. Thus

the pollution content of exports and imports can be defined as in equations (4) and (5).

$$\mathbf{F_{pd}\ exports} = SR_d\ Yx \qquad (4)$$

$$\mathbf{F_{pd}\ imports} = SR_d\ Ym \qquad (5)$$

Equations (4) and (5) are scalar giving different pollution content of exports and imports. The sectoral contribution of the pollution (CO_2, SO_2 and NO_x) content of exports and imports is estimated by putting diagonal matrices of export and import vectors which will become *Yx*(nxn) and *Ym*(nxn). Then equations (4) and (5) will be:

$$\boldsymbol{F_{pd}\ exports} = SR_d\ Y_x \qquad (4^*)$$

$$\boldsymbol{F_{pd}\ imports} = SR_d\ Y_m \qquad (5^*)$$

Now, a measure of **pollution terms of trade (PTOT)** for India with the rest of the world will be derived by equations (4) and (5) as:

$$\mathbf{PTOT_d = F_{pd}\ exports\ /\ F_{pd}\ imports = [SR_d\ Yx]\ /\ [SR_d\ Ym]} \qquad (6)$$

Similarly the EU's export and import contribution with India can be calibrated separately as in equations (7) and (8).

$$\boldsymbol{F_{pd}\ exports_{eu}} = SR_d\ Yx_{eu} \qquad (7)$$

$$\boldsymbol{F_{pd}\ imports_{eu}} = SR_d\ Ym_{eu} \qquad (8)$$

The sectoral contribution of pollution traded was derived in the same manner as in equations (4*) and (5*).

$$\boldsymbol{F_{pd}\ exports_{eu}} = SR_d\ Yx_{eu} \qquad (7^*)$$

$$\boldsymbol{F_{pd}\ imports_{eu}} = SR_d\ Ym_{eu} \qquad (8^*)$$

Now, a measure of **pollution terms of trade (PTOT)** will be derived as:

$$\mathbf{PTOT_{deu} = F_{pd}\ exports_{eu}\ /\ F_{pd}\ imports_{eu} = [SR_d\ Yx_{eu}]\ /\ [SR_d\ Ym_{eu}]} \qquad (9)$$

This measure (equations 6 and 9) of pollution terms of trade indicates the ratio of the pollution content of 1 unit of exports relative to the pollution content of 1 unit of imports. A country gains environmentally from trade in relative terms whenever its imported goods have a higher pollution content than its exported goods. When the pollution terms of trade are greater (smaller) than 100, that particular country's exports contain more (less) pollution than it is receiving through

imports. The expressions of equations (6) and (9) will provide the compositional effect.

The PHH explanation will be stronger if we discuss the FEH in this context, which offers another view on the impact of international trade on the allocation of environmental burdens across countries. This hypothesis maintains that pollution intensities of production are highly correlated with capital intensities (see Copeland and Taylor, 2003). In that case, capital-abundant countries, i.e. typically rich, developed countries, have a comparative advantage in pollution-intensive goods, which they will export according to the Heckscher-Ohlin theory.

The expansion of global trade receives so much attention largely because it has important influences on the factor markets of the countries involved. This also explains why, after decades, the HOV model is still a mainstay of international economics. The HOV model, which focuses on the relationship between production factors and trade, predicts that a country will export services of the factors that are relatively abundant in the country and will import services of the factors that are relatively scarce in the country. For testing the factor endowment hypothesis we have modified our previous equations by introducing labour and capital coefficients.

Recollecting **equation (2a) and** multiplying by the labour and capital coefficients we get:

$$\mathbf{LX_d = L\,(I - A_d)^{-1}\,Y} \qquad (10)$$

$$(I - A_d)^{-1} = R$$

$$\mathbf{or\ LX_d = LR_d\,Y}$$

$$\mathbf{KX_d = K\,(I - A_d)^{-1}\,Y} \qquad (11)$$

$$\mathbf{KX_d = KR_d\,Y}$$

where L and K are treated as labour and capital coefficients of all sectors in the study and LR_d and KR_d provide the sector-wise labour and capital requirements.

To estimate the labour requirements and capital requirements in exports and imports further, equation (10) will be multiplied by the export and import vectors that are presented below:

$$\mathbf{L_{exp} = LR_d}\,Yx \qquad (12)$$

$$\mathbf{K_{exp} = KR_d}\,Yx \qquad (13)$$

The labour and capital requirements of imports can also be classified similarly in equations (14) and (15).

$$\mathbf{L_{exp}} = \mathbf{LR_d}\, Ym \qquad (14)$$

$$\mathbf{K_{exp}} = \mathbf{KR_d}\, Ym \qquad (15)$$

Equations 12 to 15 classified here derive the total labour and capital requirements in the case of export and import. Similarly we can compute the requirements of labour and capital exclusively for trading with the EU.

$$\mathbf{L^{eu}_{exp}} = \mathbf{LR_d}\, Yx_{eu} \qquad (16)$$

$$\mathbf{K^{eu}_{exp}} = \mathbf{KR_d}\, Yx_{eu} \qquad (17)$$

$$\mathbf{L^{eu}_{imp}} = \mathbf{LR_d}\, Ym_{eu} \qquad (18)$$

$$\mathbf{K^{eu}_{imp}} = \mathbf{KR_d}\, Ym_{eu} \qquad (19)$$

As we know, FEH states that a labour-rich country will export labour-intensive goods that are environment friendly and import capital-intensive goods. This can be indicated by the ratio of labour requirements of import and export that will be less than 1. Similarly the capital abundant country will export capital-intensive goods and import labour-intensive goods and the ratio of capital import and export will be greater than 1.

III. DATA

To implement the model and to calculate the pollution terms of trade we require input-output data, energy flow data, emission data, trade related data and labour and capital coefficients for the years 1991-1992 and 1996-1997 respectively. In this present study we consider EU15 as EU.

This study uses two input-output tables of the Indian economy for the years 1991-1992, 1996-1997 prepared by the Planning Commission of the Government of India (1995, 2000). The input-output tables are commodity by commodity tables consisting of 60 x 60 sectors and have been aggregated to 43 sectors on the basis of the nature of commodities and trade and energy intensiveness. Here we have considered three energy sectors, coal, crude oil and natural gas and electricity, separately.

The Centre for Monitoring Indian Economy (CMIE) provides the energy flow data for the two years, 1991-1992 and 1996-1997, respectively at physical unit, i.e. million tons of oil equivalents (mtoe). The CO_2, SO_2 and NO_x emissions

from fossil fuel combustion have been estimated by the Intergovernmental Panel on Climate Change (IPCC) guideline.

India's trade figures with the EU for commodities for the years 1991-1992 and 1996-1997 are available in *Foreign Trade by Commodities* (OECD, 1998). We have converted the trade data from millions of United States dollars to millions of rupees exchange rate.

To estimate the sectoral labour and capital coefficients we have used the labour data, i.e. persons engaged in each sector and capital stock data, from the *Annual Survey of Industries* (ASI, 1991-1992 and 1996-1997), *Agricultural Statistics of India, Forest Statistics of India and National Accounts Statistics* published by the Central Statistical Organization (2002).

IV. RESULTS AND DISCUSSION

In this section we shall present the results of the application of the models developed in section II to test the two hypotheses for India and also the analysis of the results.

Evidence on the pollution haven hypothesis from India's trade with the rest of the world

To test the pollution haven hypothesis we have used an index known as pollution terms of trade (equation 6). We have computed the pollution terms of trade of India with rest of the world for CO_2, SO_2 and NO_x emissions in 1991-1992 and 1996-1997. Results are presented in table 1.

Table 1. Pollution terms of trade of India with the rest of the world for CO_2, SO_2 and NO_x emissions in 1991-1992 and 1996-1997

Emission	CO_2		SO_2		NO_x	
	1991-1992	1996-1997	1991-1992	1996-1997	1991-1992	1996-1997
Pollution embodied in exports	107.77	199.02	5.54	9.86	3.96	7.19
Pollution embodied in imports	215.55	378.75	12.07	21.71	8.36	13.97
Pollution terms of trade	0.4976	0.5264	0.42	0.45	0.45	0.51
Pollution terms of trade*100	49.76	52.64	42.95	45.41	45.72	51.51

The values of the indices of the pollution terms of trade of the three pollutants show 49.76 per cent for CO_2, 42.95 per cent for SO_2 and 45.72 per cent for NO_x in 1991-1992 and rose to 52.64, 45.41 and 51.51 per cent for CO_2, SO_2 and NO_x respectively in 1996-1997. The values have increased marginally by 3 to 5 per cent within the span of five years in India during the reform period. However, we observed that the value of the PTOT index is below 100. This indicates that India exports goods that are more environment friendly than the goods that it imports. Thus the PHH is not supported by the results, and suggests that differences in pollution regulation are a key determinant of production costs and hence the location of industries. **The country with a weaker policy exports the dirty goods and increases its dirty goods output when trade is liberalized**.

The result also reveals an interesting feature. Even a short span of trade reform in India leads to a rise in the value of PTOT for the three pollutants which, if continued, might move India towards being a pollution haven if there is no policy intervention by the Government. However, at the moment the PHH is not supported by the result**.**

The reasons behind the low value of PTOT (less than 100) will be clear if we analyse the composition of exports and imports of India as well as emissions of three types of pollutants for the selected sectors for the years 1991-1992 and 1996-1997.

A look at the composition of exports and imports of India (table 2) indicates that export products such as other crops, fishing, food and beverages and leather products had a share of 15.52 per cent in 1991-1992 and 14.37 per cent in 1996-1997. Textile products had a share of 17.47 per cent in 1991-1992 and 18.99 per cent in 1996-1997. A significant change in the composition of exports has been observed in the manufacturing sector. The share of the manufacturing products (non-electrical machinery, electrical machinery, electronic equipment, rail and other transport equipment and other manufacturing) increased from 16.09 per cent in 1991-1992 to 21.70 per cent in 1996-1997. On the other hand, crude petroleum and natural gas and petroleum products (15 per cent in 1991-1992 and 14 per cent in 1996-1997 respectively), non-metallic products (9.67 in 1991-1992 and 13.82 per cent in 1996-1997), iron and steel (3 per cent in both years) and machinery goods (over 30 per cent in both years) are major items in the import basket.

Several changes in the export-import policies have been introduced: (a) the maximum tariff was lowered from 250 per cent in 1991 to 40 per cent in 1996-1997; (b) the Liberalized Exchange Rate Management System (LERMS) was introduced in March 1992 and under this system virtually all capital goods and raw

Table 2. Share of exports and emissions from exported goods (mt of CO_2, SO_2 and NO_x) in India

Major sectors	Exports		Pollution content of exports					
	1991-1992	1996-1997	1991-1992			1996-1997		
	Share (percentage)		CO_2	SO_2	NO_x	CO_2	SO_2	NO_x
Other crops	4.42	4.14	1.96	0.10	0.07	3.39	0.17	0.12
Fishing	2.19	1.76	0.93	0.05	0.03	3.80	0.19	0.14
Other food and beverages	2.87	1.85	3.03	0.16	0.11	4.22	0.21	0.15
Cotton textiles	4.80	4.82	8.00	0.41	0.30	15.35	0.76	0.55
Other textiles	12.87	14.17	15.79	0.82	0.58	35.86	1.78	1.30
Leather and leather products	6.04	6.62	4.77	0.25	0.18	9.29	0.46	0.34
Other chemicals	5.10	6.22	7.32	0.38	0.27	18.18	0.90	0.66
Non-electrical machinery	2.19	2.25	1.57	0.08	0.06	1.67	0.08	0.06
Electrical machinery	1.28	1.08	0.032	0.002	0.001	0.05	0.002	0.002
Electronic equipment	0.85	3.25	1.72	0.09	0.06	3.88	0.19	0.14
Rail and other transport equipment	1.78	1.54	12.20	0.63	0.45	23.88	1.18	0.86
Other manufacturing	9.99	13.58	12.17	0.629	0.449	17.31	0.858	0.626

materials are made freely importable subject to tariff protection as long as foreign exchange to pay for imports is obtained through the market; (c) in addition, the duty on capital goods was reduced from 25 to 20 per cent; (d) to promote exports a number of subsidies such as cash compensatory support for exports have been abolished; (e) the export processing zones (EPZ scheme) and the 100 per cent export-oriented unit (EOU) scheme were liberalized to include agriculture, horticulture, poultry and animal husbandry.

Even these measures could not create a climate which could reap the full benefits of liberalization in India. The climate for foreign direct investment has not improved much. The bureaucratic system and the corruption at different levels have not been conducive for foreign entrepreneurs to do business in India. Although free-market reforms and liberalization have stimulated foreign investment in India, bureaucratic hurdles continue to impede the flow of investment. For example, from July 1991, when the reform policy started, to December 1994, almost 19,000 foreign investment proposals worth US$ 130 billion were filed with the Government. However, only a fraction of these investment commitments were actually

implemented, while others were languishing at different stages of pre-implementation. Besides bureaucracy, corruption is another damaging factor for economic growth in India. The adverse effects of corruption on growth have been statistically corroborated from cross-country data. India is amongst the most corrupt countries of the world with a score of only 2.7 out of 10 and ranked 45th among 52 countries in 1997. In 2002, it ranked 71st among 102 countries, (Bardhan, 1997). These two factors have made the cost of doing business in India expensive. As a result India has not been successful in attracting industries, both clean and dirty, even after trade reforms.

Another point which should be mentioned in this connection is that India has to maintain the standards for export goods. The World Trade Organization Agreement on Technical Barriers to Trade (TBT) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) have had an impact on Indian export markets. The first agreement encourages the use of international standards and emphasizes that environmental protection constitutes an important objective. SPS addresses a variety of measures used by Governments to ensure that human and animal food is safe from contaminants, toxins, disease causing organisms and additives, and measures to protect human health from pests or diseases carried by plants and animals. These measures are not covered by the TBT agreement.

Such measures have unfavourable impacts on the Indian export market. For example, marine and fishery products, peanuts, mango pulp and tea have faced difficulties gaining entry into the markets of the developed countries because of their failures to adhere to or attain international standards. Based on those two agreements, the United States and the EU have placed restrictions on the entry of those commodities in to their markets. The experiences of India and some other developing countries show that many of the TBT and SPS measures applied may not be in conformity with the agreements and in many cases the measures seem to be discriminatory (Jha, 2002). Although liberalization has been helpful in reducing tariffs and encouraging free trade these measures have acted as non-tariff barriers to trade. The findings of the present study are not influenced greatly by the above non-tariff barriers because the sectors falling under that category are not very air pollution intensive.

Recalling the higher ranked sectors in respect of exports and imports, if we study the pollution coefficients of those sectors (tables 2 and 3) it is observed that the import products generate more emissions than the exports. It is also evident that intra-industry trade occurs for sectors such as other chemicals, non-electrical machinery, electrical machinery, electronic equipment, rail and other transport equipment and other manufacturing. We know that the existence of

intra-industry trade has been discussed in new trade theories (Lancaster, 1980; Dixit and Norman, 1980; Krugman, 1981). It is observed that there are also differences in the pollution emissions of these groups of industries and that import goods generate more pollution than exports.

Table 3. Share of imports and emissions from imported goods (mt of CO_2, SO_2 and NO_x) in India

Major sectors	Imports		Pollution content of imports					
	1991-1992	1996-1997	1991-1992			1996-1997		
	Share (percentage)		CO_2	SO_2	NO_x	CO_2	SO_2	NO_x
Crude petroleum and natural gas	7.96	3.89	6.05	0.34	0.23	6.34	0.37	0.23
Other minerals	9.67	13.82	12.90	0.72	0.05	36.52	2.09	1.35
Petroleum products	6.78	8.92	55.05	3.08	2.13	99.98	5.73	3.69
Fertilizer	2.55	2.41	12.74	0.71	0.49	14.74	0.84	0.54
Other chemicals	10.72	6.83	20.12	1.13	0.78	21.98	1.26	0.81
Iron and steel	3.36	3.29	11.54	0.65	0.45	23.72	1.36	0.87
Non-ferrous metal	1.78	1.47	6.50	0.36	0.25	9.35	0.54	0.34
Non-electrical machinery	13.02	17.46	4.59	0.26	0.18	5.97	0.34	0.22
Electrical machinery	2.87	3.49	0.83	0.05	0.03	1.34	0.08	0.05
Electronic equipment	3.55	5.33	6.05	0.34	0.23	11.79	0.67	0.43
Rail and other transport equipment	4.79	4.25	7.80	0.04	0.30	5.15	0.29	0.19
Other manufacturing	4.88	2.65	19.90	1.11	0.77	35.03	2.00	1.29

It is also evident from table 3 that the textile products which are export items, though they generate higher levels of pollution, are however overwhelmed by the pollution generated by import items such as petroleum products, iron and steel and the non-electrical machinery sector.

The most important observation we note is that the major imports are manufacturing goods and petroleum products and the major exports are primary goods, textiles and machineries. However, machinery imports are greater than machinery exports. Machinery goods are pollution intensive, as are petroleum products. The multiplier for petroleum is extremely high as it accounts for a huge input in the production of many manufacturing industries. The high multiplier for petroleum also has made petroleum-intensive goods high multiplier goods. Thus

petroleum is a major contributor as well as the most determining factor of the pollution terms of trade.

Next we have attempted to analyse the impact of India's trade with EU15.

Evidence on the pollution haven hypothesis from India's trade with the European Union

After analysing the impact of India's trade with world let us now concentrate on India's trade with Europe and its impacts on CO_2, SO_2 and NO_x emissions. Table 4 records the values of PTOT for the year 1991-1992 and 1996-1997.

Table 4. Pollution terms of trade of India with the EU for CO_2, SO_2 and NO_x emissions in 1991-1992 and 1996-1997

Emission	*CO_2*		*SO_2*		*NO_x*	
	1991-1992	*1996-1997*	*1991-1992*	*1996-1997*	*1991-1992*	*1996-1997*
Pollution embodied in exports	25.63	69.91	1.32	3.58	0.94	2.40
Pollution embodied in imports	36.19	94.66	2.03	5.43	1.40	3.49
Pollution terms of trade	0.7120	0.7385	0.6146	0.6593	0.6542	0.6896
Pollution terms of trade*100	71.20	73.85	61.46	65.93	65.42	68.96

The result shows that the values of the pollution terms of trade for CO_2, SO_2 and NO_x are less than 100 though there was a marginal rise in the value from 1991-1992 to 1996-1997, i.e. 71.20 to 73.85, 61.45 to 65.93 and 65.42 to 68.96 respectively.

The EU is a developed region while India belongs to the category of developing economies. They differ in pollution policy and the most often cited reason for policy differences is the inequality of income between the two countries. It is argued theoretically by Copeland and Taylor (2003) that "if two countries differ only in their per capita income then we find that the richer country will have more stringent pollution standards. Trade will therefore create a pollution haven in the poor country. Pollution rises in the poor South and falls in the rich North… Therefore, free trade leads the South to change the composition of its output towards specialization in dirty good production." Our results for India show otherwise showever. India is not a pollution haven even when its trade with Europe has increased. Can we offer some explanation for this? This is perhaps explained by looking at tables 5 and 6, which present the share of exports and imports of India with the EU along with emissions in 1991-1992 and 1996-1997 respectively.

Table 5. Share of exports and emissions from exports (mt of CO_2, SO_2 and NO_x) from India to the EU

Major sectors	Exports		Pollution content of exports					
	1991-1992	1996-1997	1991-1992			1996-1997		
	Share (percentage)		CO_2	SO_2	NO_x	CO_2	SO_2	NO_x
Tea and coffee	2.62	2.33	0.15	0.008	0.005	0.07	0.004	0.002
Other crops	2.37	7.20	0.21	0.01	0.008	1.77	0.10	0.07
Fishing	3.17	4.15	0.27	0.01	0.010	2.69	0.15	0.10
Other food and beverages	2.00	1.60	0.42	0.02	0.01	1.10	0.06	0.04
Cotton textiles	1.69	1.83	0.56	0.03	0.02	1.76	0.10	0.07
Other textiles	22.8	24.49	5.55	0.28	0.20	16.36	0.92	0.62
Leather and leather products	7.90	9.25	1.24	0.06	0.04	3.90	0.22	0.15
Other chemicals	7.71	6.42	2.19	0.11	0.08	5.64	0.32	0.21
Other non-metallic mineral products	3.29	0.30	1.39	0.07	0.05	0.35	0.02	0.01
Electrical machinery	1.46	1.89	0.03	0.001	0.001	0.01	0.0008	0.0005
Rail and other transport equipment	1.04	2.15	4.37	0.43	0.31	9.03	1.07	0.72
Other manufacturing	34.60	38.97	4.05	0.87	0.234	10.15	1.95	0.961

The commodity composition of trade presented in table 5 bears an interesting picture. The export basket of India's trade with the EU was predominated by agriculture and related products such as tea, coffee, other crops, fishing, food and beverages, with a share of 10.14 per cent in 1991-1992 and 15.28 per cent in 1996-1997 and textiles (over 20 per cent in both years). Machineries (electrical, railway and other transport equipment and other manufacturing goods) accounted for 37.10 per cent of total exports in 1991-1992 and 43 per cent in 1996-1997. This shows that as a result of trade liberalization the share of manufacturing goods in the total increased.

The share of imports from Europe reveals that other minerals accounted for approximately 8 per cent and iron and steel 7.66 and 5.78 per cent in both years respectively. There was a significant rise in the share of imports of manufacturing goods from Europe, increasing from 49.17 per cent in 1991-1992 to 64.97 per cent in 1996-1997. Thus India imports more manufacturing goods than it exports to the EU. This phenomenon has been possible due to a reduction in tariff which is the consequence of changes in the trade policy of India since

mid-1991 (Jha and Rabindran, 2004). The manufacturing goods are pollution intensive. India does not import oil and crude petroleum from the EU. However, a large inflow of pollution embodied in trade with the EU is because of the high share of manufacturing goods in the import baskets of India (table 6). This also holds true in the case of intra-industry trade where imports generate more pollution than exports.

Table 6. Share of imports and emissions from imports (mt of CO_2, SO_2 and NO_x) to India from the EU

Major sectors	*Imports*		*Pollution content of imports*					
	1991-1992	*1996-1997*	*1991-1992*			*1996-1997*		
	Share (percentage)		*CO_2*	*SO_2*	*NO_x*	*CO_2*	*SO_2*	*NO_x*
Other minerals	8.04	7.44	1.70	0.09	0.07	6.01	0.34	0.22
Fertilizer	3.03	0.35	2.40	0.13	0.09	0.65	0.04	0.02
Other chemicals	10.44	10.47	4.59	0.26	0.18	4.40	0.25	0.16
Iron and steel	7.66	5.78	4.16	0.23	0.16	12.75	0.73	0.47
Non-ferrous metal	4.44	1.15	1.98	0.11	0.08	2.24	0.13	0.08
Agricultural and other machinery	4.34	5.19	6.49	0.36	0.25	29.67	1.70	1.09
Non-electrical machinery	14.11	14.25	2.93	0.16	0.11	22.01	1.26	0.81
Electrical machinery	11.56	30.19	0.22	0.01	0.009	0.83	0.05	0.03
Rail and other transport equipment	6.49	3.00	2.18	0.12	0.08	1.39	0.08	0.05
Other manufacturing	12.65	12.34	1.68	0.95	0.971	3.02	1.11	1.39

Thus, the above results (tables 2 to 6) indicate that Indian exports are cleaner than the goods that it imports. If we try to specify the import goods, then crude petroleum and petroleum products dominate in trade with the rest of the world, but the manufacturing sector leads in trade with the EU.

The development over time does not change the conclusion, but it provides a significant observation. In the case of the EU the results reveal that values of PTOT, though less than 100, increased during the liberalized period. This indicates that India's trade with the EU during the liberalization period moved India towards being a pollution haven, even in the early 1990s.

India is among the countries concerned with environmental protection. It has environmental standards for products and processes, has environmental impact assessment and has introduced environmental audit as well as an eco-labelling scheme. Recently India's strategy is to stop environmentally harmful processes and to control the overexploitation of non-renewable resources.

The Government of India has set up a Central Pollution Control Board and different state governments have also set up state pollution control boards. These bodies are actively engaged in maintaining environmental standards. Moreover, wide ranges of instruments are used including legislation and regulation, fiscal incentives, voluntary agreements and educational programmes. Several policy declarations and laws have contributed to the minimization of greenhouse gas emissions in India. These include the Forest Act (1980), the Air Pollution Act (1981, amended in 1987), the National Conservation Strategy (1992) and a Policy Statement on Abatement of Pollution (1992). More direct contributions to limiting growth in CO_2, SO_2 and NO_x emissions are being brought about by the Government's energy efficiency and conservation programmes and renewable energy programmes.

Policies for improving energy efficiency and conservation have been introduced during the eighth five-year plan. A comprehensive "National Energy Efficiency Programme" was launched during this period to coordinate and organize existing and new efforts on energy conservation in various sectors of the economy for achieving a targeted energy savings of about 5000 mw in the electricity sector and 6 million tons of oil in the petroleum sector. Various measures have been taken by the different industries in India to ensure quality and clean products for access to the markets of industrial countries.

It should be noted that differences in pollution policy are only one of the many factors that cause trade. Relative production costs are determined not only by pollution regulation alone and are not important determinants of costs (Copeland and Taylor, 2003). If other factors dominate to outweigh the effects of a pollution policy on comparative advantage, then trade may not concentrate polluting industries in countries with weak environmental regulation. So let us examine whether additional motives for trade change these results. In other words, our next task will be to investigate the role of factor endowments in determining India's trade during the reform period.

Evidence on the factor endowment hypothesis from India's trade with the rest of the world

We now discuss whether the factor haven hypothesis supports at all the case of India while trading with the rest of the world and also the European Union exclusively. Two factors, labour and capital, are considered. We have estimated the capital and labour requirements to produce one million rupees worth of typical exports and imports in 1991-1992 and 1996-1997 respectively, derived by equations 12 to 15. Table 7 reports the results.

Table 7. Capital and labour requirements in exports and imports for India and the rest of the world

	1991-1992		*1996-1997*	
	Capital requirements (per million rupees of output)	*Labour requirements (per million rupees of output)*	*Capital requirements (per million rupees of output)*	*Labour requirements (per million rupees of output)*
Exports	Akx = 1306816	Alx = 16797164	Akx = 2266412	Alx = 20547719
Imports	Akm = 1422480	Alm = 11498803	Akm = 2374966	Alm = 13232407

1991-1992

K_x = Akx/Alx = 77799.76

K_m = Akm/Alm = 123706.78

K_m = 1.59 K_x

1996-1997

K_x = Akx/Alx = 110299.93

K_m = Akm/Alm = 179481.02

K_m = 1.63 K_x

Here Akx = capital requirements in exports Alm = labour requirements in imports

Alx = labour requirements in exports Akm = capital requirements in imports

K_x = ratio of capital and labour requirements in exports

K_m = ratio of capital and labour requirements in imports

The results show that India seems to have been endowed with less capital per worker than other countries in the world in 1991-1992 and 1996-1997 respectively. Thus the HOV theory predicts that Indian exports would have required more labour (less capital per worker) than imports. We observe that Indian imports were 59 and 63 per cent more capital intensive than Indian exports in 1991-1992 and 1996-1997. India is a labour surplus economy. Its population size was 840 million in 1991, with the total labour force estimated to be 500 million and the total number of economically active population around 280 million according to the 1991 census. From table 2 we already observed that products such as other crops, fishing, food and beverages and leather products had a share of 15.52 per cent in 1991-1992 and 14.37 per cent in 1996-1997. These goods are relatively

labour intensive. It is a well-known fact that India is not a capital-rich country. Thus the evidence on India's trade with the rest of the world is supportive of the factor endowment hypothesis and conflicts with the pollution haven hypothesis.

Though India is not a capital-rich economy, it produces capital-intensive goods. However, India is unable to export these capital-intensive goods in a significant way because in recent times competitiveness in the international market is determined much more by brand name recognition than by factor endowments. What will be the contribution of the factor endowment hypothesis while India is trading exclusively with the EU is explored in the next section.

Evidence on the factor endowment hypothesis from India's trade with the European Union

Using equations 16 to 19 we have computed the labour and capital requirements in exports and imports of India with the EU for the years 1991-1992 and 1996-1997. Results are shown in table 8.

Table 8. Capital and labour requirements in exports and imports for India and the EU

	1991-1992		*1996-1997*	
	Capital requirements (per million rupees of output)	*Labour requirements (per million rupees of output)*	*Capital requirements (per million rupees of output)*	*Labour requirements (per million rupees of output)*
Exports	Akx = 186479	Alx = 2239341	Akx = 611080	Alx = 7678300
Imports	Akm = 249473	Alm = 1310710	Akm = 864779	Alm = 5054458

1991-1992

K_x = Akx/Alx = 83274

K_m = Akm/Alm = 190334.24

K_m = 2.28 K_x

1996-1997

K_x = Akx/Alx = 79585.32

K_m = Akm/Alm = 171092.33

K_m = 2.14 K_x

We observe that Indian imports from the EU were 128 and 114 per cent more capital intensive than Indian exports to the EU in 1991-1992 and 1996-1997 respectively. These results support the factor endowment hypothesis.

Our findings are interesting in this respect. The EU is a developed region with capital abundance while India is scarce in capital with labour abundance. Thus the EU, relatively abundant in factors (capital) that are used intensively in polluting industries, is exporting dirtier goods to India. On the contrary India,

which is relatively abundant in factors (labour) used intensively in clean industries, is exporting cleaner goods to the EU. The predictions of this theory, therefore, contrast sharply with those of the pollution haven hypothesis when we experiment India's trade with the EU. Here the factor endowment differences between India and the EU are sufficient to offset the cost differential created by differences in pollution regulations between India and the EU.

India exports primarily labour-intensive goods to the EU and imports machinery and other types of capital goods. This is the major reason why the results of this paper are in conformity with the FEH and not with the PHH. In their recent work, Copeland and Taylor (2003) have demonstrated that the United States and Canada have a comparative advantage in capital-intensive dirty products. Alternatively, they have found that India's comparative advantage lies in labour-intensive and relatively clean goods production.

For both cases, our results point out that differences in policy between India and the other countries and also the EU alone need not imply that trade liberalization will force dirty industries to move to India, which is a less regulated country in respect of pollution especially compared with Europe. We should mention here one important aspect favouring the export of labour-intensive goods. Since India is perceived as a knowledge-based economy in the post-globalization era the growth of the "relatively clean" service sector is pushing the pollution intensity GDP down.

V. CONCLUSION AND POLICY IMPLICATION

The complex interrelationship between trade and environment has become a focal point for international as well as national policymakers. With this in mind this paper has examined the impact of trade liberalization on the environment in India during the 1990s. It attempts to contribute to the recent debate on trade and environment by testing two contradictory hypotheses, i.e. the pollution haven hypothesis and the factor endowment hypothesis for India and the rest of the world and also for the EU exclusively. The environmental indicator for this study concentrates only on CO_2, SO_2 and NO_x emissions from fossil fuel combustion during the 1990s. The study measures India's environmental gains or losses from trade with other countries.

In this paper an index known as the pollution terms of trade has been used to test the pollution haven hypothesis while the labour and capital requirements of India's exports and imports have been computed to test the factor abundance hypothesis. Results reveal that Indian evidence does not support the pollution heaven hypothesis in both cases (trade with rest of the world and exclusively with

the EU) by achieving the pollution terms of trade below 100, but it does support the factor endowment hypothesis by exporting more labour-intensive goods which are environment friendly. Our results also point out that differences in pollution policy alone need not imply that trade liberalization will force dirty industries to migrate to less regulated countries. The factor endowment hypothesis turns out to be extremely important. Our results show that the predictions of the pollution haven hypothesis are reversed when factor abundance motives for trade are sufficiently strong.

Our findings may be compared with those of others. From case studies of econometric evidence on Latin America, especially Chile, Birdsall and Wheeler (1993) conclude that protected economies are more likely to favour pollution-intensive industries while openness actually encourages cleaner industries through the importation of developed country pollution standards. However, the work of Machado and others (2001) on Brazil does not corroborate our findings but rather supports the pollution haven hypothesis. These studies did not, it should be pointed out, test the factor endowment hypothesis.

The recent evidence suggests (Copeland and Taylor, 2003) that factor abundance differences are much stronger determinants of trade patterns than pollution regulation differences. They have also demonstrated through a detailed empirical work that developed countries such as the United States and Canada have a comparative advantage in capital-intensive dirty products. Alternatively, they have found that India's comparative advantage lies in labour-intensive and relatively clean goods production.

The most interesting results derive from the study by Cole and others (2001). The trading partners selected for their study are: United Kingdom-Asia, United States-Asia, United States-Latin America and Japan-Asia. In terms of support for the PHH and/or the FEH, the testing of the two models provides mixed results. In the HOV model they found no evidence to suggest that environmental regulations are determining net exports, whilst they have seen some evidence to suggest that a country's capital endowment is a positive determinant of net exports. Their evidence suggests that differences in environmental regulations and factor endowments are, to some extent, influencing global trade patterns.

Since the pollution haven and factor endowment hypotheses offer such different predictions, we have designed our empirical work to facilitate a weighing of their relative strength. India, being a developing and labour-rich country, gains from trade in terms of emissions.

In this connection we would like to mention that if one widens the definition of the polluting industries to include all sorts of environmentally unfriendly goods (including the consideration of the food safety), then it could be shown that many of India's goods and also its exports would likely to fall in that category. For example, as we have already pointed out, fishery products and tea in which India has a comparative advantage are also relatively labour intensive and have faced SPS barriers in export markets. From that point of view it can be argued that though India does not belong to a pollution haven and also supports the factor endowment hypothesis, the two hypotheses may not necessarily be in conflict with each other. Our paper concentrates only on three pollutants, CO_2, SO_2 and $NO_{x,}$ and the pollution-intensive industries are computed through these indicators. Therefore the findings of the paper should be judged keeping this in mind. From our study we suggest several policies.

First, the trade liberalization policy should further be strengthened and encouraged to continue in the future. This will help India to produce environment friendly goods and also promote exports.

Second, since the findings of the paper support the factor endowment hypothesis arguing that India has a comparative advantage in exporting labour-intensive goods, we suggest that the production of labour-intensive goods should be emphasized. This will generate employment opportunities in a labour surplus economy such as India, which in turn will help to reduce poverty, as the eradication of poverty in the developing countries including India is being given top priority in recent years.

Third, to increase exports the tariffs on the tradable sector, especially primary sectors-agriculture, allied and agriculture-based industrial sector, consumable non-durable goods sector which includes textiles, and leather industries with high social profitability, should be lowered appreciably. A policy of selective, chief credit extension for these goods will be of great help for enhancing production capabilities. As it is evident from the paper that India has a comparative advantage in these sectors and liberalization has also favoured.

Fourth, our policymakers should be aware of the trade-off between comparative advantage and the consequences of stringent environmental regulation. Too much emphasis on strict regulations as we observe indications in the Draft National Environmental Policy (Government of India, 2004), might lead to loss of comparative advantage and export of dirtier goods thus raising the pollution levels in India.

Finally, in India the trade-related problems are addressed by trade policies while environmental issues are addressed by environmental policies. For example, the recently announced environmental policy (Government of India, 2004) in India has several important objectives. However, no concern has been expressed about the complex relationship between the environment and trade. This is also the case for trade policies announced by the Government from time to time. Our paper suggests that both policies should be integrated. In other words, the trade policy of India should incorporate environmental concerns in order to harmonize the country's trade targets with its environmental priorities including those related to international commitments with respect to Agenda 21 and the United Nations Framework Convention on Climate Change.

REFERENCES

Ahmad, N., 2002. Environmental Spillovers – Energy Use and Carbon Leakages in the OECD, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Annual Survey of Industries, 1991-92. Government of India.

_____, 1996-97. Government of India.

Antweiler, W., 1996. "The pollution terms of trade", *Economic Systems Research,* 8(4): 361-365.

Antweiler, W., B.R. Copeland and M.S. Taylor, 2001. "Is free trade good for the environment?", *The American Economic Review,* 91(4): 877-908.

Bardhan, P., 1997. "Corruption and development: a review of issues", *Journal of Economic Literature,* 35(3): 1320-1346.

Birdsall, N. and D. Wheeler, 1993. "Trade policy and industrial pollution in Latin America: where are the pollution havens?", *Journal of Environment and Development,* 2(1): 137-49.

Brander, Z.A. and M.S. Taylor, 1997. International trade between consumer and conservationist countries, *Resource and Energy Economics,* 19: 267-298.

Central Statistical Organization, 2002. National Accounts Statistics, Government of India.

Cole, M.A., R.J.R. Elliott and A.K. Azhar, 2001. The Determinants of Trade in Pollution Intensive Industries: North-South Evidence, Working Paper, Department of Economics, University of Birmingham.

Copeland, B.R. and M.S. Taylor, 2003. *Trade and the Environment: Theory and Evidence* (Princeton: Princeton University Press).

Dasgupta, S., A. Mody, S. Roy and D. Wheeler, 1995. Environmental Regulation and Development: A Cross-Country Empirical Analysis, World Bank, Policy Research Working Paper No. 1448.

de Haan, M., 2002. Extending the Scope of Environmental Indicators by Taking into Account International Trade Dependencies, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Dietzenbacher, E. and K. Mukhopadhyay, 2004. An empirical examination of the pollution haven hypothesis for India: towards a green Leontief paradox?, Input-Output and General Equilibrium: Data, Modeling and Policy Analysis, held at Free University of Brussels, Brussels, September 2-4, 2004, International Conference Jointly Organized by EcoMod Network and IIOA.

Dixit, A.V. and V. Norman, 1980. *Theory of International Trade* (Cambridge, Cambridge University Press).

Eskeland, G.S. and A.E. Harrison, 2003. Moving to greener pastures? Multinationals and pollution haven hypothesis, *Journal of Development Economics,* 70(1), 1-23.

Fieleke, N.S., 1975. The energy content of US exports and imports, Working Paper No. 51, Division of International Finance, Board of Governors, Federal Reserve System.

Gallagher, K. and F. Ackerman, 2000. Trade Liberalization and Pollution Intensive Industry in Developing Countries: A Partial Equilibrium Approach, Global Development and Environment Institute, Working Paper 00-03.

Gerilla, G.P., S. Kagawa and H. Inamura, 2002. International Trade and Carbon Emissions: A Case of China and Japan, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Grossman, G. and A.B. Krueger, 1992. Environmental Impacts of a North American Free Trade Agreement, Centre for Economic Research, Discussion Papers 644.

Government of India, 2004. Draft National Environmental Policy 2004, Ministry of Environment and Forests, New Delhi.

Hayami, H. and M. Nakamura, 2002. CO_2 Emission of Altemative Technologies and Bilateral Trade between Japan and Canada: Technology Option and Implication for Joint Implementation, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Hettige, H., P. Martin, M. Singh and D.R. Wheeler, 1995. The Industrial Pollution Projection System. Policy Research Working Paper 1431, Washington, World Bank.

Jha, S. and S.G. Rabindran, 2004. Environmental impact of India's trade liberalization, paper presented at the "75 years of Development Conference" held at Cornell University, New York, 7-9 May.

Jha, V., 2002. Overview of the TBT and SPS Agreements and its possible Implications for India, r0.unctad.org/trade_env/docs/SPS per cent20and per cent20TBT per cent20doc.pdf.

Khrushch, M., 1996. Carbon emissions embodied in manufacturing trade and international freight of the eleven OECD countries, Berkeley: University of California (M.Sc. thesis).

Krugman, P., 1981. Intra-industry specialization and the gains from trade, *Journal of Political Economy,* vol. 89, No. 5, 959-73.

Lancaster, K., 1980. Intra-industry trade under perfect monopolistic competition, *Journal of International Economics,* 10(2): 151-175.

Lange, G.M., 1998. Applying an integrated natural resource accounts and input-output model to development planning in Indonesia, *Economic Systems Research,* 10 (2), 113-134.

Lange, G.M. and R. Hassan, 2002. Trade and the Environment in Southern Africa: The Impact of the 'User Pays' Principle for Water on Exports of Botswana, Namibia, and South Africa, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Lenzen, M., 2001. A generalized input-output multiplier calculus for Australia, *Economic Systems Research,* 13(1): 65-92.

Lenzen, M. and J. Munksgaard, 2002. Energy and Greenhouse Gas Emissions Embodied in Trade, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Leontief, W., 1951. *The Structure of American Economy, 1919-39,* second edition, New York, Oxford University Press.

Levinson, A. and M.S. Taylor, 2001. Trade and the environment: unmasking the pollution haven hypothesis, working paper, Georgetown University.

Low, P. and A. Yeats, 1992. Do dirty industries migrate, International Trade and Environment, World Bank Discussion Paper No. 159.

Lucas, R.E.B., D. Wheeler and H. Hettige, 1992. Economic Development, Environmental Regulation and the International Migration of Toxic Industrial Pollution: 1960-88 in Low, P. (ed.) International Trade and the Environment. World Bank Discussion Paper No. 159.

Machado, G., R. Schaeffer and E. Worrell, 2001. Energy and carbon embodied in the international trade of Brazil: an input-output approach, *Ecological Economics,* 39(3): 409-424.

Mani, M. and D. Wheeler, 1999. In search of Pollution Havens? Dirty Industry in the World Economy, 1960-1995, document presented to the OECD Conference on Foreign Direct Investment and the Environment, The Hague, 28-29 January.

Munksgaard, J. and K.A. Pedersen, 2001. CO_2 Accounts for Open Economies: Producer or Consumer Responsibility?, *Energy Policy,* 29(4): 327-335.

Mukhopadhyay, K., 2004. "Environmental impacts of trade with Europe: A study on the impact of trade with EU on CO_2 emissions in India during 1990s", IDPAD (Indo-Dutch Programme on Alternatives in Development) Newsletter, vol. II(1), January-June, pp. 27-34.

Mukhopadhyay, K. and D. Chakraborty, 2004. *Environmental Impacts of Trade Liberalization in India, in Econometric Models: theory and applications,* edited by D.M. Nachane et al., Allied Publishers Limited.

Nordström, H. and S. Vaughan, 1999. *Special studies: trade and environment* (Geneva, World Trade Organization).

OECD, 1998. *Foreign Trade by Commodities,* Statistics Directorate, vol. 5, OECD, Paris.

Planning Commission, 1995. A Technical Note to the Eighth Plan of India, Input-Output Transaction Table for 1991-92, New Delhi, Government of India.

Planning Commission, 2000. Input-Output Transaction Table for 1996-97, New Delhi, Government of India.

Proops, J.R., G. Atkinson, B.F.V. Schlotheim and S. Simon (1999). International trade and the sustainability footprint: a practical criterion for its assessment, *Ecological Economics,* 28(1): 75-97.

Przybylinski, M., 2002. Bilateral "Pollution Flows" between Poland and Germany, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Schaeffer, R. and de Sá, A.L., 1996. "The embodiment of carbon associated with Brazilian imports and exports", *Energy Conversion and Management,* 37(6-8): 955-960.

Smarzynska, B.K. and S.J. Wei, 2001. Pollution havens and foreign direct investment: Dirty secret or popular myth?, World Bank, Policy Research Working Paper 2673.

Treflar, D., 1995. The case of the missing trade and other mysteries, *The American Economic Review,* 85: 1029-1046.

Wadeskog, A., 2002. Trade and the Environment in Input-Output Based Environmental Accounts Analysis, paper presented at the 14th International Conference on Input-Output Techniques held at UQAM, Montreal, Canada, 10-15 October.

Wheeler, D. and P. Martin, 1992. "Prices, Policies, and the International Diffusion of Clean Technology: The Case of Wood Pulp Production", in P. Low (ed.), International Trade and the Environment, World Bank Discussion Paper No. 159 (Washington, World Bank).

Wright, D.J., 1974. Goods and services: an input-output analysis, *Energy Policy,* 2(4): 307-315.

Wyckoff, A.W. and J.M. Roop, 1994. The embodiment of carbon in imports of manufactured products: Implications for international agreements on greenhouse gas emissions, *Energy Policy,* 22(3): 187-194.

Xing, Y. and C. Kolstad, 1997. Do lax environmental regulations attract foreign investment?, *Environmental and Resource Economics,* 21(1): 1-22.

ECONOMIC POLICY IN SRI LANKA: ISSUES AND DEBATES

by Saman Kelegama, Sri Lanka; Sage International Publications, India, 2004; 520 pages, ISBN: 0-7619-3278-X (Hb)

Economic policy has been a key topic of debate among economists, social scientists, policymakers, administrators, investors, donors and others interested in growth and development. Over the past two decades, it has become highly controversial and provocative due to the involvement of donor agencies in economic policy issues of developing economies. A detailed analysis of the small open economy of Sri Lanka presents an interesting case study as its policy experience covers both controlled and open economy policy regimes over a period of five decades. Here are 23 well-trained economists and social scientists who have put together an in-depth and timely analysis on the change of policy regimes and its impact on the socio-economic development of Sri Lanka. It is a compendium of articles in honour of Gamani Corea in recognition of his contribution to Sri Lankan economic policymaking and international policymaking.

The volume is edited by Saman Kelegama, Executive Director of the Institute of Policy Studies and Co-editor of the *South Asia Economic Journal,* best known for his contribution on policy analysis in Sri Lanka. An innovative aspect of this volume is that it consists of six distinct sections: (a) development strategy and ideology, (b) macroeconomic policy, (c) agriculture, industry and technology development, (d) employment and labour, (e) institutional and governance issues, and (f) social welfare. The editor's introduction to the volume, with a summary of the milestones of Gamani Corea's career, and to each of the parts and chapters put the individual studies into context to provide a comprehensive account of theory, issues and policy.

As far as we are aware, there exist at least five major compendiums of studies dealing with the evolution of post-independence economic policy of Sri Lanka. This volume, however, is a welcome contribution as it presents a more careful and detailed analysis of economic policy in Sri Lanka using a structured format. Its time coverage and scope are much more encompassing than any other study presently available. The volume contains a quite thorough and detailed analysis of policy issues which are of vital importance to the ongoing policy debate in Sri Lanka.

Chapters 1 to 5 of Part I deal with the growth of manufactured exports and terms of trade, the influence of development ideology in the macroeconomic policy reform process, the lessons of national planning, understanding policy reforms (1960-2000) and the importance of the public sector. Part II deals with aspects related to fiscal policy, public debt and exchange rates while Part III encompasses chapters 9 to 11 focusing on agricultural development, industrial policy and technology development. Part IV is concerned with employment and labour, paying special attention to labour productivity, youth unemployment and migration. Part V examines issues related to economic liberalization and institutional reform, competition policy, privatization and regulation, and banking sector reforms. Part VI consists of four studies on colonial lineages of the welfare state, overview of the health sector, public investment in education and poverty alleviation.

The volume consists of 22 self-contained chapters and the papers are well structured with subheadings in the use of themes and fully documented with references to the literature in chosen areas. The economic policy issues discussed in many of the papers are based on sound economic theory and rigorous empirical work. Some of the papers are also rich in intercountry and inter-temporal comparisons. The constraints of space only allow a reviewer to discuss a small sample of papers in the volume without being able to do justice to all the writers.

Two papers on the growth of manufacturing exports and exchange rates provide an interesting policy debate paying due attention to early contributions by Gamani Corea. More specifically, the chapter on manufacturing sector exports makes an attempt to test the validity of Corea's allegiance to the new export pessimism and the recent terms of trade debate. Similarly, the chapter on exchange rates examines the behaviour of exchange rates with special reference to Corea's contribution in setting up the multiple exchange rate system in the late 1960s. The paper on the influence of development ideology in macroeconomic policy reform provides an interesting account on the changing international opinion on "development debate" and policy response to economic shocks in Sri Lanka. The chapter on understanding reforms (1960-2000) presents a comparative assessment of reforms and their outcomes. It also examines future perspectives for policy reform and points out that "there is indeed a real opportunity for a deal between Sri Lanka and the donor community at present whereby Sri Lanka commits itself to the policies needed for low inflation and prudent debt management while the donors guarantee aid support adequate to look after market failures comprehensively and sustain rapid growth."

The paper on the importance of the public sector in economic and social development examines yet another controversial issue – the role of the public

sector in Sri Lanka – paying particular attention to the Report of the South Commission which included Corea. In the conclusions the author states that "the crux of the matter is that both the public and private sector are the engines of growth; one alone is inadequate. In a growing economy there is room for both to co-exist." The chapter on fiscal policy provides an important contribution to the current policy debate on the fiscal and taxation system in Sri Lanka paying special attention to the declining trend of government revenue, relationship of taxation to savings, capital formation and investment, the elasticity buoyancy of the fiscal system, tax evasion, the black economy and tax amnesties and fiscal devolution. Similarly, the policy analysis covered by two papers on competition policy and privatization and regulation is relevant and important in the present context of economic policy debate in Sri Lanka.

The paper on youth unemployment is an interesting exploration of the causal factors affecting unemployment and the author argues that "what Sri Lanka's experience over the last five decades or so shows is that the most fundamental factor behind the phenomenon of heavy unemployment in the economy is inadequacy of accumulation and consequent sluggishness in economic growth." At the end of the analysis, the paper provides several policy insights including selective state interventions and appropriate institutional arrangements. The chapter on poverty alleviation looks at the poor in their micro-meso-macro framework and examines the complex linkage between the poor and the environment that controls their economic and social well-being. It is an interesting piece of work on pro-poor growth focusing on both theoretical and implementation issues. At the end the author rightly points out that "the agenda of the National Poverty Reduction Strategy, which is the implementation plan for the pro-poor growth concept, has to be decentralized down to the divisional level with time-bond targets. This has not happened as yet. Debates can go on and on in these two arenas."

Three papers dealing with agriculture, health and education raise some important issues and provide additional stimulus to the ongoing policy debate at the sectoral level. For example, the paper on agriculture discusses the controversies surrounding the post-independence period. In its conclusions the author states that "it is interesting to note that current controversies in agricultural policies have been generated by policies recommended by, and often insisted upon by international institutions." The paper on the health sector examines emerging demand and supply conditions and its implications for growth and expansion of the health sector. Similarly, the paper on education presents a comparative assessment of the education sector and policy directions vital for future development.

It will be obvious to any reader that this volume makes contributions on a wide range of relevant and important aspects of the Sri Lankan economic policy debate. The contributions offer multiple perspectives on the evolution of economic policy in Sri Lanka. All in all, they are a refreshing collection of well-researched papers that provide us with much needed alternative views on the current Sri Lankan policy debate.

The primary limitation of this book is the lack of cohesion typically found in a collection of articles written by a diverse set of researchers. The link between formal underlying theory and empirical support is also weak in some chapters. For example, there is nothing stated on productivity in chapter 11 on "Technology Development: Key Issues in Productivity." It has also failed to capture some of the key arguments relating to research and development, productivity and competitiveness of Sri Lanka. Similarly, the paper on the lessons of national planning is rather descriptive and the coverage is of less relevance to the ongoing economic policy debate in Sri Lanka. Readers should not, therefore, expect this volume to provide conclusive evidence on some of the issues currently debated among policy circles. Instead, what they will find in some chapters is that the authors have identified and highlighted a set of interesting issues and debates. Another major limitation of this volume centres on the selection of topics. Indeed, the volume has failed to cover some of the key sectors seriously threatening the socio-economic development of Sri Lanka, i.e. energy and transport.

Despite these observations, most of the individual chapters are lucid and informative, based on a careful revision of literature and an assessment of competing views. The balance between reviews and original work is about right for a mainly policy-oriented document. The real value of this volume is that it provides a good coverage of policy regimes over the past five decades with a clear focus on socio-economic impacts and future directions. This volume covers much ground, and the clear and careful presentation will make it useful to policymakers, academics, researchers and students and a rich source for further research.

Senior Lecturer *Sunil Chandrasiri*
Department of Economics
University of Colombo

IMPLEMENTING THE MONTERREY CONSENSUS IN THE ASIAN AND PACIFIC REGION: ACHIEVING COHERENCE AND CONSISTENCY

United Nations publication
Sales No. E.05.II.F.8, ISBN: 92-1-120418-6
ST/ESCAP/2351

Developing countries in the Asia-Pacific region are experiencing the highest rate of economic growth in the world but face a formidable challenge sustaining it. Growth within the region is uneven, exacerbating sharp disparities both in levels of social and economic development and the ability of countries to generate the financial resources they need to achieve their Millennium Development Goals. Moreover, the region's demand for investment in infrastructure alone, estimated by the World Bank at more than US$ 1 trillion in the next five years, far exceeds current capital flows or the capacity of existing development finance institutions. The shortfall highlights the need for a concerted, coherent and coordinated effort to fill the gap by Governments, regional and multilateral organizations and the private sector.

This study takes stock of the progress made by Asian and Pacific countries in implementing the six areas of action set out in the Monterrey Consensus of the International Conference on Financing for Development. These include mobilizing domestic and international resources, international trade, financial and technical cooperation, external debt and systemic issues in the region's monetary, financial and trading systems. The study examines whether these systems are sufficient to maintain the region's competitiveness, lays out policy options for the region's Governments and proposes a number of actions to address gaps in both policy and financing.

The study emphasizes the need to develop capital markets at both the country and regional levels. It finds that the region has the world's highest rate of savings but that these are not keeping pace with the rate of economic growth and could become a constraint on future private investment. In addition, the 1997 Asian financial crisis underlined the importance of avoiding dependence on banking systems, which are still the largest source of savings. Improved stock and bond markets offering diversified investment opportunities and higher returns are needed to attract savings and provide entrepreneurs with investment resources. Well-functioning markets are also needed to encourage pension and provident funds

that would help to mobilize more savings and will be increasingly important in assisting Governments to shoulder the cost of an ageing population. The study notes that, to develop capital markets, Asian and Pacific countries will need to strengthen their legal and regulatory environment and encourage the emergence of ratings agencies.

The study emphasizes the importance of increased South-South cooperation led by the region's stronger economies. Asia and the Pacific attract the largest amount of FDI, led by China and Hong Kong, China, but the study points out that only a dozen countries in the region have benefited from FDI. It notes that Asian and Pacific countries account for about three quarters of total outward FDI by developing countries, but the volume of South-South investment still represents only a tiny percentage of the region's investment needs.

Similarly, the study urges the region's stronger economies to increase official development assistance to weaker economies. ODA to the Asia-Pacific region accounts for less than one third of global ODA. Although the Monterrey Consensus calls for a rise in ODA to 0.7 per cent of the GNP of richer countries, the actual commitments remain much smaller and multilateral aid is similarly constrained. Bringing aid to the levels called for by the Consensus by 2015 would make a major contribution towards generating the funds needed to develop social and physical infrastructure.

Trade, however, is the single most important source of economic growth and finance for the region's development. The growth of China's economy ranks as the main dynamic in regional trade, which is expanding rapidly among both countries within the region and those outside it. Trade, however, faces numerous obstacles, which take the form of tariff and non-tariff barriers, restrictions on trade in services and trade-distorting subsidies. The removal of these obstacles would make a major contribution towards generating increased resources for development. The region is also experiencing a rapid proliferation of bilateral, regional and intercontinental trade agreements that need to be rationalized, underlining the importance of bringing the WTO Doha round to an early conclusion and providing for greater participation by developing countries. By the same token, the study notes that countries need to build up their negotiating capabilities and strengthen research and analysis.

The study also sets out the need for regional initiatives and cooperation to increase the coherence of monetary, financial and trading systems and to reduce vulnerability in the event of another financial crisis. The region has built up hefty international reserves as a form of insurance against crippling capital movements but it is also debating the associated cost of holding such large reserves, much of

them denominated in a devaluing United States dollar, and the options for using these funds more productively within the region. The 1997 financial crisis, however, led to the Chiang Mai Initiative, launched by the ASEAN+3 countries, which created a network of bilateral swap arrangements giving countries access to liquidity in an emergency that is intended to preempt or contain crises. The financial crisis also prompted moves to enhance economic surveillance and monitoring in the region. The Chiang Mai Initiative needs to broaden its membership and develop into a multilateral facility with access to a larger pool of reserves to provide a more effective defence against sudden capital movements. In the meantime, the debate surrounding the 1997 financial crisis has also stirred debate on the possibility of creating an Asian Monetary Fund to complement the work of IMF and the merits of setting up a common Asian currency market, despite the formidable obstacles posed by the region's size and diversity.

The study also calls for consideration of two more concrete initiatives. The first proposes the creation of an Asian Investment Bank, modeled on the European Investment Bank, to help to mobilize investment in infrastructure in particular, borrowing on capital markets and relending at concessional rates to projects that address its priorities. It suggests that ESCAP carry out a feasibility study for an Asian Investment Bank along the lines of the study that it conducted in 1966 for the Asian Development Bank.

The second proposal in the study is for ESCAP to take a more proactive role in strengthening the implementation of the Consensus in the region. It would do this by, first, stepping up technical support and training to strengthen the capacity of countries in the area of resource mobilization, finance and trade and, second, seeking to harmonize and bring together the initiatives of such subregional organizations as ASEAN, SAARC and ECO to develop an understanding of how to exploit the synergies between them.

SUBSCRIPTION FORM

(Please type or print)

NAME: _____

POSITION: _____

ORGANIZATION: _____

ADDRESS: _____

_____

_____

_____

COUNTRY: _____ POSTCODE: _____

TELEPHONE: _____ FACSIMILE: _____ E-MAIL: _____

SUBSCRIPTION RATES FOR *ASIA-PACIFIC DEVELOPMENT JOURNAL* (2 ISSUES PER YEAR)

❑	1 year	US$ 35.00
❑	3 years	US$ 90.00

Please mail this form together with your subscription fee in US dollars to:

Chief, Conference and Management Unit
Administrative Services Division
Economic and Social Commission for Asia and the Pacific (ESCAP)
United Nations Building, Rajadamnern Nok Avenue
Bangkok 10200, Thailand

✂ ---

This publication may be obtained from bookstores and distributors throughout the world.
Please consult your bookstore or write to any of the following:

Sales Section
Room DC2-0853
United Nations Secretariat
New York, NY 10017
United States of America

Tel.: (212) 963-8302
Fax: (212) 963-4116
Telex: 422311 UN UI

Sales Section
United Nations Office at Geneva
Palais des Nations
CH-1211 Geneva 10
Switzerland

Tel.: (41) (22) 917-1234
Fax: (41) (22) 917-0123
Telex: 23711 ONU CH

Chief, Conference and Management Unit
Administrative Services Division
Economic and Social Commission for Asia and the Pacific (ESCAP)
United Nations Building, Rajadamnern Nok Avenue
Bangkok 10200, Thailand

Tel.: (662) 288-1234
Fax: (662) 288-1000
Telex: 82392 ESCAP TH

READERSHIP SURVEY

The Poverty and Development Division of ESCAP is undertaking an evaluation of the publication *Asia-Pacific Development Journal,* with a view to improving the usefulness of future publications to our readers. We would appreciate it if you could complete this questionnaire and return it, at your earliest convenience, to:

Director
Poverty and Development Division
ESCAP, United Nations Building
Rajadamnern Nok Avenue
Bangkok 10200, THAILAND

QUESTIONNAIRE

	Excellent	*Very good*	*Average*	*Poor*
1. Please indicate your assessment of the *quality* of the publication in terms of:				
• presentation/format	4	3	2	1
• readability	4	3	2	1
• timeliness of information	4	3	2	1
• coverage of subject matter	4	3	2	1
• analytical rigour	4	3	2	1
• overall quality	4	3	2	1
2. How *useful* is the publication to your work?				
• provision of information	4	3	2	1
• clarification of issues	4	3	2	1
• its findings	4	3	2	1
• policy suggestions	4	3	2	1
• overall usefulness	4	3	2	1

3. Please give examples of how this publication has contributed to your work:

.....

.....

.....

.....

.....

4. Suggestions for improvement of similar publications:

.....

.....

.....

.....

5. Your background information, please:

Name: .....

Title/position: .....

Institution: .....

Office address: .....

.....

Please use additional sheets of paper, if required, to answer the questions.
Thank you for your kind cooperation in completing this questionnaire.

Instructions to contributors

1. MANUSCRIPTS

Authors are requested to submit two copies of their manuscripts in English. Contributors should indicate in their covering letter to the Editorial Board that the material has not been previously published or submitted for publication elsewhere. The length of manuscripts should not normally exceed 25-30 double-spaced A4-size pages. Manuscripts are accepted subject to editorial revision.

The manuscripts should be typed, double-spaced, on one side of white A4 paper. Since all manuscripts will be refereed by professionals in the field, the name(s) of the author(s), institutional affiliation(s) and other identifying information should be placed on the title page only, in order to preserve anonymity.

The title page should contain the following: (a) title; (b) name(s) of the author(s); (c) institutional affiliation(s); and (d) complete mailing address, telephone number and facsimile number of the author, or of the primary author in the case of joint authors. The second page should contain the title, the name(s) of the author(s) and an abstract of approximately 150 words. Acknowledgements (if any) should appear after the abstract.

Once a manuscript is accepted for publication, the author(s) should submit a copy of the manuscript on a computer diskette labelled with the title of the article, the name(s) of the author(s) and the word-processing software used. The preferred word-processing software is MSWord.

2. FOOTNOTES AND QUOTATIONS

Footnotes, if any, should be numbered consecutively with superscript arabic numerals. They should be typed single-spaced and should be placed at the foot of each page. Footnotes should not be used solely for citing references.

Quotations should be double-spaced. A copy of the page(s) of the original source of the quotation, as well as a copy of the cover page of that source, should be provided.

3. TABLES

All tables should be numbered consecutively with arabic numerals. Each table should be typed double-spaced on a separate page and should follow the list of references. There should be a clear indication in the text where the table should be inserted. Full source(s) should appear below the table, followed by notes, if any, in lower-case letters.

4. FIGURES

All figures should be provided as camera-ready copy and numbered consecutively. Figures should be planned to fit the proportions of the printed page. There should be a clear indication in the text where each figure should be inserted. Full source(s) should be provided below each figure.

5. REFERENCES

Authors should ensure that there is a *complete* reference for every citation in the text. References in the text should follow the author-date format followed, if necessary, by page numbers, for example, Becker (1964: 13-24). List only those references that are actually cited in the text or footnotes. References, listed alphabetically, should be typed double-spaced on a separate page in the following style:

Ahmed, E. and N. Stern, 1983. "Effective taxes and tax reform in India," Discussion Paper 25, University of Warwick.

Desai, Padma, ed., 1883. *Marxism, Central Planning, and the Soviet Economy* (Cambridge, MA, MIT Press).

Krueger, Alan B. and Lawrence H. Summers, 1987. "Reflections on the inter-industry wage structure," in Kevin Lang and Jonathan S. Leonard, eds., *Unemployment and the Structure of Labour Markets* (London, Basil Blackwell).

Sadorsky, P., 1994. "The behaviour of U.S. tariff rates: comment," *American Economic Review,* vol. 84, No. 4, September, pp. 1097-1103.

Terrones, M., 1987. "Macroeconomic policy cycle under alternative electoral structures: a signalling approach," unpublished.

كيفية الحصول على منشورات الامم المتحدة

يمكن الحصول على منشورات الامم المتحدة من المكتبات ودور التوزيع في جميع انحاء العالم • استعلم عنها من المكتبة التي تتعامل معها أو اكتب الى : الامم المتحدة ،قسم البيع في نيويورك او في جنيف •

如何购取联合国出版物

联合国出版物在全世界各地的书店和经售处均有发售。请向书店询问或写信到纽约或日内瓦的联合国销售组。

HOW TO OBTAIN UNITED NATIONS PUBLICATIONS

United Nations publications may be obtained from bookstores and distributors throughout the world. Consult your bookstore or write to: United Nations, Sales Section, New York or Geneva.

COMMENT SE PROCURER LES PUBLICATIONS DES NATIONS UNIES

Les publications des Nations Unies sont en vente dans les librairies et les agences dépositaires du monde entier. Informez-vous auprès de votre libraire ou adressez-vous à : Nations Unies, Section des ventes, New York ou Genève.

КАК ПОЛУЧИТЬ ИЗДАНИЯ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ

Издания Организации Объединенных Наций можно купить в книжных магазинах и агентствах во всех районах мира. Наводите справки об изданиях в вашем книжном магазине или пишите по адресу: Организация Объединенных Наций, Секция по продаже изданий, Нью-Йорк или Женева.

COMO CONSEGUIR PUBLICACIONES DE LAS NACIONES UNIDAS

Las publicaciones de las Naciones Unidas están en venta en librerías y casas distribuidoras en todas partes del mundo. Consulte a su librero o diríjase a: Naciones Unidas, Sección de Ventas, Nueva York o Ginebra.

Printed in Bangkok
July 2005 – 1,480

United Nations publication
Sales No. E.05.II.F.20

ISBN: 92-1-120431-3
ISSN: 1020-1246
ST/ESCAP/2372

IN THIS ISSUE:

United Nations
ESCAP

United Nations
Economic and Social Commission for Asia and the Pacific
Poverty and Development Division
United Nations Building, Rajadamnern Nok Avenue
Bangkok 10200, Thailand
Tel.: (66 2) 288-1902
Fax: (66 2) 288-3007
E-mail: escap-pdd@un.org
escap-publicationsoffice@un.org
Website: http://www.unescap.org/

United Nations 60
A Time for Renewal