STUDIES IN TRADE AND INVESTMENT
60

AGRICULTURAL TRADE: PLANTING THE SEEDS OF REGIONAL LIBERALIZATION IN ASIA

A STUDY BY THE ASIA-PACIFIC RESEARCH AND TRAINING NETWORK ON TRADE

ESCAP 1947-2007

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

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Preface

Planting trees today will provide our children with shade.
Liberalizing trade will give them jobs and prosperity.
(anonymous)

This publication brings together papers prepared for the "Regional Agricultural Trade Liberalization" project, which was implemented by the Asia-Pacific Research and Training Network on Trade (ARTNeT) researchers between May 2005 and December 2006. The project explored the potential for agricultural trade opportunities at the regional level through preferential trade agreements (PTAs), at a time when the number of PTAs globally and in the ESCAP region has been increasing sharply. The objectives of the study were: (a) to map and analyse existing trade agreements in the region and their product coverage, particularly agricultural products, as well as associated tariff and non-tariff barriers; and (b) to derive implications and recommendations/guidelines for trade policy and negotiations. Research in this area was endorsed by the participants at the First ARTNeT Consultative Meeting of Policymakers and Research Institutions on 29 October 2004.

It was at that meeting that ARTNeT was launched as an initiative of ESCAP and the International Development Research Centre (IDRC), Canada in cooperation with 10 national-level research institutions in the region. ARTNeT operates as an open network of national-level research institutions, supported by ESCAP and other core ARTNeT partners, including the United Nations Conference on Trade and Development (UNCTAD), the United Nations Development Programme (UNDP) and the World Trade Organization (WTO). The ESCAP Trade and Investment Division serves as the secretariat of the network and, as such, facilitates the conceptualization, implementation and delivery of ARTNeT activities in collaboration with members, partners and government officials involved in trade analysis and policy-making through their respective focal points. The research network now comprises 20 member institutions in 15 economies of the Asian and Pacific region.

This book includes nine chapters, most of which are based on empirical research. They contain both quantitative and qualitative analyses of liberalization efforts in the area of agricultural trade, which took place in parallel to negotiations on agricultural trade liberalization in the context of the Doha Development Agenda. The PTAs analysed in the book are from three subregions: South Asia, East Asia and South-East Asia. Therefore, this volume fills the void that currently exists in quantitative analysis of preferential agricultural trade liberalization in the Asian economies.

Furthermore, the publication adds value to the already rich, but separate, body of literature on preferential trade and trade in agricultural products. It provides an up-to-date, reliable account of preferential trade in Asia with respect to agriculture – one of the most important sectors for the majority of peoples in the developing countries of the region. By

using quantitative analysis, whenever data availability permitted, to assess the remaining protection in PTAs across the region or the extent of trade created, this study provides a solid basis for further work on tracking and assessing the performance of PTAs. The treatment of agriculture in those PTAs is also compared to its treatment under the multilateral trading system and/or national trade liberalization efforts. Non-tariff barriers still pose a significant obstacle, and an illustration of their adverse impact is given through case studies of two least developed countries (LDCs), Bangladesh and Cambodia.

An analysis of trade liberalization effects is not considered complete without also using a computable general equilibrium (CGE) model for quantitative analysis of impacts. Two chapters are related to this analytical approach. One chapter presents the results of quantification of potential gains from various bilateral and regional trade agreements. Another chapter critically assesses the methodological problems that are associated with the CGE models of the genre used for the quantifications described above.

The book also contains a review of agricultural reform in the largest Asian economy, China, with implications for its positioning in multilateral and preferential trade liberalization. A small but important step into the international political economy of agricultural protection is made in a chapter that considers possibilities for strategic intervention in agriculture trade for developing countries. Finally, policy recommendations are offered for negotiators of preferential trade arrangements as well as some guidance for further research.

No research ever published is perfect. Limited resources, data availability and expertise in some of the analytical areas resulted in some gaps in this study. The most obvious is the lack of welfare analysis at the community level as well as the gender-differentiated impact of trade liberalization implemented through the PTAs so far. These research themes remain high on a priority list for ARTNeT in a near future for two reasons: (a) to provide comprehensive assessments of trade liberalization processes: and (b) to take research capacity-building to a higher dimension, as this research requires not only primary data collection but also new research methods, some of which are being used for the first time, even in the most developed research environments.

Acronyms and abbreviations

ABB	Australian Barley Board
ACFTA	ASEAN-China Free Trade Area
ACP	African, Caribbean and Pacific group
ADB	Asian Development Bank
AFAS	ASEAN Framework Agreement on Services
AFTA	ASEAN Free Trade Area
AISP	ASEAN Integration System of Preferences
AMS	aggregate measure of support
ANZCERTA	Australia New Zealand Closer Economic Relations Trade Agreement
ANZSCEP	Singapore-New Zealand on a closer Economic Partnership Agreement
AoA	Agreement on Agriculture
APEC	Asia-Pacific Economic Cooperation
APTA	Asia-Pacific Trade Agreement
APTIAD	Asia Pacific Trade and Investment Agreements Database
ASEAN	Association of Southeast Asian Nations
ATI	agricultural tradeability index
BDCs	beneficiary developing countries
BIMSTEC	Bay of Bengal Initiative for Multi-Sectorial Technical and Economic Cooperation
BTA	bilateral trade agreement
CACM	Central American Common Market
CAFTA	China-ASEAN Free Trade Agreement
CDE	constant difference elasticity
CEPA	China-Hong Kong, China Closer Economic Partnership Agreement
CEPT	common effective preferential tariff
CES	constant elasticity of substitution
CGE	computable general equilibrium
CMLV	Cambodia, Myanmar, Lao People's Democratic Republic and Viet Nam
COMTRADE	UN Commodity Trade Statistics Database
CU	customs union
CWB	Canadian Wheat Board
DDA	Doha Development Agenda
DRS	domestic rate of substitution
DRT	domestic rate of transformation in production
EAEC	Eurasian Economic Community
EBA	Everything But Arms
ECOTA	Economic Cooperation Organization Trade Agreement
EFTA	European Free Trade Association

EHP	Early Harvest Programme
EPC	effective protection coefficient
ERDF	European Regional Development Fund
ERP	effective rate of protection
ESCAP	Economic and Social Commission for Asia and the Pacific
EU	European Union
FA	framework agreement
FAO	Food and Agriculture Organization
FRT	foreign rate of transformation
FTA	free trade agreement or free trade area
FTAs	free trade areas
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GCC	Gulf Cooperation Council
GDP	gross domestic product
GEL	general exceptions list
GSP	Generalized System of Preferences
HACCP	Hazard Analysis and Critical Control Point
HMT	harbor maintenance tax
HS	highly sensitive
HS	harmonized system
HTSUS	Harmonized Tariff Schedule of United States
IL	inclusion list
JSEPA	Singapore-Japan for a New Age Economic Partnership Agreement
KIEP	Korea Institute for International Economic Policy
KIET	Korea Institute for Industrial Economics and Trade
KITA	Korea International Trade Association
LDBDCs	Least Developed Beneficiary Developing Countries
LDCs	least developed countries
MERCOSUR	Mercado Comun del Sur
MFA	Multi-Fibre Arrangement
MFN	most favoured nation
MLI	member liberalization index
MSG	Melanesian Spearhead Group
NAC	nominal assistance coefficient
NAFTA	North American Free Trade Agreement
NRD	new rural development

NTBs	non-tariff barriers
NTMs	non-tariff measures
OECD	Organisation for Economic Co-operation and Development
PA	preferential agreement
PICTA	Pacific Islands Countries Trade Agreement
PIDS	Philippines Institute for Development Studies
PSE	producer' subsidy equivalent
PTAs	preferential trading agreements
RCA	revealed comparative advantage
RIS	Research and Information System for Non-Aligned Countries
RoO	rules of origin
ROW	rest of world
RTAs	regional trading agreements
RTR	relative tariff ratio
SAARC	South Asian Association for Regional Co-operation
SADC	South African Development Community
SAPTA	South Asia Preferential Trading Arrangement
SAPT	SAARC Preferential Trading Arrangement
SITC	Standard International Trade Classification
SL	sensitive list
SOEs	state-owned Enterprises
SPARTECA	South Pacific Regional Trade and Economic Co-operation Agreement
SPS	sanitary and phytosanitary
SPs	special products
SPS	sanitary and phytosanitary
SRTAs	subregional trade agreements
SSM	Special Safeguard Mechanism
STEs	state trading enterprises
TAFTA	Thailand-Australia Free Trade Agreement
TBT	technical barriers to trade
TEL	temporary exclusion list
TIFA	trade and investment framework agreement
TOT	terms of trade
TRAINS	Trade Analysis and Information System
TRI	trade restrictiveness index
TRQ	tariff rate quota
UNCTAD	United Nations Conference on Trade and Development
USCBP	United States Customs and Border Protection
USDA	United States Department of Agriculture

USSFTA	Singapore-United States Free Trade Agreement
VAT	value added tax
WAEMU	West African Economic and Monetary Union
WCO	World Customs Organization
WITS	World Integrated Trade Solution
WTO	World Trade Organization

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Preparing a book for publication is always a tedious and lengthy task. However, in this particular case, the physical separation of the authors, advisers and staff from the ESCAP/ARTNeT secretariat proved to be a catalyst in ensuring that the professional commitment of all concerned made this process a satisfying experience. The contributors are pleased with the degree to which the book conveys conceptual convergence while at the same time retaining their individual and sometimes diverse points of view. They wish to extend special thanks to Mr. Robert Oliver for his editorial efforts and to Ms. Tavitra Ruyaphorn and Ms. Praphaphorn Tamarpirat for formatting the manuscript. The contributors themselves, however, remain responsible for the content of this book and they welcome feedback from policymakers, scholars, students and interested readers.

The International Development Research Centre's support throughout the research phase and during the preparation of this book is gratefully acknowledged. This support proved to have been the factor that made an important difference in the effectiveness of research capacity-building in the trade arena. Research for one of the chapters was carried out with a grant of WTO and this support is also gratefully acknowledged. The ESCAP secretariat and ARTNeT look forward to further collaboration with IDRC and WTO as well as other partners.

I. TRENDS IN PREFERENTIAL TRADE LIBERALIZATION IN ASIA AND THE PACIFIC

By Mia Mikic

Introduction

The purpose of this chapter is twofold. First, the aim is to clarify the motivation for, and objective of the ARTNeT regional study on agriculture trade liberalization, and to lay out the plan of this publication. The second aim is to paint, with a rather broad brush, a picture of preferential trade in the region as a backdrop for a regionally more narrow analysis of preferential trade focused on agriculture goods.

As mentioned in the preface to this publication, ARTNeT research programmes have been discussed and endorsed by stakeholders comprising policy makers, researchers and representatives of civil society. In the first ARTNeT research programme, set up in October 2004 at the ARTNeT launch meeting for 2005, one of the two regional studies adopted was "Agricultural trade liberalization trends in Asia and the Pacific, and their implications for policy makers and negotiators". The objective of the study was ambitious. It set out to: (a) map and analyse existing trade arrangements in the region with respect to their coverage of agricultural products; and (b) explore the extent and timing of agricultural trade liberalization through the mapping of tariff cuts and the elimination of non-tariff barriers. The study also aimed at: (a) identifying the presence of safeguards and other contingency protection measures, technical barriers, export incentives and domestic support measures that were dealt with in those agreements; and (b) comparing the preferential liberalization approaches to the one set by the Agreement on Agriculture in the Uruguay Round and the current multilateral Round. Most importantly, however, the study was intended to be a contribution to trade-related research capacity-building in the region aimed at ensuring better-informed regional policy-making.

In terms of regional coverage, the study covers South Asia, East Asia/South-East Asia and China. Three factors influenced the decision to exclude Pacific island countries (PICs) despite the original title of the study:

(a) The lack of data for many of PICs including trade flows and tariffs, non-tariff barriers, and other instruments;

(b) The small number of reciprocal preferential trade agreements (PTAs) implemented among PICs; and

(c) Limited project funding.

The motivation behind this study is the interest of policy makers and researchers alike in gaining a better understanding of the treatment of agriculture in the PTAs of the

Asian region. They need to learn how agricultural liberalization in PTAs interacts with the ongoing agricultural trade negotiations in the World Trade Organization (WTO), in order to set negotiating priorities. There is additional interest in finding out if and how the differences in the design of PTAs, with respect to agriculture products, affect the liberalization path both of the actual agreements and at the global level.

Readers will realize that the above-listed objectives were not all met in full. In some cases, it was just not possible to obtain data for quantitative analysis while in other cases the desirable methodology of analysis could not have been adopted. From discussions in several consultative meetings and workshops in which the authors of individual papers had the opportunity to participate, it was also realized that a study carried out by local researchers of a linkage between agricultural trade liberalization and poverty would have been valued by all. This and other research questions, such as the gender-differentiated impact of agricultural trade liberalization or the linkage between sectoral trade liberalization and investment trends, are intended for future research by ARTNeT.

Readers will also notice that this book has not been extensively edited. While some effort has been made to use a common analytical framework and to standardize presentation, the book remains as a collection of self-standing contributions written about the common theme and sharing the same objectives. On the other hand, it is possible to read chapters randomly without missing the main objective of the study. Nevertheless, it is hoped that readers will find that the chapters converge conceptually.

This book contains nine chapters. This chapter continues by providing an overview of state of preferential trade in Asia and the Pacific. Chapters II and III focus on selected PTAs in South Asia and East Asia/South-East Asia, respectively, in exploring the state of agricultural trade liberalization. As far as possible, these chapters follow a common structure and methodology in order to ease the comparison between the two subregions. Chapter IV and V then demonstrate the use of computable general equilibrium (CGE) modelling for the scenarios mimicking the actual PTAs in the subregions of South Asia and East Asia/South-East Asia. Chapter IV presents the results of quantification of potential gains from various bilateral and regional trade agreements, defined as scenarios of liberalization. The quantifications take into account only agricultural tariff elimination, assuming that trade will fully and promptly respond to such elimination. Chapter V critically assesses this quantitative approach and, in more general terms, the family of so-called LINKAGE models with the main objective of making users of numerical results aware of the limitations of such an analysis.

Chapter VI goes through the main turning points in agricultural reform in China. It also analyses in detail the linkages between that reform and China's position in the current WTO negotiations as well as its priorities for preferential trade liberalization in agriculture. Chapter VII offers some explanations of why preferential trade agreements in agriculture might be a better policy for developing countries wishing to revitalize their agriculture sector, compared to the multilateral option that is unlikely to allow developing countries to "get" policy space for strategic intervention in agriculture. Chapter VIII uses case studies of Bangladesh and Cambodia to reflect on how significant non-tariff barriers and design in

rules of origin continue to be in trade by LDCs and developing countries in general. The book concludes with chapter IX, which summarizes the main points of each chapter and offers policy recommendations for negotiators of preferential trade arrangements. It also points to future policy research needs in the area of agricultural trade liberalization.

This chapter proceeds with analysis of preferential trade in the context of Asia and the Pacific. Section A identifies several stylized facts about the preferential trade in Asia and the Pacific. Section B explores regional trade agreements with respect to their commitment to trade liberalization in goods and other standard areas of cooperation. Section C briefly discusses some international political economy forces that explain why agricultural products are laggards in both multilateral and preferential trade liberalization. Section D completes the chapter with some concluding remarks.

Before continuing, it is necessary to discuss the taxonomy of PTAs used in this book. The preferential trade phenomenon has not only become complex, it also now exists under many different names. As discussed above, the idea of a multilateral trading system was simple – concessions were to be shared on an most favoured nation (MFN) basis by the members of the club, and only a few exceptions from this principle were envisaged. At that time, the practice of preferential trade recognized free trade areas, Customs Unions (CUs), and economic and political unions.[1] Theoretical literature also followed this path and taxonomy was developed that described an extension of integration from shallow agreements such as the free trade area, through intermediate such as the CU, to deep agreements such as the common market and economic/monetary union. The focus, which also reflected the spirit of GATT exceptions, was of course on deeper and regional (plurilateral) rather than bilateral agreements.

A. Stylized facts[2]

There are four clear, stylized facts about the Asian and Pacific approach to preferential trade arising from analysis of information in APTIAD:

1. Bilateral trade agreements (BTAs) are the preferred option. South-East Asian economies have signed and enforced BTAs more frequently than the South Asian economies. However, cross-continental BTAs grow equally fast.

2. The “noodle bowl” effect is worsening, as there is no standard or common template for the rules. The current multiple trade rules are often mismatching and conflicting.

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1 Excluding so-called preferential clubs based on colonial trade concessions.

2 An early version of this chapter was presented at the APO Study Meeting held in New Delhi in March 2007. The chapter relies mostly on the Asia-Pacific Trade and Investment Agreements Database (APTIAD) in sourcing data and information for analysis. APTIAD is available at www.unescap.org/tid/aptiad

3. Multiple memberships are easily tolerated.

4. There is only weak evidence that PTAs create new trade among the member countries. However, evidence of trade diversion for non-members is even weaker.

Each of these four facts is discussed and illustrated below.

1. The bilateral option

Figure I indicates that of the 87 agreements in force, in early 2007, 62 (71 per cent) are BTAs, while the country-bloc agreements and RTAs[3] comprise the rest. Of those BTAs, 77.5 per cent are between two economies in the region and 22.5 per cent are of so-called cross-continental scope. There are 11 agreements (12.6 per cent) between a country and a bloc, and 11 RTAs (12.6 per cent). Among country-bloc agreements, six (55 per cent) are with ASEAN and three with EFTA (27 per cent). While RTAs are greatly outnumbered by BTAs, they do have relatively large membership (on average, 8.8 economies).[4] Nine (82 per cent) comprise membership from ESCAP only, while two (18 per cent) include non-ESCAP members.[5]

Looking at the type of the agreements (which should be in compliance with the multilateral trading rules), in both the bilateral and regional categories, the majority are free trade agreements (FTAs) and framework agreements (FA). Among the 62 BTAs, 50 (80 per cent) are listed as FTAs and seven (11.3 per cent) as framework agreements. The rest include four preferential trading agreements (6 per cent) and one non-reciprocal agreement. In contrast, the 14 cross-continental BTAs include eight (57 per cent) FTAs, four (28.6 per cent) of FAs and two other agreements. In the category of country-bloc PTAs, the structure is very different with more than half being framework agreements (55 per cent), and rest made up of FTAs (36 per cent) and one CU (EC-Turkey). The results for RTAs show a combination of the previous two classes of agreements; one CU (EAEC) and four PTAs (in the category of "others"), four (36 per cent) FTAs and two FAs (18 per cent).

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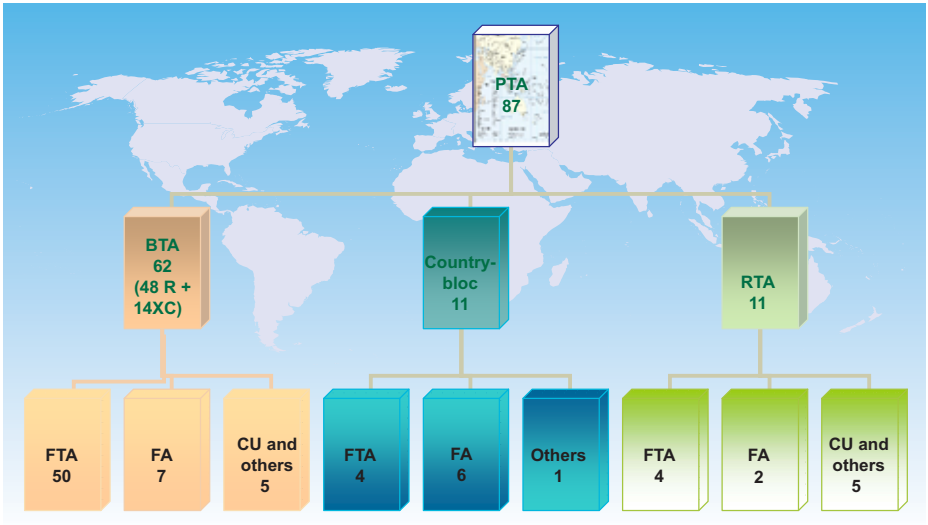
[3] Zhai (2006) commented that BTAs were preferred because of their lesser costs in terms of negotiation and enforcement efforts. While this might hold true for every individual member of BTAs, the resulting costs for all BTAs might easily be higher compared with all RTAs. Bonapace (oral communication) argues that this could be because of the lack of "peer pressure" as well as institutional framework that is often missing from BTAs but built in to many RTAs. Feridhanusetyawan (2005) held that the faster increase in BTAs than in RTAs (plurilateral agreements) contributed to a complexity of the picture, as many of those BTAs arose "within and across different regional agreements".

[4] The ASEAN FTA in Goods (AFTA) and in Services (AFAS) are counted as two RTAs; if only AFTA is counted, average membership is 9.7.

[5] Both are remnants of the former Union of Soviet Socialist Republics.

Figure I. Mapping of Asia-Pacific preferential trade



Source: APTIAD, February 2007.

Note: The number does not add up to 87, as three other agreements are not shown (one global and two country-plurilateral).

R = intraregional bilateral agreements.

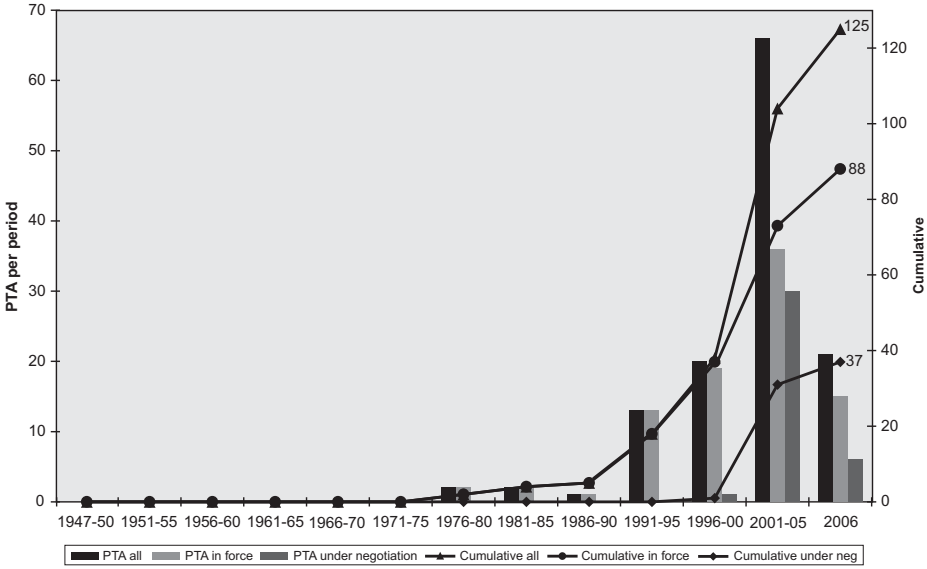
XC = cross-continental bilateral agreements.

It is important to note that the process of regional integration in Asia and the Pacific started in earnest in the 1990s, and more precisely during and after the Asian financial crisis in 1997 (figure II). Only one trade agreement dates back to 1975 – the Asia-Pacific Trade Agreement (APTA), formerly known as the "Bangkok Agreement". Other agreements predating the 1990s are the Australia-New Zealand Closer Economic Relations Trade Agreement (ANZCERTA, 1983) and the Association of South East Asian Nations (ASEAN, 1967); however, the latter grew more out of political rather than trade motivations.[6]

This chapter does not seek to explain in detail the proliferation of BTAs and RTAs in the region during the past decade, as there were different factors in play. Some strongly believe that regionalism flourished because governments realized that BTAs and RTAs allowed for a faster, more tailored approach to specific country needs and were more flexible in terms of implementation time and the inclusion of behind-border measures. Another explanation refers to the political and strategic motivations, which enhanced intraregional cooperation during the Asian financial crisis in 1997. Yet another factor associated with the spread of regionalism is the so-called "domino effect" that increases

[6] Feridhanusetyawan (2005, p. 14), stated "ASEAN was established during the Cold War to maintain peace and security in the region, and the formation of AFTA in 1992 kept ASEAN relevant when the Cold War ended."

Figure II. Asia and the Pacific – late bloomers in regionalism



Source: APTIAD, February 2007.
Note: 1971-1975 – the Bangkok Agreement, now APTA; 1981-1985 – ANZCERTA and SPARTECA.

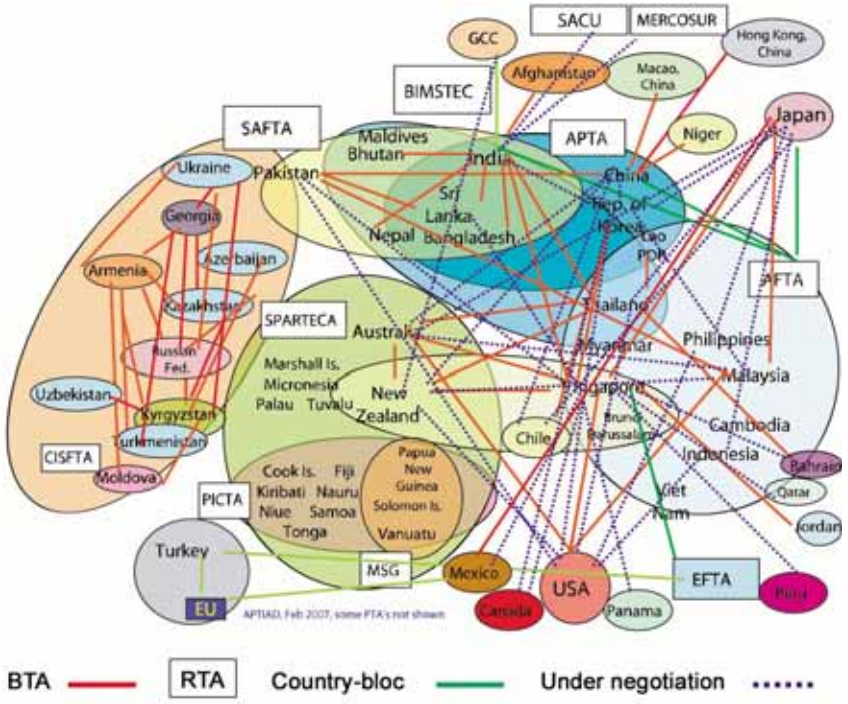
the incentive for countries to join existing agreements (the "follow the crowd" effect), and which explains why so many governments will engage in the process of BTA and RTA negotiations. Bonapace and Mikic (2005; 2007, forthcoming) have addressed these and other factors driving the proliferation of PTAs in the region during the past decade.

2. Multiple and potentially conflicting trade rules

The fast multiplication of agreements shown in figure II resulted in an increasing density of the "noodle bowl"[7] phenomenon associated with preferential trade. Figure III illustrates this "noodle bowl" view of the preferential trade routes. It shows the entanglement of bilateral and regional free trade and other types of agreements that are in force (areas and red lines) as well as those that are in various stages of negotiations (blue dotted lines). It provides a simple visual test that shows how density will increase as these agreements are signed and implemented. It is quite appropriate to describe this state of affairs as a "motley assortment" (Baldwin, 2006) that is working against trade creation rather than for it. With conflicting rules, these preferential agreements tend to fragment markets and increase trade costs, thus adversely affecting trade volumes as well as global and national welfare.

[7] The term "spaghetti bowl" is credited to Bhagwati (1992). It appears that Findlay and Pangestu (2001), introduced "noodles" to the RTA vocabulary. Cf. Mikic (2002).

Figure III. Adding more tangles to the "noodle bowl"



Source: Compiled by the author from APTIAD, September 2006.

3. Multiple memberships

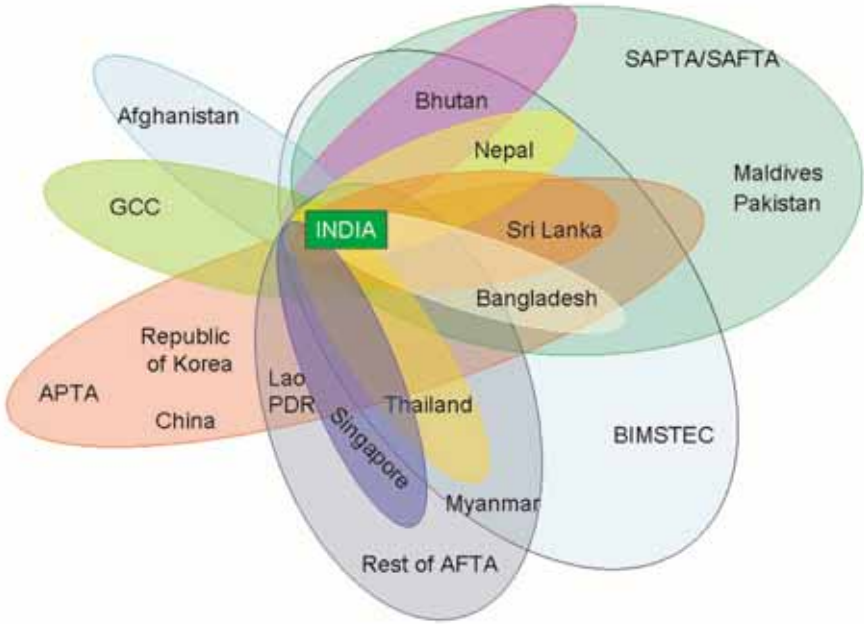
The previous analysis reveals an important asymmetry. From 1994 to 2006, the number of all agreements in force expanded from 10 to 87, a more than eightfold increase. Of the total 58 ESCAP regional members, the number of those involved in this proliferation of agreements increased from 41 to 50 during the same period, or 51 if the United States of America is included.[8] Only one ESCAP-cum-WTO member remains unattached to any of the trading blocs. In contrast, most ESCAP members, who are not WTO members, are members of at least one and up to 11 PTAs. The average number of agreements per ESCAP member is 5.6. This indicates multiple memberships and a significant overlap in the membership of agreements.

[8] Non-regional members are France, the Netherlands, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. Their agreements are not covered in the analysis unless signed with one or more regional members; e.g., the United States-Singapore FTA is included, while the United States-Jordan FTA is not. This leaves only three ESCAP members (Mongolia, Palau and Timor-Leste) and five ESCAP associate members (American Samoa, French Polynesia, Guam, New Caledonia and Northern Mariana Islands) not involved in preferential trade at present. Of those countries, only Mongolia is also a World Trade Organization member.

Overlapping memberships arise from parallel BTAs and RTAs for the same set of economies. One country ends up negotiating with another under several unrelated framework agreements. As an example of this option, consider the case of India and Sri Lanka, which have at least four trade-related agreements. The oldest is APTA, 1975, by type a preferential agreement, currently among six members. Other regional agreements include the BIMSTEC, 1997 and SAARC, 1985/SAPTA,[9] 1995 and SAFTA,[10] 2006 agreements among the same members. In addition, India and Sri Lanka signed a bilateral FTA in 2001.

It turns out that India leads in terms of overlapping memberships. This overlap occurs not only with Sri Lanka, as mentioned above, but also in the case of Thailand (BIMSTEC, AFTA-India and BTA). Furthermore, India has BTAs with almost all countries that are also members of SAPTA/SAFTA and BIMSTEC as well as with most members of APTA and some of AFTA (figure IV). The important question, which is not discussed in this publication, concerns the economic and political reasons for a country to negotiate parallel and seemingly non-related agreements that include the same subset of members.

Figure IV. Leader in multiple memberships



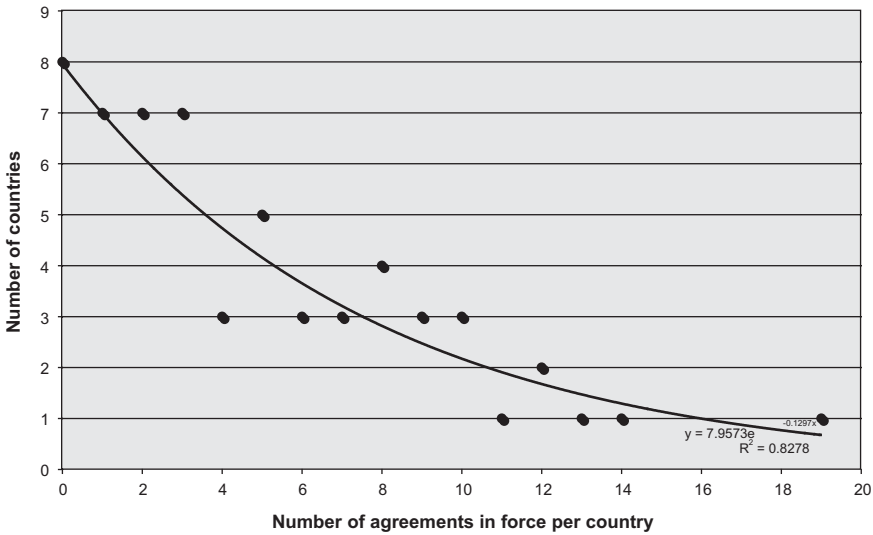
[9] South Asian Association for Regional Cooperation/South Asian Association for Regional Cooperation Preferential Trade Agreement.

[10] South Asian Free Trade Area.

Singapore is implementing the largest number of agreements,[11] but does not appear to be overlapping their members. A small degree of overlap appears in the case of deals with India (the Singapore-India BTA and AFTA-India agreement) and with New Zealand (one BTA and one plurilateral).

Multiple and overlapping membership is spread across this region. Only eight ESCAP members and associate members are not involved in the PTA process (Mongolia, Palau and Timor-Leste from among the ESCAP members, and American Samoa, French Polynesia, Guam, New Caledonia and Northern Mariana Islands from the associate members). It appears that signing and implementing between one and three agreements is either most beneficial, most popular or the easiest, as 21 countries implement from one to three agreements (seven in each category). Implementing more than three agreements is more demanding, and the number of countries managing to do so decreases sharply as the number of agreements increases (see the trend line in figure V). The maximum number of agreements per single country is implemented by Singapore (19), followed by Thailand (14), India (13), Malaysia (12) and Turkey (12). The average number of agreements in force per country, not counting those countries without any agreements, is 5.6. The average number of all agreements per country, again excluding the eight without agreements, is seven.

Figure V. ESCAP economies in multiple PTA memberships, 2006



Source: Compiled by the author from APTIAD, August 2006.

[11] Seven of these are bilateral, with various but mostly high-income economies (Australia, Japan, New Zealand, the Republic of Korea and the United States).

The issue, however, is that with multiple agreements one does not know which particular set of rules drives trade growth or which set might act as an obstacle. In the India-Sri Lanka case, while plausible to associate trade growth with the 2001 FTA, it is important to be able to identify any contribution by other agreements. The question should also be asked whether an even larger increase in trade could have been achieved with fewer agreements and, arguably, lower costs. Finally, one should not ignore the impact of unilateral liberalization processes in countries that are party to the agreement. Sri Lanka started to simplify and lighten its protective regime in late 1970s, and by the late 1980s unilateral trade liberalization was reflected in the sharp growth of Sri Lankan imports.

4. Trade agreements in search for trade?

The objectives of trade agreements, as set out in the legal documents and texts of the agreements, include expanding trade, promoting investment, developing economic integration, establishing regional cooperation and coordination, promoting human rights and democracy, and improving security (cf. Feridhanusetyawan, 2005). Newer agreements in particular are trying hard to broaden coverage of commitments from liberalization of merchandise trade to behind-the-border provisions in trade and other areas of cooperation. In many instances, as mentioned above, members have broad concessional aspirations; in order to reflect them, the members increasingly name agreements as “economic partnerships” or “closer economic relations” rather than FTAs.

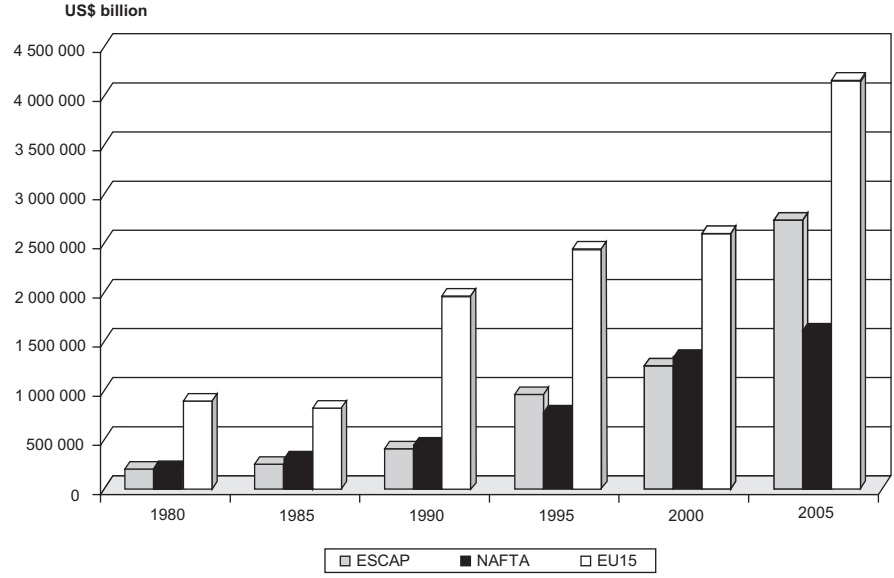
Notwithstanding the intent to liberalize beyond trade in goods, in many cases long transition/implementation periods are required for any real liberalization to take effect and be reflected in changed trade flows. It is not rare for the agreements to consist only of the agreement (often called a framework agreement) to start negotiations on cooperation or trade liberalization. Some anecdotal support exists for the claim that countries sometimes only intend to initiate regional cooperation without much commitment with regard to trade or even economic objectives. This practice introduces unnecessary trade discrimination to foster regional cooperation in areas that might not even require trade preferences, such as recognition of regulatory regimes, or the exchange of information and infrastructural provisions (cf. Schiff and Winters, 2003, p. 264). The cost of achieving such cooperation is then much higher than necessary (and sometimes even more than the benefits accrued through cooperation). Furthermore, it leads to “trade negotiation” fatigue that sometimes tends to be cured by reducing efforts in multilateral trade negotiations, which are perceived as more difficult.

This section provides some additional information on intra- and extraregional trade flows and trade dependence to facilitate a better understanding of the potential impacts of preferential trade agreements. The expectation of members is that PTAs will help boost mutual trade (of those products awarded [more] liberal trade treatment) over and above the growth of their total trade.

Total trade of ESCAP members has increased in absolute terms, and in 2005 accounted for almost 30 per cent of world exports and imports. The value of their intraregional trade also increased (figure VI) dramatically from 1980 to 2005 in absolute

terms. Starting with a slightly smaller value of intraregional trade than NAFTA in 1980, by 2005 the Asian and Pacific region had surpassed NAFTA and had closed the gap with the EU15 intraregional trade from 4/5 to 1/3. However, as a share in total world trade, this intraregional trade remained stagnant (table 1).

Figure VI. Growth of intraregional trade for selected regions



Source: Calculated by the author from COMTRADE data.

Nevertheless, the growth in intraregional trade can be combined with an indicator of trade dependence to tell us more about the "fortress building" attitude of trade agreements. As table 1 shows, total trade dependence,[12] which is a contribution of total trade to the region's collective gross domestic product, increased by coefficient 1.7 over this time. Similarly, an indicator showing only the contribution of extraregional trade to the region's gross domestic product grew by slightly less than the total trade dependence (coefficient of 1.64 over the same 10 years). Despite small differences, this points to an increase in the reliance on intraregional trade by ESCAP economies, giving support to a claim of the "appearance of the third mega trading bloc" to join the European Union and NAFTA. Thus, intraregional trade is growing in both the absolute and relative sense. However, the absence of a fall in trade with the rest of the world makes it difficult to identify this trend of growing intraregional trade as trade diversion. Furthermore, a reliable measure of a link between the increase in intraregional trade and the existence of preferential trade (that is,

[12] This indicator is often interpreted as "trade openness". See Bowen, Hollander and Viaene (1998, pp. 12-15).

BTAs and RTAs) is still lacking. In addition, does trade growth among members of the agreements precede or follow preferential agreements? These questions remain high on the list of future empirical research topics.[13]

Table 1. ESCAP trade performance basics

Group	1994	1996	1998	2000	2002	2004	2005[a]
Total trade as a percentage of world trade	26.8	22.7	23.4	26.3	26.3	28.2	29.4
Intraregional trade as a percentage of world trade	13.0	10.7	10.3	12.4	12.7	14.0	14.6
Total trade dependence	27.3	33.1	35.3	39.4	38.8	46.6	50.0
Extraregional trade dependence	14.0	14.1	17.2	19.3	20.0	23.5	25.1
Total number of BTAs[b] in force	6	17	22	26	30	46	73
Total number of RTAs in force	4	5	6	6	6	8	11
Members with membership in GATT/ WTO	20	22	24	25	26	29	30[c]
Regional members and associate members involved in PTAs	41	44	44	44	45	49	50

Source: Compiled by the author from APTIAD and WITS, April 2007.

Note: [a] GDP figures not available for 2005 and 2006, and trade figures refer to 2005.

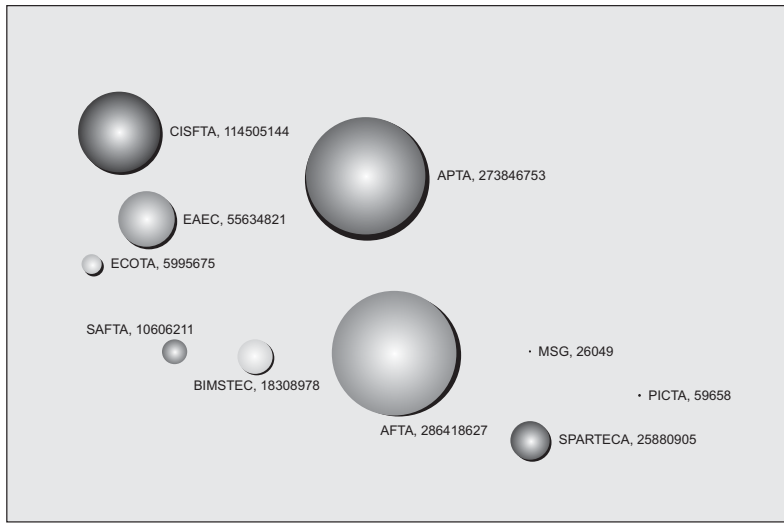
[b] Includes cross-continental BTAs.

[c] Viet Nam accession process finalized in 2006, but it formally acceded 30 days after completion of the internal ratification process, i.e., on 11 January 2007. Tonga's accession process was finalized in 2005, but ratification is pending.

Figure VIIa shows total trade among the members of each one of the 10 RTAs in the region in 2005, while figure VIIb shows those values for the years in which those RTAs were signed. In 2005, AFTA led with almost US$ 300 billion-worth of intra-bloc trade, but members of APTA were not far behind. It is, however, not possible to assert how much of this trade in any of the blocs is done under the preferential terms negotiated. (In that sense, the bubbles present the maxima.) Identification of the share of trade associated with the establishment of the preferential trade area is still one of the most tedious forms of empirical trade research (cf. Mayda and Steinberg, 2007; DeRosa, 2007).

[13] See Mayda and Steinberg (2007), on lack of evidence for across-the-board new trade creation in response to the Common Market for Eastern and Southern Africa, and DeRosa (2007), for slightly different arguments.

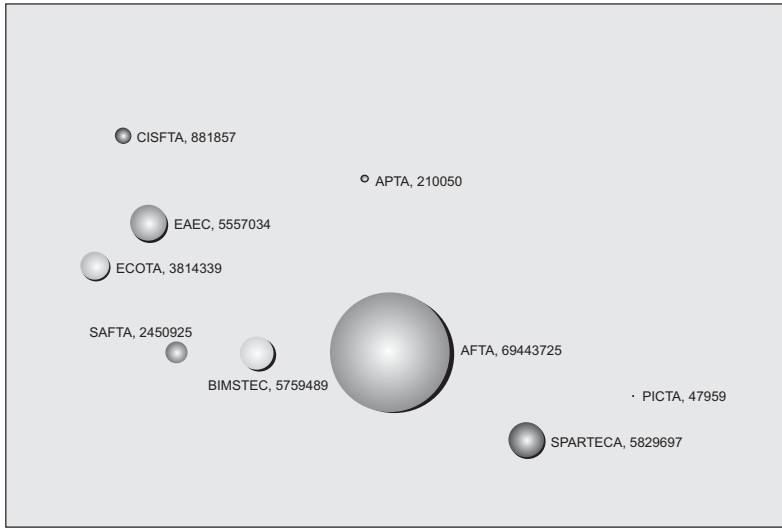
Figure VIIa. Value of intra-bloc trade in 2005



Source: Calculated by the author from COMTRADE and APTIAD.

Note: The size of the bubbles reflects the value of intraregional trade (in thousand US dollars) in 2005.

Figure VIIb. Value of intra-bloc trade in years of signature



Source: Calculated by the author from COMTRADE and APTIAD.

Note: The size of the bubbles reflects the value of intraregional trade (in thousand US dollars) in years when the RTAs were signed: AFTA 1992; APTA 1975; BIMSTEC 1997; CISFTA 1994; EAEC 1995; ECOTA 2003; MSG 1993; 2PICTA 2001; SAFTA 1993; and SPARTECA 1981.

In 2005, slightly less than 30 per cent of total ESCAP trade was associated with members of BTAs and RTAs (table 2); this amounted to less than 9 per cent of world trade.[14] While close to 60 per cent of PTA-linked intraregional trade was done by members of BTAs, more than half of that was linked to BTAs that had one extraregional member (e.g., the United States, EU/EFTA etc.). This could indicate that there is still a great deal of untapped potential for developing intraregional trade linkages among ESCAP members.

Table 2. Trade of BTAs and RTAs in force, 2005*

	Share in total ESCAP trade (%)	Share in total world trade (%)
BTAs (61)	**16.2**	**4.7**
– Regional members (33 BTAs)	6.6	1.9
– Other (28 BTAs)	9.6	2.8
RTAs (11)	**13.2**	**3.9**
– Regional members (6 RTAs)	10.2	3.0
Total preferential trade	**29.4**	**8.6**
Total ESCAP trade		**29.2**
Memorandum items:		
– Total ESCAP trade (US$ billion)	5 077	
– Total world trade (US$ billion)		17 405

Source: Computed using APTIAD and COMTRADE data, February 2007.

* Where 2005 trade data are unavailable, the most recent available year is used.

B. Liberalization patterns

There is a simple test for determining whether an agreement is efficient or "good" – it must create trade for the members of the agreement without diverting trade from the rest of the world (ROW).[15] The literature over time has also identified the conditions under which net trade creation would be more likely. The World Bank (2004) summarizes[16] these as:

[14] Note that table 1 shows intra-ESCAP trade as 12.9 per cent of world trade. Intra-ESCAP trade is larger than the sum of trade by members of BTA and RTA in implementation (which makes 8.6 per cent of world trade).

[15] This is, of course, a dramatic simplification. Trade creation and trade diversion should reflect changes in welfare that are sourced through the replacement of inefficient with more efficient production among the partners (trade creation) and the opposite in relation to ROW (trade diversion). As static measures of welfare change, they do not reflect all efficiency changes that could be arising from RTAs. Deriving general conclusions based on partial equilibrium analysis is problematic. The calculation of trade creation and trade diversion is complex and is not among the objectives of this publication.

[16] GATT Article XXIV stipulates some of these in the form of "WTO compliancy". In particular, see paragraph 5 (a), (b) and (c) as well as paragraph 8 (a) and (b). Similarly, GATS Article V paragraph 4.

- Number and type of members. More members with dissimilar economies is preferable to fewer homogenous economies;
- MFN tariffs faced by ROW. Lower MFN tariffs after the formation of an agreement will minimize trade diversion;
- Coverage in terms of measures, sectors and products. A negative list with as few exemptions as possible is preferred, and with reduction/elimination of all border trade barriers in a short period;
- Rules of origin. Flexible, transparent and liberal to allow for more trade creation;
- Measures to facilitate trade. Inclusion of areas and measures beyond good trade will facilitate cross-border competition and permit more trade creation.[17]

How do Asian-Pacific trade agreements measure up against those conditions? Section B comments on them in turn, starting with a summary of the conclusions of the (already discussed) first point.

1. Membership in regional trade agreements

As discussed in section A, most of the large number of trade agreements in force in the region are bilateral (71 per cent). The largest share of those agreements pair developing economies (or transition economies) together. Less then 30 per cent are between two "diverse economies", e.g., a developed and a developing economy. On the other hand, even though the region accounts for only a small share of RTAs, on average they comprise about nine members; this would go some way towards meeting the criteria for large memberships.

Taking into account the fact that some 40 agreements are in the process of negotiation just in this region, and that most of them include one or more of the major trading economies of the region (or world), completion of those negotiations might bring global efficiency improvement into line with this condition on numbers and types of members. This improvement would arise because an increasing number of countries able to generate trade creation would be leaving the "outsiders" camp and entering the club of "regional partners" (thus reducing the potential for trade diversion, *ceteris paribus*). However, this extension of membership cannot occur automatically because, typically, existent agreements are designed as "closed clubs". For example, most RTAs in the region remain closed for the current members or future members of the association underlying the trade agreement (ASEAN in case of AFTA, BIMSTEC in the case of the BIMSTEC FTA, ECO for ECOTA, SAARC for SAFTA and the South Pacific Forum for SPARTECA). Only two agreements allow for expansion through direct members in the trade agreement:

[17] Trade facilitation in regional PTAs is a theme of a separate paper and is therefore not discussed here (see IIBE&L, 2006). Competition policy and government procurement provisions in PTAs of ESCAP are also not discussed here.

(a) APTA, but only to the developing members of ESCAP; and (b) PICTA to any State or territory. Even with open access to membership, the efficiency-improving outcome would be more clear-cut in the case of parallel consolidation of these agreements under harmonized enforcement rules. Additionally, it is necessary that the agreements satisfy other conditions, particularly the extent of liberalization.

2. MFN tariff levels

Table 3 demonstrates trends in unweighted average applied tariff rates in most of the countries in the region. It is true that most countries show declining average tariff rates. This is a result of combined working of the following forces:

(a) Multilateral trade negotiation of the Uruguay Round and accession to WTO;

(b) Preferential trade liberalization;

(c) Unilateral trade liberalization efforts that many economies in the region have followed since the early 1990s.

Table 3. Trends in average applied tariff rates, 1996-2005[a] (unweighted, in per cent)

Code	Economy/group	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005 (est.)
1	Bangladesh		26.7	26.7	21.3	21.2	19.3	19.9	18.8	16.4	16.8
1	Bhutan	17.5	15.3	15.4	15.4	15.4	15.4	17.7		22.2	22.2
1	Cambodia	35.0		18.0	18.0	17.0	16.5	16.1	16.0	15.6	
1	India	37.0	34.2		32.4	32.7	30.9	28.3		28.3	16.0
1	Kyrgyz Republic					4.6	4.5	8.2	4.3		
1	Lao PDR	9.5			9.5	9.3	9.6			9.4	9.2
1	Mongolia		5.0			4.9	6.9	6.8	4.9	4.9	4.2
1	Myanmar	4.5	4.8	4.5	4.7	4.7	4.6	4.6	4.6	4.4	4.5
1	Nepal	14.8	17.3	21.7	14.2	14.2	14.7	14.6	14.8	14.8	14.7
1	Pakistan	41.7	46.6	45.6	24.1	23.6	20.2	17.2	16.8	16.2	14.3
1	Papua New Guinea	20.7	20.4		20.0	7.1	7.1	7.2	6.1	6.1	5.7
1	Solomon Islands[b]	22.7	45.0	24.0	24.0	22.7	22.7	22.7	22.2		
1	Tajikistan[b]		8.3	5.0	5.0	8.0	8.3	8.3	8.3	8.0	
1	Uzbekistan	21.0	21.0	29.0	29.0	29.0	10.4	10.6			
1	Viet Nam		13.0	13.0	15.6	15.1	15.0	14.3	13.8	13.6	13.1
2	Armenia			5.0	3.7	4.3	3.2	3.3	3.4	3.6	3.6
2	Azerbaijan			12.0	12.0	12.0	10.8	9.8	10.1		10.0
2	China	22.0	16.7	16.6	16.3	16.2	15.2	12.3	10.5	9.6	9.0
2	Fiji[b]	12.4	12.4	12.4	12.4	12.4	12.4	12.4	8.3	8.8	7.9
2	Georgia		10.0	10.0	9.9		9.7	9.8	7.6	7.4	
2	Indonesia	10.8			9.9	7.8	6.1	6.6	6.3	6.6	6.5
2	Iran, Islamic Rep. of		28.0	30.0	30.0	37.4	30.0	27.3	18.9	17.7	
2	Kazakhstan[b]	10.0	9.3	9.5	7.8	7.8	7.9	7.9			
2	Malaysia	8.4	8.9		8.2	8.0	7.5	7.5	7.4		7.5
2	Maldives	20.8		22.0	22.0	21.3	21.1	21.2	21.1	21.1	21.2
2	Philippines	14.0	12.7	10.4	9.5	7.1	6.9	5.3	4.5	5.5	5.4

Table 3 *(continued)*

Code	Economy/group	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005 (est.)
2	Russian Federation	11.2	14.0	13.9	12.6	11.1	10.7	10.3			10.0
2	Samoa[b]		18.0	18.0	12.0	12.0	12.0	12.0	12.0		
2	Sri Lanka		19.6	11.1	10.9	9.3	8.9	8.9	8.7	9.9	10.8
2	Thailand				16.9	16.4	14.4		13.5		9.9
2	Turkey	7.0	6.7		7.2	3.2	3.1	2.6	2.7		2.5
2	Turkmenistan		0.5	0.5	0.5	0.5	0.5	5.4	5.3		
2	Vanuatu		29.0	22.8	22.8	22.8	22.8	17.0	13.8		
3	Brunei Darussalam	3.1	3.1	3.1	3.1	3.1	3.1	3.0	2.9	3.1	3.1
3	Hong Kong, China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Macao, China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Singapore	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Australia	6.8	6.6	6.2	5.9	5.6	5.3	5.0	5.0	5.1	4.2
4	European Union	3.0	2.4	2.9	3.6	2.2	3.1	1.7	1.7	2.5	2.5
4	Japan	2.9	2.8	2.7	2.6	2.5	2.8	2.8	2.7	2.7	2.7
4	Korea, Rep. of	9.7	9.2	9.7	9.5	9.4	9.3	9.1	8.9	8.6	8.6
4	New Zealand	6.3	6.0	4.7	3.9	3.0	3.8	3.7	3.7	3.7	3.8
4	United States	4.3	4.3	4.3	3.7	3.6	3.5	3.7	3.3	3.1	3.0
	Memo: average										
1 to 2	Developing countries (142)	17.9	17.7	16.5	14.8	13.7	12.4	12.1	10.5	11.9	10.2
1	Low income (56)	22.4	21.5	20.3	17.9	15.3	13.7	14.0	11.9	13.3	12.1
2	Middle income (86)	13.0	14.3	13.9	12.5	12.3	11.3	10.6	9.6	10.0	8.7
3	High-income non-OECD (14)	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8
4	High-income OECD (10)	5.5	5.2	5.1	4.9	4.4	4.6	4.3	4.2	4.3	4.1

Source: Extracted from Francis K.T. Ng, 2006, *Data on Trade and Import Barriers*, World Bank (http://siteresources.worldbank.org/INTRES/Resources/tar2005.xls).

Note: [a] All tariff rates are based on unweighted averages for all goods in ad valorem rates, applied rates or MFN rates whichever data is available for a longer period. Tariff data are primarily based on the United Nations Conference on Trade and Development TRAINS database, with WTO IDB data used for filling gaps, where possible. Data for the 1980s are taken from other sources.

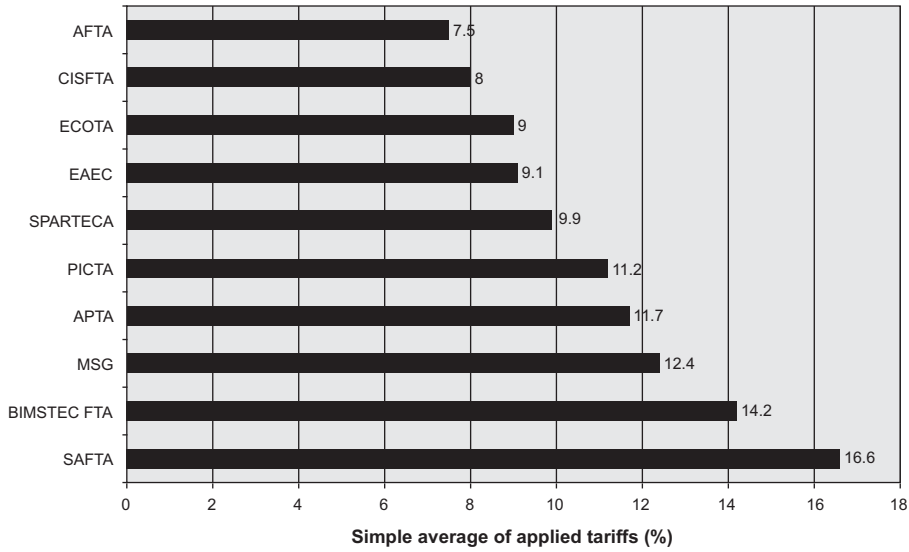
[b] Tariff data in these countries came from the IMF Global Monitoring Tariff file in 2004, and might include other duties or charges.

Country codes are based on the classifications by income in WDI 2006, where 1 = low income, 2 = middle income, 3 = high-income non-Organisation for Economic Co-operation and Development (OECD) countries, and 4 = high-income OECD countries.

With regard to MFN tariffs faced by ROW after the conclusion of the agreements, it is difficult to acquire exact and reliable data. The fact that among the regional RTAs there is only one partially functioning CU (EAEC) means there is no real threat from the creation of high common external tariffs. Figure VIII shows the level of average applied tariffs of 10 RTAs (AFAS not included) for 2005 calculated from table 3 or in the most recent year when 2005 information was unavailable (annex figure I shows individual countries in each of the 10 RTAs). This average ranges from 7.5 per cent for AFTA to 16.6 per cent for SAFTA. In fact, SAFTA is the only RTA in which all individual members' averages stand at

above 10 per cent, while in AFTA only Cambodia and Viet Nam have more than 10 per cent average applied tariffs. APTA, on average, has slightly higher protection than the RTAs taken together, mainly because of the relatively high averages of Bangladesh and India.

Figure VIII. Simple average of applied unweighted tariffs of individual countries grouped in RTAs (2005)



Source: Calculated by the author from data in table 3.

3. Approaches to tariff reductions in PTAs

How important is the contribution of preferential trade liberalization to the opening of a country? As noted above, declarative aspirations of all agreements are to transform trade among partners into duty-free trade. In many agreements, in fact, this is expressed as an ultimate goal; however, partners are taking many different routes to achieve this end. Table 4 summarizes the difference in approaches to tariff reduction in the enforced agreements that provide this information. A positive list approach is considered, in principle, less liberalizing and it consists of members agreeing to the products on the (positive) list whose tariffs will be reduced or eliminated. A negative list approach assumes a reduction/elimination of tariffs on all products except those that are included in the negative list. This approach is closer to the spirit of GATT, even though it may often include a long list of excluded products.

Another important factor is the determination of a base tariff rate as a benchmark for reduction. In most cases, the MFN-applied rates are used for this purpose (cf. Feridhanusetyawan, 2005, p. 16). In an effort to comply with WTO rules on regional agreements, most contain an intention to eliminate tariffs within what is considered a reasonable period. When an LDC is involved, it is provided either with longer transition periods (e.g., AFTA) or lesser or no reduction commitments (e.g., APTA). Another interesting feature, and which supports previous claims about "made-to-measure" agreements, refers to asymmetrical reciprocity in tariff reduction even when there is no LDC involved. Feridhanusetyawan (2005, p. 17) describes how, in the Singapore-United States FTA (which follows the "negative list approach"), the United States kept tariffs on about 8 per cent of products during the transition period of eight years while Singapore eliminated all tariffs immediately, binding them to zero. In the Singapore-Japan FTA (which follows a positive list approach), Singapore again reduced all tariffs to zero immediately while Japan committed to eliminating its tariffs gradually over a 10-year period.

Table 4. Tariff reduction approaches

PTAs	Positive list	Negative list
All in force with information available	31	33
BTA	22	25
Cross-continental plurilateral	0	1
Country-bloc	3	2
RTA	5	5
Global	1	0
FTA	20	29
Framework agreement	4	1
Preferential trading arrangement	6	2
CU	0	1
Non-reciprocal arrangement	1	0

Source: Compiled by the author from APTIAD, February 2007.

4. Rules of origin

The current proliferation of agreements has spun a complex rules-of-origin web (table 5). In addition to each agreement having its own rules of origin, a bewildering array of product-specific rules of origin is emerging. Adopting the less restrictive rules of origin could result in significant trade deflection and redundancy of a trade agreement, while adopting the most restrictive rules of origin may result in no trade taking place under the agreement. Several chances have been missed, at both the WTO and regional levels, to bring some uniformity to the formulation of preferential rules of origin. GATT Article XXIV, quite remarkably, is silent on the use of preferential rules of origin. Should rules of origin not be viewed just as other regulations of commerce, in that they should not raise barriers

to third countries any higher than the level existing prior to the formation of the PTA? The most that is said is embodied in a non-binding common declaration on principles.

This increases the urgency for establishing an overarching, region-wide, common framework of principles, guidelines and procedures to which BTAs and RTAs would be anchored. Notwithstanding its non-binding nature, the point of departure should be the WTO common declaration. Ongoing work, notably in APEC, and other useful trade and development elements found in other agreements should be built upon with this need in mind. For example, APTA recently agreed to common rules of origin (representing a wide spectrum of industrial development among the members) that are relatively simple, general and liberal, that is:

(a) A flat rate of a minimum 45 per cent of local value content (35 per cent for least developed countries) in bilateral rules of origin; and

(b) At least 60 per cent (50 per cent for least developed countries) of regional content with full cumulation (cf. Baldwin, 2006).

Table 5. Rules of origin provisions in selected trade agreements

PTA	Change in tariff class.	Specific man. process	Local value addition	Cumulation
BTAs				
ASEAN-China	Yes	...	40%	Full
ASEAN-Republic of Korea	Yes	...	40%	Full
Australia-New Zealand	...	...	50%	Bilateral
India-Thailand	Yes (or VA) 4, 6 digit level product specific	...	20-40% product specific F.O.B. value	Bilateral
India-Sri Lanka	Yes (or VA) 4 digit level	...	35% F.O.B. value	Bilateral
Japan-Mexico	...	No specific process required	50% with some exception F.O.B value	Bilateral
Republic of Korea-Chile	...	No specific process required	45% build down method calculation, 30% build up method calculation	Bilateral
Malaysia-Japan	Yes (product specific)	...	40% (product specific)	Bilateral
Singapore-Republic of Korea	Yes	...	45-55%	Bilateral
Singapore-Japan	Yes (or VA) 4 digit level	Yes	60% F.O.B. value	Bilateral

Table 5 *(continued)*

PTA	Change in tariff class	Specific man. process	Local value addition	Comulation
Singapore-USA	Yes (or VA) 2, 4, 6 digit level	Yes	30-60% product specific	Bilateral
Singapore-New Zealand	...	...	40% Factory cost	Bilateral
Singapore-Australia	...	...	30-50% product specific factory costs	Bilateral
Thailand-Australia	Yes (and/or VA) 4, 6 digit level product specific	Yes	40-55% product specific F.O.B. value	Bilateral
Thailand-New Zealand	Yes (product specific)	Yes		Bilateral
BTAs				
Asia-Pacific Trade Agreement	No tariff beading change necessary	No specific process required	45% (35% for LDC)	Full
ASEAN Free Trade Agreement	No tariff beading change necessary	No specific process specified	40% F.O.B. value	Full
Trans-Pacific Strategic Economic Partnership TRANSPACSEP	Yes	Yes	45-55%	Diagonal (bilateral)

Source: Compiled from table 2 in Bonapace and Mikic (2006), and APTIAD.

Consolidation of multiple membership agreements around more liberal rules of origin will serve as a tool for diminishing noodle bowl-related costs of trading under preferential regimes. One such example is provided by the recent consolidation of bilateral trade agreements among the southern European countries and a replacement by the common rules as part of an amended Central European Free Trade Agreement (CEFTA) deal. The new CEFTA consolidates 32 bilateral free trade agreements into a single regional trade agreement. The free trade area will be established for a transitional period ending, at the latest, on 31 December 2010. The new consolidated agreement replaces the network (the “spaghetti bowl”) of bilateral free trade agreements in order to improve conditions for promoting trade and investment by means of fair, clear, stable and predictable rules.

The agreement consolidates and modernizes the region’s “rule book” on trade, and includes modern trade provisions on issues such as competition, government procurement and protection of intellectual property. It facilitates the convergence of relevant trade-related rules, notably with regard to industrial and sanitary-phytosanitary rules. A simplified single system of rules of origin (and other rules) makes it easier to trade within the region. Increased trade is necessary to promote growth, job creation and

a reduction in youth unemployment. It is the foundation for stability and peace. Such harmonization and simplification of rules of origin in the subregions of Asia could contribute to a deepening of integration, as the rules are associated with an increase in "seamless production".

5. Going beyond the goods trade[18]

Many of the newer initiatives declare the intention to go well beyond the reduction/elimination of tariffs and NTBs, including anti-dumping and safeguards, harmonization of competition policies and standards, and customs. However, a large number still just remain a collection of aspirations towards liberalization that tend to be associated with a longer negotiation process. In addition, despite these intentions to go deeper than trade integration, there is only an occasional mention of the formation of a CU or a common market in the Asia-Pacific region.[19]

Furthermore, while in the context of multilateral liberalization, a number of countries strongly argue for more freedom in movements of labour (referring to Mode 4 liberalization) when it comes to BTAs and RTAs, as only few cover this area. A comparison of BTAs/RTAs of this region with existing deals in the Americas also illustrates a type of reluctance to negotiate all-inclusive comprehensive agreements. Instead, trade agreements are often accompanied by separate agreements on services, investments, intellectual property protection, customs procedures etc. Most of the new agreements cover trade in services (but pre-General Agreement on Trade in Services [GATS] agreements still have separate agreements on trade in services, such as the ASEAN FAS).

Most of the newer agreements could be described as WTO-plus agreements as they extend concessionary coverage beyond multilaterally agreed disciplines – such as government procurement, competition policy and the environment. This is true for trade agreements between developed economies, and between developed and developing economies (Lesher and Miroudot, 2006). It is important to note that most agreements mention a number of WTO-plus sectors when describing the objectives of the agreement (typically in the preamble of the agreement text). However, a significant number of agreements only include a statement of intention to negotiate liberalization in certain areas. These agreements have been excluded from the scope of this study because they do not count for "substantive commitments".

The overview that is provided in figure IX only shows whether a concessionary commitment has been made in particular sectors or not. In order to provide a better assessment of the beyond-the-goods commitments, a more detailed analysis of the legal texts of the agreements is required. The most frequently covered area is that of investments

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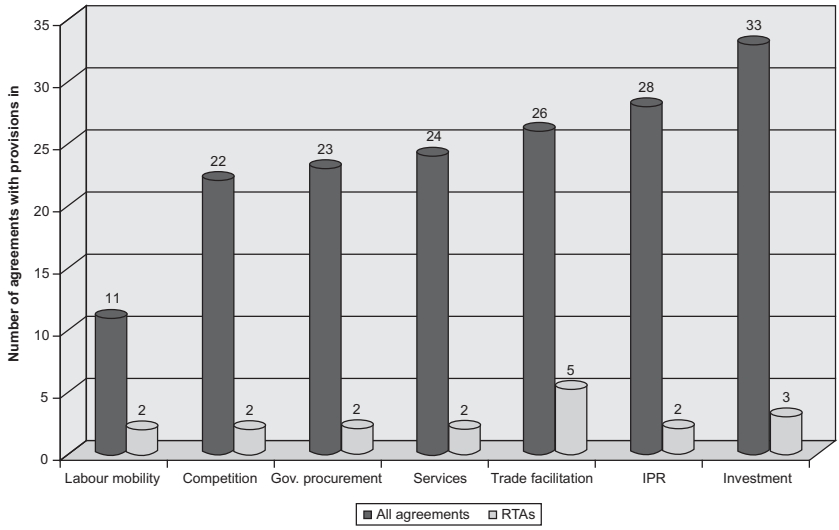
[18] Some of the agreements do not have legal texts, either publicly available in English or at all, and therefore might not have been captured properly in counting the sectors covered.

[19] One such example is that of the already cited "single economic market" of Australia and New Zealand. At the zenith of the 1997 Asian financial crisis, there were also calls for the establishment of a currency union. They were later merged into proposals for an East Asian Community.

provisions followed by IPRs and trade facilitation. Other areas that also receive some coverage are government procurement, competition policies and labour mobility. Services are covered only in 24 agreements, including separate agreements for some parties. Table 6 provides a summary of treatments of four sectors (investment, IPR, labour mobility and services) with a view to differentiating between BTAs and other agreements in terms of the coverage of these sectors.

Figure IX. Overview of sectoral coverage by PTAs



Source: Compiled by the author from APTIAD, February 2007.

In terms of scope of agreement, it is obvious that the "beyond-the-goods" sectors are captured by agreements that are bilateral, i.e., between two countries and between an established bloc and a country. It is mostly FTAs that venture beyond goods liberalization, except in investment where FAs feature, too. It also appears that BTAs-FTAs are notified to WTO faster than other agreements, contributing towards transparency of trading rules at the global level.[20]

C. Preferential trade and agriculture

With regard to the coverage of goods liberalization, available empirical literature shows that most of the agreements focus on reducing or eliminating tariffs and other barriers to industrial goods or manufactures. In contrast, agricultural products tend to be included in the exemptions of the negative lists or excluded from the positive lists of tariff

[20] For some comments on the content of provisions on these sectors, see Mikic (2007).

Table 6. Summary of treatments of selected sectors in preferential trade agreements in Asia and the Pacific

Intellectual property protection						
	Total	Type of agreement				Notified to WTO
		FTA	FA	CU	Other	
BTA	19 [a]	16 (7)				17 (7)
Country-bloc	6 [b]		2	(1)	–	5 (3)
RTA	2	1	–	–	1	2
Other	1	1	–	–	–	–
Total	**28 (9)**	**21 (8)**	**3**	**(1)**	**3**	**24 (10)**
Investment						
	Total	Type of agreement				Notified to WTO
		FTA	FA	CU	Other	
BTA	23 [c]	17 (4)	5	–	1	17 (4)
Country-bloc	6	2	4	–	–	3
RTA	3	2	1	–	–	1
Other	1		1	–	–	–
Total	**33 [a] (4)**	**21 (4)**	**11**	**–**	**1**	**21 (4)**
Mobility of labour						
	Total	Type of agreement				Notified to WTO
		FTA	FA	CU	Other	
BTA	8	7	1	–	–	7
Country-bloc	1	–	1	–	–	–
RTA	2	1	1	–	–	–
Other	1	1	–	–	–	–
Total	**12**	**9**	**3**	**–**	**–**	**7**
Services						
	Total	Type of agreement				Notified to WTO
		FTA	FA	CU	Other	
BTA	18	17	1	–	–	14
Country-bloc	3	2	1	–	–	3
RTA	2	–	2	–	–	–
Other	1	1	–	–	–	–
Total	**24**	**20**	**4**	**–**	**–**	**17**

Source: APTIAD and annex tables 2-5 in Mikic, 2007.

Note: Figures in parentheses are the number of agreements involving Turkey.

[a] Includes seven BTAs between Turkey and Bosnia and Herzegovina, Bulgaria, Croatia, Former Yugoslav Republic of Macedonia, Israel, Romania and Tunis.

[b] Includes one agreement between Turkey and EFTA, and one between Turkey and the European Union.

[c] Includes four BTAs between Turkey and Bulgaria, Former Yugoslav Republic of Macedonia, Romania and Tunis.

reductions.[21, 22] Other chapters in this publication deal with preferential trade liberalization in agricultural products in great detail. As an introduction to these chapters, some views are offered here on why there is asymmetry between agricultural and industrial goods coverage in PTAs. The list here is not exhaustive and in the chapters that follow, these and some other important reasons are discussed in greater detail.

Table 7. Leading forces influencing the degree of agricultural trade liberalization

Forces against liberalization	Forces for liberalization
• Intense lobbying by agricultural interest groups • The argument for food security • Quality standards and food safety • Intrinsic characteristics of agriculture • Agricultural non-trade concerns • Food dependence (net food importers) • Preferential trade agreements	• The Uruguay Round Agreement on Agriculture and the Cairns Group • Agricultural policy inconsistencies in the developed world • New domestic pressures • Growing international pressures • Internationalization of agribusiness corporations • International migration of farmers

Source: Jank, Fuchsloch and Kutaes (2002).

The five reasons why agriculture does not feature prominently on the agenda for full and/or quick liberalization through PTAs are that:

(a) Agriculture was excluded from the multilateral trade liberalization efforts until the Uruguay Round, leaving space for protectionist policies in this sector, which is one of the most supported sectors in many developed economies. This combination of policies earned the sector the attribute of being the "most distorted" in the world economy. Obviously, the removal of trade barriers and domestic support in such circumstances is not a simple matter. The task is complicated equally by the influence of vested interests, and a need for a coherent set of policy measures and financial resources to provide corrective support during the adjustment period, which could extend over a decade;

(b) Agriculture produces food that is considered indispensable to human life, thus giving rise to concern over food safety and security. These issues are easier to include in multilateral negotiations with more players (and coalitions) and more possibilities for *quid pro quo* than in similar negotiations with fewer

[21] Organisation for Economic Co-operation and Development (2005). Samaratunga and others (2006) and chapter II of this book and Pasadilla (2006) and chapter III of this book report similar findings for the agreements they analysed.

[22] For the purposes of international trade statistics, agriculture is defined as chapters 0-24 of the two-digit HS classification.

members, particularly when the negotiations are among those with similar interests in this area;

(c) Agriculture appears to offer more fertile ground than other sectors for quantitative and export barriers as well as sanitary and phytosanitary (SPS) barriers and standard IPRs (that is, geographic indicators). Historical evidence shows that these issues are easier to deal with at the global or multilateral level than at the regional level;

(d) Continuous support and protection of agriculture in developed economies has been justified by the so-called "multifunctionality" argument of agriculture. The sector is also often linked to environmental quality. It is easy to see that when two countries with same "defensive" approach in relation to multifunctionality negotiate a bilateral agreement, the scope for liberalization in agriculture will remain narrower than in negotiations at the multilateral level among countries with diverse interests in this area;

(e) Last, but far from least relevant, in many developing countries, agriculture is still a very important, if not the most important sector of the economy in fighting poverty. In many developing countries, agriculture provides opportunities for people to grow their own food and to exchange surpluses in informal transactions without being registered as part of an official economy (e.g., in employment or tax revenue records). For example, while agriculture provided paid employment in India for only 5 per cent of the labour force during 2004, its rural population forms the largest part of the total population. This means the sector is instrumental in ensuring rural development and provision of livelihood security. When it comes to the negotiation of preferential liberalization, which often embraces "made to measure" liberalization, this sector (is more likely than others) will be granted longer transitional periods, lesser tariff cuts and other exemptions in order for it to become a vehicle for rural development.

In developing this last point further, it would appear that preferential trade liberalization is more in line with the objectives of strategic intervention in agricultural trade than is multilateral liberalization. As argued by Dhar (2007) (see also chapter VII of this book) and literature cited therein, concern over food security, livelihoods and rural development in developing countries can be responded to by adopting the twin instruments of Special Products (SP) and the Special Safeguard Mechanism (SSM) as a variant of a strategic agricultural trade policy. The goal of this policy is primarily to secure food and safeguard livelihoods rather than create trade. Judging by the difficulties surrounding multilateral negotiations on these points as well as the comparatively easier introduction of SP and SSM into preferential trade agreements (cf. Organisation for Economic Co-operation and Development, 2005, pp. 16-17), PTAs ought to be ranked superior to multilateral liberalization in delivering this particular goal. However, further empirical research is desirable in order to shed more light on the welfare-improving effects of this particular strategic approach.

D. Conclusions

This chapter clarifies what types of preferential trade agreements are emerging in Asia and the Pacific, and it establishes the fact that they vary widely in motivation, form, coverage and content. It finds that PTAs in Asia and the Pacific leave much to be desired in terms of meeting established criteria for "best practice" or model agreements. Bilateral agreements are much preferred to plurilateral or regional ones, while "free" trade areas/ agreements are the most frequent form. However, in most cases, they push achievement of "free" trade for several years in the future. Increasingly, countries are opting for a partnership or framework agreement – in principle, to signal that either they mean much more than trade integration or that they really do not mean serious trade integration, but are using the format to put together a framework of cooperation in several (non-trade-related) areas. More often, the latter is the case. This probably explains to some degree why a number of countries sign multiple agreements with the same partners.

Analysis has also discovered a reluctance to commit to full and quick liberalization in merchandise trade and to expose "other than goods" trade areas (including WTO-plus) to preferential liberalization. The coverage and extent of agricultural products in PTAs is mostly unsatisfactory from the WTO compliance and welfare-increasing perspectives. A necessary next step in research is to establish conceptual frameworks for the consolidation of multiple PTAs, and to determine empirically if and by how much such consolidation of existing preferential deals will improve welfare and reduce poverty compared with the current situation.

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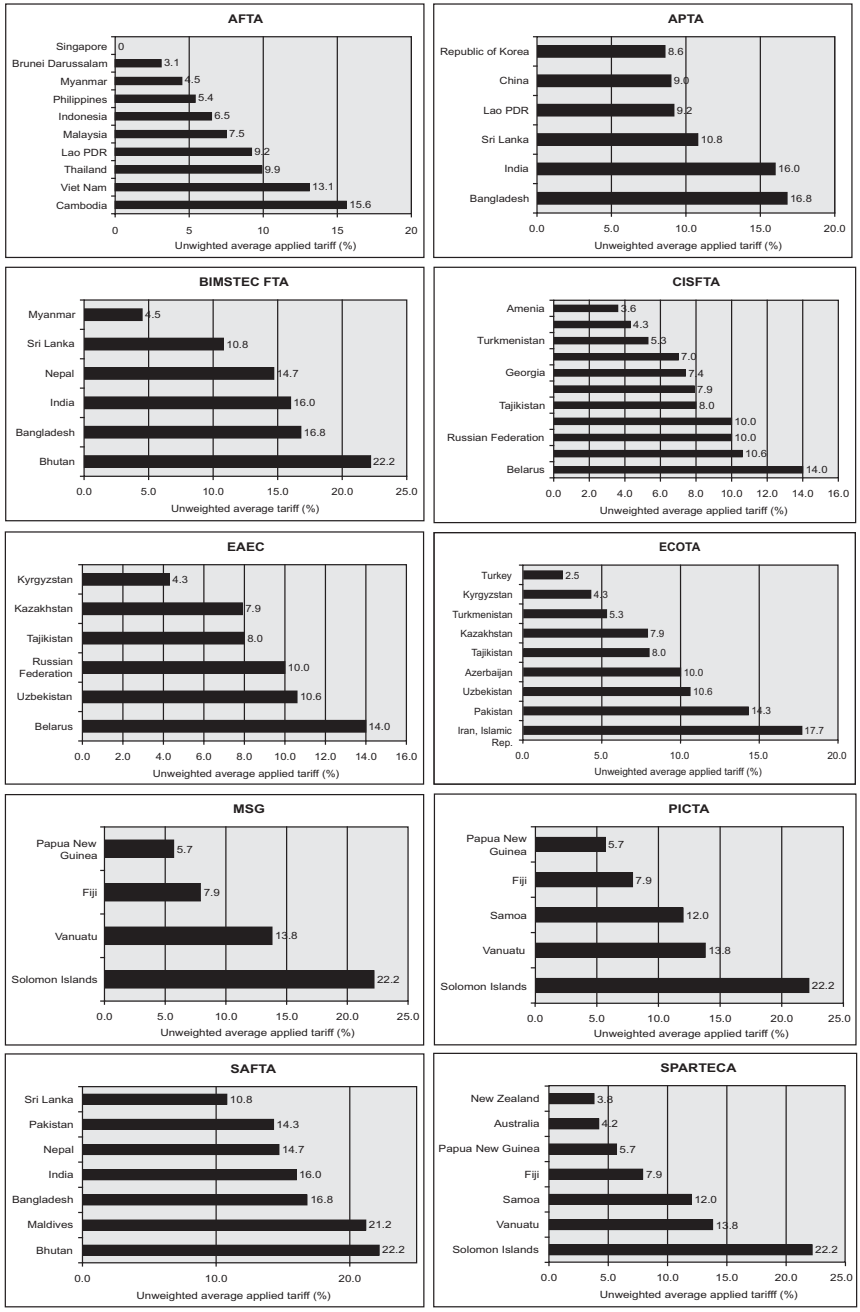
Annex

Annex figure I. Unweighted average applied tariffs of members in RTAs, 2005



Annex table 1. Comparison of rules of origin applicable to trade between India and Sri Lanka*

FTA between India and Sri Lanka	APTA	AFTA
Determination of origin of not wholly obtained products		
Article 7.a …products worked on or processed as a result of which the total value of the materials, part or produce originating from countries other than Contracting Parties or of undetermined origin used does not exceed **65 per cent** of the f.o.b. value, and the process of manufacture is performed within the territory of the exporting Contracting Party.	Rule 3(a) …products worked on or processes as a result of which the total value of the materials, parts or produce originating from non-participating States or of undetermined origin used does not exceed **55 per cent** of the f.o.b. value of the products produced or obtained, and the final process of manufacture is performed within the territory of the exporting participating State.	Rule 8(a) (ii) …products worked on or processed as a result of which the total value of the materials, parts or produce originating from other countries or of undermined origin used does not exceed **60 per cent** of the f.o.b. value of the products produced or obtained, and the final process of manufacture is performed within the territory of the exporting Contracting State (**70 per cent** for LDC and **65 per cent** for Sri Lanka).
Article 7.b Non-originating materials shall be considered to be sufficiently worked or processed when the product obtained is classified in a heading, at the four-digit level, of the HCDCS, different from those in which all the non-originating materials used in its manufacture are classified.	Rule 3(c) Formula: $\frac{Value_M + Value_O}{f.o.b.\ price} \times 100 \leq 55\%$ Where M = imported non-originating materials, parts or produce; and O = undetermined origin materials, parts or produce (**65 per cent** for LDC).	Rule 8(a) (i) The final product is classified in a heading at the four-digit level of the HCDCS differently from those in which all the non-originating materials used in its manufacture are classified.
Article 7.e The value of the non-originating materials, parts or produce shall be: **i.** The c.i.f. value at the time of importation of the materials, parts or produce where this can be proven; or **ii.** The earliest ascertainable price paid for the materials, parts or produce of	Rule 3(d) The value of the non-originating materials, parts or produce shall be: **i.** The c.i.f. value at the time of importation …where this can be proven; or **ii.** The earliest ascertainable price paid for…in the territory of the participating State where the working or processing takes place.	Rule 11(a): The value of the non-originating materials, parts or produce shall be: **i.** The c.i.f. value at the time of importation of the materials, parts or produce where this can be proven; or **ii.** The earliest ascertainable price paid for the materials, parts or produce of

Annex table 1 ***(continued)***

FTA between India and Sri Lanka	APTA	AFTA
undetermined origin in the territory of the Contracting Parties where the working or processing takes place.		undetermined origin in the territory of the Contracting States where the working or processing takes place.
Cumulation		
Article 8 The value addition in the territory of the exporting Contracting Party shall not be less than **25 per cent** of the f.o.b. value of the product under export, and aggregate value addition in territory of the Contracting Parties is not less than **35 per cent** of the f.o.b. value of the product under export.	Rule 4 The aggregate content originating in the territory of the participating States is not less than **60 per cent** of its f.o.b. value (**50 per cent** for the LDC).	Rule 9 The aggregate content (value of such inputs plus domestic value addition in further manufacture) is not less than **50 per cent** of the f.o.b. value; The domestic value contents (value of inputs originating in the exporting Contracting State plus domestic value addition in further manufacture in the exporting Contracting State) is not less than **20 per cent** of the f.o.b. value; And the final product satisfies the condition of change in classification at the four-digit level CTH.

Source: Compiled from respective rules of origin of each agreement downloadable from APTIAD.

* While these two countries are also members of BIMSTEC (other members include Bangladesh, Bhutan, Myanmar, Nepal and Thailand), there is no electronically accessible legal text of that agreement; furthermore, rules of origin have yet to be negotiated so they could not be included in the table.

II. MAPPING AND ANALYSIS OF THE SOUTH ASIAN AGRICULTURAL TRADE LIBERALIZATION EFFORTS

By Parakrama Samaratunga, Kamal Karunagoda and Manoj Thibbotuwawa

Introduction

The South Asian Economies (SAEs), comprising Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, represent 22 per cent of world's population but only account for just over 1 per cent of world trade. In 2003, agricultural trade in the SAEs amounted to US$ 22 billion and accounted for approximately 4 per cent of global agricultural trade and 23 per cent of the regional trade. During the 1970s, SAEs had highly protected trade regimes supported by high tariffs, non-tariff barriers (NTBs) and stringent controls on exchange. The rationale for such protective policies was safeguarding domestic industries, improving the terms of trade, raising revenue, altering the income distribution and raising nutritional levels.

During the 1980s, the hitherto inward-looking policies of the SAEs made a marked shift towards outward-looking policies. Economic policies were aimed at export-led industrialization as a means of achieving rapid economic growth. Moreover, the SAEs by then had obtained memberships of various international organizations, and a range of reforms was implemented to meet international obligations. The exchange rate regimes of many SAEs changed from fixed to a managed float or free float, and the restrictions on current accounts and capital accounts were substantially reduced. The trade policy changes emphasized fewer trade restrictions and brought down tariff levels to a great extent in some SAEs, especially in the case of Sri Lanka, and in others to some extent.

During the late 1970s in Sri Lanka, and in the late 1990s in other SAEs, the tariff structures were simplified and the number of tariff bands was reduced. The changes in the SAE tariff structures and exchange rate regimes as well as relaxation of payment restrictions during the 1990s show that SAEs have moved towards greater openness in their trade.

All the SAEs, except Bhutan, are members of the World Trade Organization (WTO); under this multilateral trade agreement, the SAEs' bound agricultural tariffs are at considerably higher rates. During the first 10 years (1995-2004) after the establishment of WTO, the involvement of SAEs in regional trading arrangements rapidly expanded (table 1). The SAEs established the South Asian Association for Regional Cooperation (SAARC) in 1985. In 1993, SAARC established regional cooperation in trade and initiated the South Asian Preferential Trade Agreement (SAPTA). The SAEs envisage greater economic cooperation within member countries by establishing a free trade area (SAFTA) by 2010, a Custom Union by 2015 and economic union by 2020. The SAEs have also

formed bilateral free trade agreements, i.e., India-Sri Lanka, India-Nepal and Pakistan-Sri Lanka BTAs. Regional economic cooperation has been fostered further with interregional agreements such as the Asia-Pacific Trade Agreement (APTA), Bay of Bengal Initiative for Multi-Sectorial Technical and Economic Cooperation (BIMSTEC), India-Thailand and India-ASEAN framework agreements and the Indian Ocean Rim Association for Regional Co-operation (IORA-RC).

Table 1. Preferential trading arrangements of South Asian countries

Country	RTA	BTA (FTA/EPA)[a]	Framework agreement[b]	Proposed[c]
Bangladesh	APTA, 1976 SAPTA, 1995 BIMSTEC, 1997		Bangladesh-India, 2006 Bangladesh-Morocco, 2005 United States-Bangladesh, 2005 Sri Lanka-Bangladesh	Bangladesh-Nepal Bangladesh-Pakistan Bangladesh-Islamic Republic of Iran Bangladesh-Egypt
Bhutan	SAPTA, 1995 BIMSTEC, 1997	India-Bhutan, 2006		
India	APTA, 1976 SAPTA, 1995 BIMSTEC, 1997	India-Sri Lanka, 2001 India-Mercosur PTA, 2005 India-Nepal, 1991	ASEAN-India, 2004 India-Afghanistan, 2003 India-Bangladesh, 2006 India-Singapore, 2005 India-SACU, 2004 India-Chile, 2006 India-GCC, 2006 India-Thailand, 2004	India-Malaysia India-Republic of Korea India-China India-Egypt
Nepal	BIMSTEC, 1997 SAPTA, 1995	India-Nepal, 1991		Bangladesh-Nepal
Pakistan	ECO, 1985 and ECOTA, 2003 SAPTA, 1995	Pakistan-Sri Lanka, 2005	China-Pakistan, 2005 Sri Lanka-Pakistan, 2005	Bangladesh-Pakistan Pakistan-Malaysia Pakistan-GCC Pakistan-Afghanistan
Sri Lanka	APTA, 1976 SAPTA, 1995 BIMSTEC, 1997	Islamic Republic of Iran-Sri Lanka, 2004 Sri Lanka-Pakistan, 2005	Singapore-Sri Lanka United States-Sri Lanka TIFA, 2002 Sri Lanka-Egypt Sri Lanka-Bangladesh	Sri Lanka-Singapore

Source: APTIAD (2007).

Note: RTA = regional trade agreement; BTA = bilateral trade agreement.

[a] It is difficult to classify BTAs precisely as distinction between a free trade agreement (FTA), economic partnership agreement (EPA) and framework agreement (FA) is often blurred, and is often only distinguished by the name of the agreement itself.

[b] Years refer to signing of the agreements; not all of them are being implemented.

[c] Includes a documented unilateral perspective.

The SAEs, similar to other developing countries, had been taxing agricultural activities directly, through tax policies, and indirectly, through economy-wide policies. The higher indirect distortions in agriculture were the result of overvalued exchange rates and the protection provided to the manufacturing sector (Kruger and others, 1988). Despite the changes in economic policies in the 1980s and early 1990s, protectionist policies did not change sufficiently and relatively higher tariff rates remained on agricultural commodities. Since the agriculture sector is a very sensitive area for SAEs, the changes in economic policies and the structures of the economies have not changed the socio-economic importance of the sector. The institutional developments related to trade in the South Asian region have paved the way for some liberalization of agricultural trade.

This chapter maps the agricultural trade liberalization efforts of the SAEs. Section A discusses the nature of agricultural trade in the SAEs. Section B presents the agricultural policy changes and employs various approaches to measure the levels of agricultural trade liberalization. Section C reviews institutional development that has led to agricultural trade liberalization of SAEs while Section D presents conclusions based on the findings of the previous sections.

A. Agricultural trade in South Asia

The structural changes during the 1980s and 1990s placed non-agricultural sectors of the SAEs in the driving seat of economic growth. Nevertheless, the SAEs have also achieved a considerable growth in agriculture during the past few decades. Although the share of agriculture in national outputs has been declining, agriculture and agricultural trade still play a very important role in the SAEs (table 2). Agriculture contributes to about 26 per cent of the regional gross domestic product (GDP), (ranging from 21 per cent in Maldives to 41 per cent in Nepal). Rural populations on average account for more than two thirds of the regional population (64 per cent in Pakistan to 93 per cent in Bhutan). Nearly three-quarters of the labour force in the region is involved in agriculture and the prevalence of poverty in the rural sector is very high. The percentage of the population below the poverty line ranges from 25 per cent in Sri Lanka to 45 per cent in Nepal.

The SAEs have reported a favourable economic growth during past few decades, but these developments appear to have had a lesser effect on their rural sector. Rural poverty and income inequality have increased in Bangladesh and Sri Lanka (World Bank, 2004). This may be partly due to the decline in importance of the agricultural sector in SAEs due to their non-agricultural sectors being placed in the driving seat of economic growth. This decline of agricultural importance has resulted in greater inequality and poverty, since a larger share of population lives in rural areas and is involved mainly in agricultural activities as a livelihood. This becomes even more evident when changes in the share of merchandise exports are considered. Bangladesh, Pakistan and Sri Lanka depend more on a narrow base of manufactured exports, textile and clothes, and some other manufactured exports (figure I).

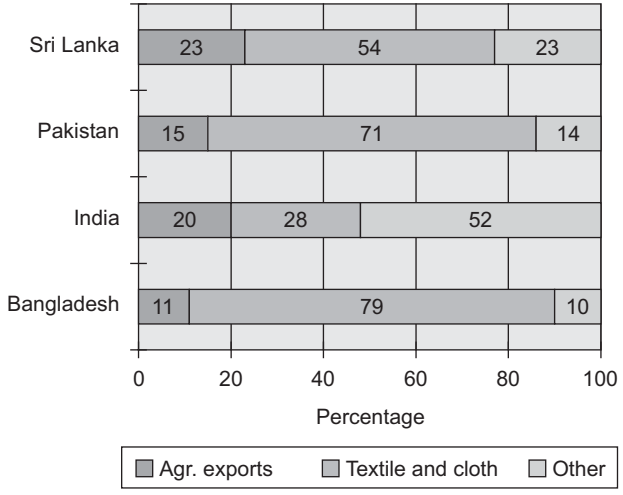
Table 2. Agriculture and South Asian countries

	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Population (million)	128	0.8	998	0.3	22.9	135	19
Population density (per km^2)	981	48	336	956	164	175	294
Rural population (%)	77	93	72	75	89	64	77
Agriculture labour force (% of total)	58	94	60	03	95	54	45
GDP (US$ billion)	46	0.4	4 477	0.3	5	58	16
GDP per capita (US$)	362	490	450	1 220	220	508	814
Agricultural share of GDP (%)	25	18	28	16	38	27	21

Source: World Bank (2004).

Note: Data represent 2004-2005 for Bangladesh and India, 2002-2003 for Pakistan, and 2003-2004 for Sri Lanka and Nepal.

Figure I. Share of merchandise exports, 1995-1999



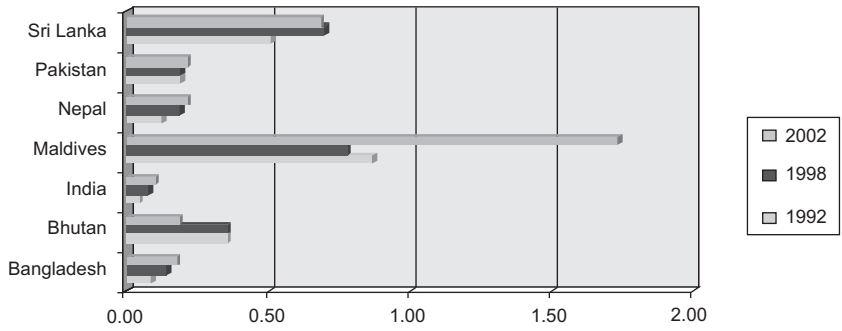
Source: Anderson (2002).

In order to obtain desirable benefits from liberal trade, the SAEs have placed greater emphasis on achieving macroeconomic stability. In addition to tariff protection, exchange rate policies as well as monetary and fiscal policies are employed in order to obtain direct and indirect protection for imports and exports. During the late 1990s, appreciation of real exchange rates was observed in Sri Lanka and Bangladesh, which has eroded the price incentives that were generated through exchange rate depreciation

(Karunagoda and others, 2002; World Bank, 2004). Consequently, these SAEs have taken certain protective measures, such as increasing para-tariffs, to avoid undesirable economy-wide impacts.

The agricultural tradeability index (ATI), the ratio of total agricultural imports and exports to agricultural GDP, measures the changes in the economy with respect to agricultural trade. It also indicates how vulnerable a country is to liberalization of agricultural trade (Valdes and McCalla, 1999). All SAEs, except Bhutan, show increased shares of agricultural trade in their economies. The ATI also indicates that Maldives and Sri Lanka are more open to agricultural trade while India is the least open country in the South Asia (figure II).

Figure II. Agricultural Tradeability Index, 1992, 1998 and 2002



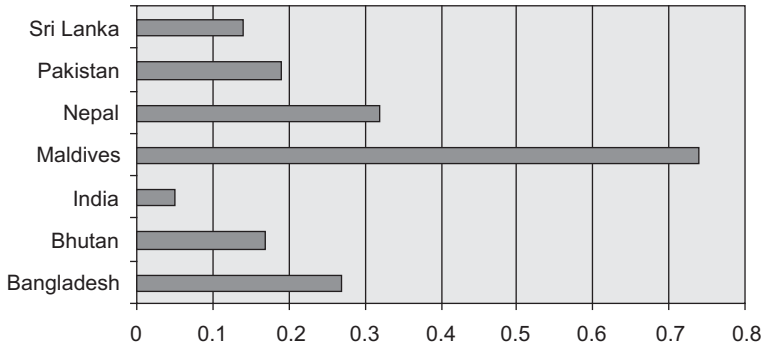
Source: Author's calculations.
Note: ATI = Agriculture imports plus agriculture exports/agriculture GDP.

Food import capacity (FIC), the ratio of the value of food imports to that of total non-food exports, measures the capacity of a country to finance food imports by non-food exports (figure III) (Wilson, 2002). A low ratio indicates relatively low food imports (India) or relatively higher non-food sector exports (Sri Lanka). The net agricultural export index is positive for net exporters and negative for net importers. Among the SAEs, only India and Sri Lanka are net agricultural exporters while others are net agricultural importers (figure IV). The changes in the net agricultural export index show that Bangladesh and Pakistan have moved from net exporter to net importer status while India has moved from net importer to net exporter status.

1. Export specialization in agricultural products

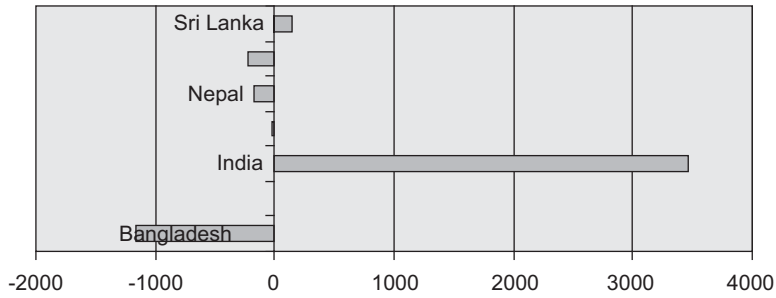
Trade theory suggests that, basically, trade between countries is driven by the comparative advantages and differences in technology, economies of scale or preferences and, in some circumstances, by strategic trade policies. Prospects for trade expansion are likely to be poor for countries that share a comparative advantage in similar products. The comparative advantage for SAEs is estimated for the agricultural commodities/commodity

Figure III. Food Import Capacity Index



Source: Wilson (2002).
Note: FICI = Value of food imports/value of total non-food exports.

Figure IV. Agricultural Net Export Index, 2002
(US$ million)



Source: Author's calculations.
Note: ANEI = Agricultural exports – agricultural imports (Bhutan = -3).

groups using a revealed comparative advantage (RCA)[1] index (table 3) (Balassa, 1965). The concept of RCA is based on the assumption that the pattern of commodity trade reflects relative costs and differences in non-price factors. The RCA index for a product is defined as the ratio of the share of a country's exports to its share in world exports. An RCA value greater than one indicates export specialization in that commodity or commodity group. The RCAs for some product categories show that SAEs have wide differences in export specialization and, thus, there is a potential for promotion of intraregional trade. However, similarity of export specialization observed in some product categories may pose a major constraint to agricultural trade development in the region. India has RCAs in a wide variety of agricultural goods, indicating a higher potential for India to benefit under

[1] The RCA index does not, however, give a true measure of the comparative advantage. The ratios are static measures and are influenced by the trade distortions of importing and exporting countries.

Table 3. Export indices of revealed comparative advantage – agricultural products*

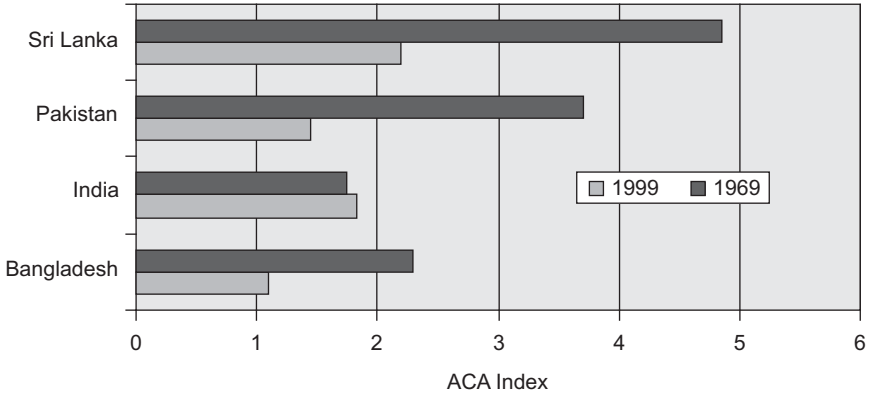
Product	Bangladesh				India				Maldives			
	1995	1998	2001	2004	1995	1998	2001	2004	1995	1998	2001	2004
Live animals	0	0	0	0	0	0	0	0	0	0	0	0
Meat	0	0	0	0	1	1	1	1	0	0	0	0
Fish and crustaceans	10	7	8	12	3	0	4	3	78	87	74	74
Dairy products	0	0	0	0	0	0	0	0	0	0	0	0
Coffee, tea, cocoa, spices	2	1	1	1	5	6	5	3	0	0	0	0
Cut flowers and foliage	0	0	0	1	1	1	1	1	0	0	0	0
Vegetables and fruit	0	0	0	0	2	2	2	2	0	0	0	0
Cereals and cereal preparations	0	0	0	0	4	4	3	0	0	0	0	0
Oil seeds	0	0	0	0	2	1	2	2	0	0	0	0
Tobacco and tobacco manufactured	0	0	0	2	1	1	1	1	0	0	0	0
Sugar, sugar preparation and honey	0	0	0	0	1	0	3	2	0	0	0	0
Beverages	0	0	0	0	0	0	0	0	0	0	0	1
Product	**Nepal**				**Pakistan**				**Sri Lanka**			
	1995	1998	2001	2004	1995	1998	2001	2004	1995	1998	2001	2004
Live animals	2	1	0	2	0	0	0	0	0	0	0	0
Meat	0	0	0	0	0	0	0	0	0	0	0	0
Fish and crustaceans	0	0	0	0	2	2	2	1	2	2	3	3
Dairy products	0	0	10	0	0	0	0	0	0	0	0	0
Coffee, tea, cocoa, spices	1	2	2	7	0	0	0	0	23	24	41	37
Cut flowers and foliage	0	0	0	0	0	0	1	0	2	1	1	2
Vegetables and fruit	1	3	2	3	0	1	1	1	2	2	1	1
Cereals and cereal preparations	0	1	1	0	5	7	8	7	0	0	0	0
Oil seeds	7	2	0	0	1	1	1	1	1	1	1	1
Tobacco and tobacco manufactured	0	0	0	0	0	0	0	0	2	2	2	4
Sugar, sugar preparation and honey	0	0	0	5	7	10	3	4	0	0	0	0
Beverages	0	0	0	0	0	0	0	0	0	0	0	0

Source: Estimated using data in COMTRADE database.
Note: The value zero indicates no trade or lack of comparative advantage.

a more liberal trade environment. Agricultural products of Bangladesh show an RCA in limited product categories; however, higher protection levels by Bangladesh limit the potential for trade expansion. India and Pakistan show RCAs in cereals and sugar, but both these commodity groups are on the sensitive list of Sri Lanka.

The competitiveness of agricultural exports, measured by a comparative advantage index (CAI), shows a declining trend in the region (figure V). The reduction in the CAI of agricultural exports in the region indicates that the non-agricultural exports are growing much faster than agricultural exports. Bangladesh, Pakistan and Sri Lanka have faced greater constraints on maintaining or expanding agricultural exports with the expansion of global trade compared to India. This can be attributed to a higher concentration of agricultural exports by those countries of a lesser number of products as well as faster growth of textiles and other non-agricultural sector exports.

Figure V. Agricultural Comparative Advantage Index, 1969 and 1999



Source: Anderson (2002).

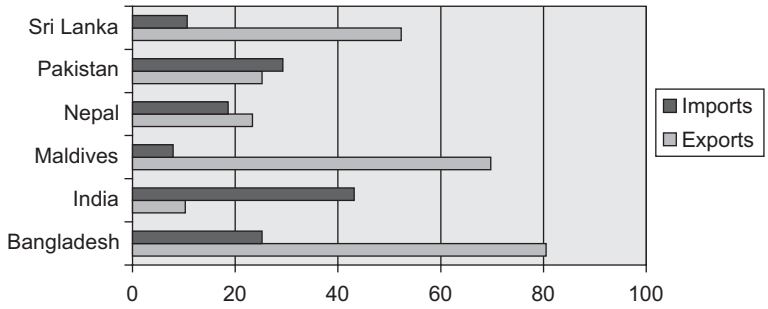
2. Concentration of agricultural trade

Historically, SAEs have traded similar types of agricultural products, and the concentration of exports within limited agricultural product groups is a common phenomenon in many SAEs. The level of trade concentration in specific products is measured using the Hirschmann-Herfindahl index (HHI), which is equal to the sum of the squared shares of all individual products exported.[2] HHI indicates that agricultural exports by Bangladesh,

[2] $HHI = \sum_{i}^{n} \left[\frac{Xi}{\sum_{i}^{n} Xi} \right]^2 *100$, i = product i. n = total number of product. When a single product produces all revenue, HHI equals 100. When export revenues are distributed over many products, HHI approaches zero.

Maldives and Sri Lanka concentrate on few products while the diversity of agricultural imports is high in Maldives and Sri Lanka. India is the most diversified country in terms of agricultural exports and the least diversified in terms of imports (figure VI).

Figure VI. Agricultural trade concentration in South Asia: Hirschmann-Herfindahl Index



All SAEs, except India, show less diversity in agricultural exports and more diversity in agricultural imports (figures VII and VIII). The export concentration is higher on beverages in Sri Lanka, cereals in Pakistan, fats and oils in Nepal, and fish and crustaceans in Maldives and Bangladesh. Sri Lanka shows higher import concentration on sugar, cereals and dairy products. Fats and oil, and cereals account for greater part of imports of Bangladesh. Pakistan mainly imports beverages, spices, oil seeds, and fats and oils. Meat, vegetables, fruits and dairy products are main imports of Maldives. The diversity of imports is higher in small economies while fat and oil dominates the imports in India, Bangladesh and Pakistan. The export and import concentrations indicate the potential for trade liberalization. In this respect, India could profit more due to higher diversity in exports (lesser diversity in imports) than other SAEs (figures VII and VIII).

3. Intraregional agricultural trade flows

All SAEs, except Pakistan, show remarkable progress in intraregional agricultural trade. With reference to the 1995 trade levels, Bangladesh has achieved the highest growth rate while India has established a prominent position in South Asia for its agricultural products. In 2004, total regional agricultural trade accounted for 22 per cent of regional trade, with India accounting for 80 per cent of that trade. Bangladesh and Sri Lanka are the main markets for Indian agricultural products. Pakistan and Sri Lanka account for 8 per cent and 4 per cent, respectively, of agricultural trade in the region. The decreasing share of the intraregional agricultural exports in the region indicates an increase in trade of intraregional non-agricultural products. There has been no major shift in intraregional agricultural trade pattern but all SAEs, except Pakistan, showed a remarkable growth in intraregional agricultural trade from 1995 to 2004 (table 4).

Figure VII. Agricultural export concentrations

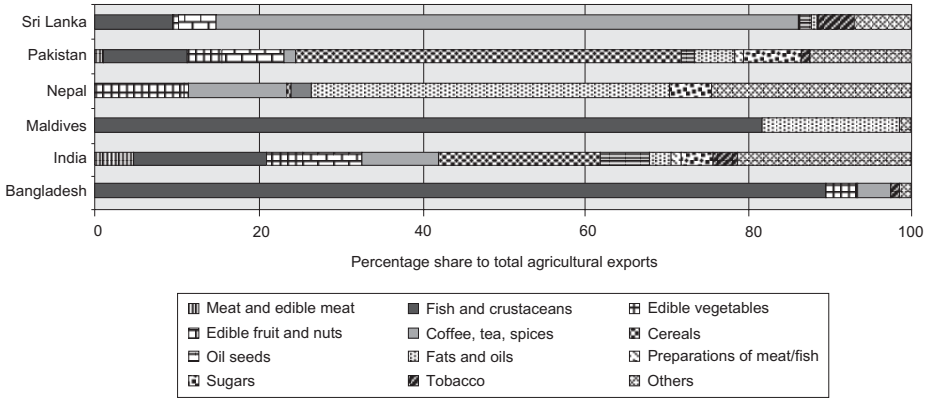
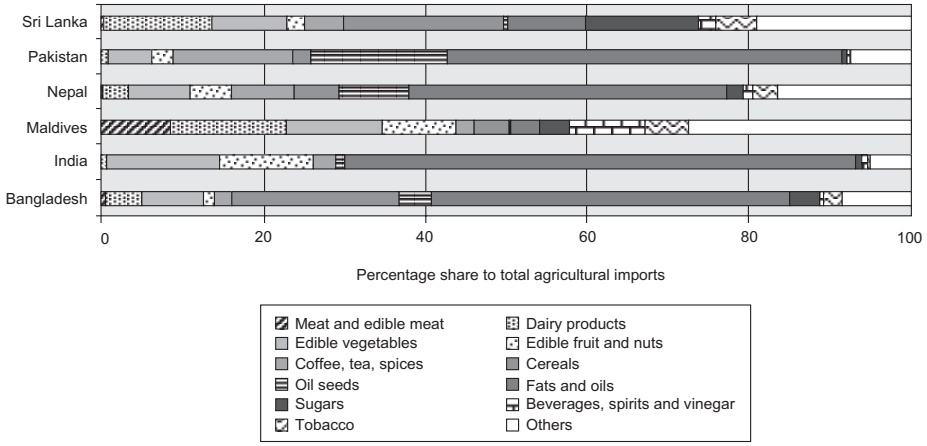


Figure VIII. Agricultural import concentrations



B. Policies and reforms related to agricultural trade

1. Changes in agricultural trade policies

The pre-Uruguay Round agricultural policies of the SAEs were characterized by direct public sector incentives for production, such as research and development, extension services and input subsidies (fertilizer, irrigation and credit). The parastatal organizations were directly involved in imports and exports. The structural adjustments of SAEs that started in the 1980s were mainly focused on manufactured exports, and trade reforms

Table 4. Intraregional trade and agricultural trade, 1995-2004

Country	Value of trade (US$ million)				Percent change	Main market(s) (2004)
	1995	1998	2001	2004	1995-2004	
Bangladesh	6.85 (77.5)	10.36 (23.0)	11.52 (18.4)	21.85 (19.55)	228	Pakistan, India
Bhutan	15.25	15.68	n.a.	n.a.		India, Bangladesh
India	486 (28.3)	642 (38.2)	486 (23.7)	872 (21.2)	79	Bangladesh, Sri Lanka
Maldives	9.8 (87)	11.44 (88)	13.92 (92)	13.97 (77)	43	Sri Lanka
Nepal	14.81 (31)	26.08 (17)	62.4 (19)	34.79 (10)	135	India
Pakistan	87.96 (34)	266.03 (63)	74.99 (20)	87.85 (17)	-0.1	India, Sri Lanka
Sri Lanka	39.42 (45)	53.44 (42)	43.62 (28)	51.32 (10)	30	India, Pakistan, Maldives

Source: Compiled from COMTRADE database.

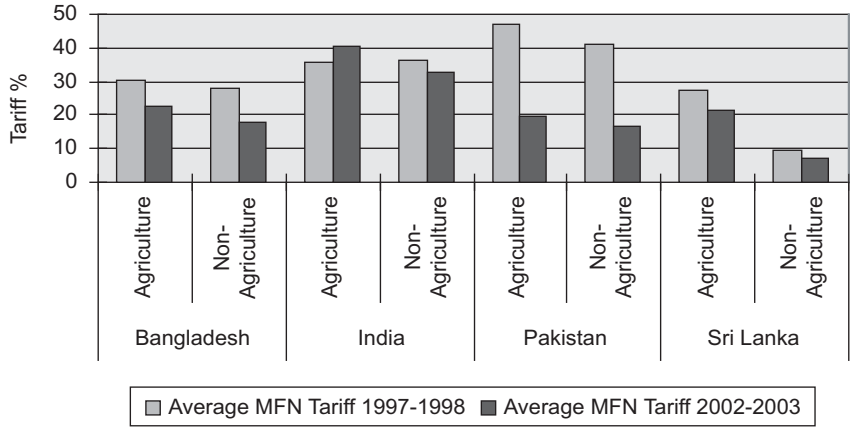
Note: n.a. = not available, Figures in parentheses are percentages of agricultural trade with respect to total regional trade.

during this period were targeted at supporting that policy objective.[3] The agricultural sector policies of SAEs generally remained highly protected (Blackhurst and others, 1996). The SAEs bound their agricultural tariffs at prohibitively high levels (100-300 per cent) in the WTO agreement on agriculture. However, the applied tariff rates of those economies were much less than the bound rates and, in many instances, the applied tariff rates on agricultural imports have been reduced over time. Sri Lanka and Nepal have been maintaining relatively lower applied tariff regimes than those of other SAEs, while substantial tariff reforms have taken place in Bangladesh and India. During 2002-2003, a slight decrease in agricultural tariff rates (MFN rates) were observed in all SAEs, except India (figure IX). At present, SAEs maintain a few tariff bands, whereas agricultural commodities have been subjected to relatively higher tariff rates (table 5).

The agricultural trade liberalization efforts of Bangladesh, which were initiated during the 1980s, showed a slowing down during the mid-1990s. In many instances, custom duties were reduced but these reductions were offset by a variety of other protective tariffs (World Bank, 2004). In 2000, para-tariffs accounted for more than one third of customs collections from protective import taxes. In addition, Bangladesh has retained a number of quantitative restrictions (QRs) based on balance of payment (BOP) grounds. Bangladesh maintains quantitative restrictions on 40 imported items while a large number of agricultural

[3] Sri Lanka started the South Asian trade liberalization in the late 1970s. During the 1990s, other major South Asian countries initiated trade libralization.

Figure IX. Comparison of most favoured tariffs (MFN) in SAEs



Source: World Bank (2004).

Table 5. Status of trade liberalization efforts in South Asia

	Bangladesh	India	Maldives	Nepal	Pakistan	Sri Lanka
General						
Exchange rate	Unified free float	Unified free float	Unified pegged to US dollar	Pegged to Indian rupee	Unified free float	Unified free float
Agriculture trade/ GDP (%)	3	2	25	7	3	10
Imports						
Quantitative restrictions (QR) on imports	Yes	Yes	Yes	Yes (minor)	Yes	Yes (minor)
Import restrictions – import licensing	Some restrictions	No	No	No	No	Yes (very few)
State import monopolies	No	Yes	Yes	No	No	No
Average custom duty rate	16.3	22.2	20.8	13.7	17.3	11.3
Use of anti-dumping	No	Yes	No	No	Yes	No
Agriculture tariff lines bound at WTO (%)	100	100	100	100	89.6	100
Average agriculture bound rate	188.3	115.7	30	42.3	101.6	50
Exports						
Export QRs	Yes	Yes	No	Yes	Yes	No
Export taxes	No	Yes	Yes	Yes	Yes	No
Direct export subsidies	Yes	Yes	No	No	No	No

Sources: World Bank, World Development Indicators, 2001; World Bank (2004); World Trade Organization Trade Policy Review – Bangladesh (2000); and World Trade Organization Trade Policy Review – Nepal (2002). Bangladesh's trade and its industrial sector depend more on export-oriented garment industries.

commodities are highly protected. In early 2004, as measured by its average unweighted protective import taxes, Bangladesh was the most protected of the SAEs, with high tariffs and other taxes on agriculture (World Bank, 2004).

The maximum tariff rates applied in India came down from a peak 355 per cent in 1990-1991 to 50.8 per cent in 1998-1999. The average weighted tariff rates came down from 87 per cent to 20 per cent during the same period. India's tariff regime appeared to be more liberal in the 1990s, but was quite restrictive compared to the other South Asian countries in relation to agriculture. In the late 1990s, more than 31 per cent of agricultural and fisheries products were subjected to import licensing, and a large number of products were restricted based on balance of payment grounds (Panagariya, 1999). Under the Uruguay Round agreement, India agreed to eliminate quantitative restrictions, which were maintained based on BOP grounds, on the majority of the remaining tariff lines by 2001; phasing out of non-tariff measures for most agricultural commodities was started in April 2001. However, India revised the tariff structure again in 2001 and the three-band tariff structure of 8, 16 and 24 per cent was replaced by a 16 per cent tariff band with an additional 4 per cent levy imposed on all imports. State trading monopolies are being maintained on major food grains (rice, wheat, and coarse grains except maize and barley). Tariff rate quotas (TRQs) have been imposed under different bilateral trade agreements on imports of tea (e.g., the Indo-Lanka Free Trade Agreement [ILFTA]), milk, maize, crude sunflower and safflower oils, and refined rape and mustard oils (e.g., the Indo-Nepal trade agreement). India reactivated its technical standards, and health and safety regulations on food imports. In addition, India has designated ports and inland custom points at which imports can be cleared. India maintains a list of about 300 sensitive items, the import of which it monitors. These items include many agricultural products such as milk products, fruits and nuts, coffee, tea, spices, cereals, oilseeds and edible oils, alcoholic products and silk. In addition, food grains and certain agricultural products are subject to procurement by state trading companies to guarantee farmers remunerative minimum support prices for these products (World Trade Organization, 2002). The maximum tariff was reduced from 35 per cent in 2001 to 20 per cent in 2004. However, agriculture was not included in the latest tariff revisions. The latest tariff reforms in India are associated with agricultural MFN tariffs increase and non-agricultural MFN tariffs fall (figure IX).

Pakistan started trade liberalization efforts in the 1980s and continued without serious interruptions. In 1996, a new, comprehensive trade liberalization programme was commenced and was continued until 2003. The general maximum customs duty was reduced to 25 per cent but, in contrast to other South Asian economies, strong protectionist elements in agricultural policies remained such as the use of technical regulations, regulations based on health and safety and, more specifically, a long-standing ban on imports from India (World Bank, 2004). Pakistan has minimum import controls on the grounds of health and safety reasons. Since 1988, Pakistan has granted unilateral duty exemptions in excess of 25 per cent ad valorem (i.e., the maximum rate is set at 25 per cent) to import 17 product categories arriving by land from Afghanistan, China, the Islamic Republic of Iran and Nepal.

Sri Lanka's trade and its manufacturing sector are dominated by its export-oriented garment industry. After 1990, a marked reduction of Sri Lankan tariff rates was observed for intermediate and capital goods and, after 1996, for agricultural goods (Central Bank of Sri Lanka, 1998). By 1998, tariff rates on investment and capital goods ranged from 5 per cent to 10 per cent while tariff rates on the majority of Sri Lanka's agricultural imports ranged from 20 per cent to 35 per cent. The quantitative restrictions were eliminated except for 12 items, which were restricted on the grounds of national security, health and environment.

The trade policies of Nepal and Bhutan are indirectly influenced by India's trade policies (World Bank, 2004). Nepal maintains liberal trade policies and tariffs are generally low, particularly in the case of agricultural trade. Most of Nepal's exports to India are free of duty. In 2002, the Government of Nepal added a "security tax" to its import tariffs and it has increased the tariff protection for local industries (World Bank, 2004). Exports of hydro-electricity form the principal driving force in the economy of Bhutan. The main trade partner of Bhutan is India. About 80 per cent of Bhutan's merchandise trade, 75 per cent of its imports and 95 per cent of its exports are with India. The FTA with India facilitates duty-free entry of exports by Bhutan to India, and imports from India are exempted from import licensing and tariffs. A sales tax, which is imposed only on imports, provides protection for Bhutan's domestic producers.

The economy of Maldives depends predominantly on tourism and fish exports. The average tariff is about 21 per cent and imports provide about two-thirds of government tax revenue. QRs on imports were removed in 1998 but state trading agencies are being used to regulate imports of rice, sugar and wheat flour. Sri Lanka and India are the main trade partners of Maldives; trade with Pakistan, Bangladesh, Nepal and Bhutan is zero or negligible. The principal role of the tariff system is to generate government revenue; hence, the tariff levels and protection for local industries have not been as important in Maldives as they have in the other SAEs (World Bank, 2004).

None of the SAEs used anti-dumping measures during the 1980s. India introduced anti-dumping measures in 1992. In 2002, Pakistan's first anti-dumping case was decided. Bangladesh, Nepal and Sri Lanka do not use anti-dumping regulations.

India, Pakistan, Bangladesh and Sri Lanka have used QRs on agricultural products for BOP reasons. With the improvement of the BOP situation, the SAEs could not maintain QRs and NTBs on BOP grounds. Consequently, most QRs have been removed. A summary of changes in QRs and NTBs during the 1980s, 1990s and 2000 is presented in box 1.

Box 1. Agricultural import restrictions (QRs and NTBs) in South Asian countries

Country	Quantitative restrictions and non-tariff barriers
Bangladesh	
1980s	QRs covered nearly 56 per cent of items at the HS six-digit level.
1990s	During the 1990s, Bangladesh continued to liberalize its trade regime, reducing its tariffs and eliminating many quantitative restrictions on imports. Moreover, the lack of bindings and wide gaps between applied and bound rates imparted a strong degree of unpredictability to the tariff regime. Tariff protection was augmented by other border levies and, in some instances, discriminatory application of internal taxes. Additional protection at the border was provided by import bans or restrictions, affecting nearly 11.7 per cent of all national tariff lines.
Early 2000s	Trade-related restrictions were limited mainly to three categories: agricultural products (chicks, eggs, salt), packaging materials and textile products. Bangladesh was the only country in South Asia with QRs on imports still in place (63 items or 5.1 per cent of tariff lines). (The Government cash compensation scheme for selected exports at various rates on f.o.b. – 15 per cent for leather goods, agricultural and agro-processing products, and crushed bone, 10 per cent on frozen fish and 20 per cent on fresh fruit – constituted indirect barriers to imports).
Bhutan	India is the main trade partner, due its location. Bhutan is protected indirectly by the trade policies of India.
India	
1980s	India used the GATT balance of payment (BOP) provision (Article XVIII B) to justify quantitative restrictions.
1990s	Nearly all consumer goods were subject to import licensing or parastatal import monopolies. QRs covered two thirds of GDP and 84 per cent of agricultural GDP. In the late 1990s, more than 30 per cent of India's imports were subject to licensing: 19 per cent on textiles and clothing; 51 per cent, industrial products; and 31per cent, agricultural and fisheries products. A large number of products were restricted, based on balance of payments grounds. India claimed exemption from the minimum access requirement of the Uruguay AOA. An understanding on Article XVIII: B reached at the end of the Uruguay Round required India to phase out QRs, which were maintained on balance of payments grounds.
2000s	Since 2001, India has not used the GATT BOP provision to justify QRs. In 2001, India published a list of 300 sensitive goods. Domestic production of those products is protected by the use of high tariff rates or various non-tariff measures that are compatible under Article XX b (protection of human, animal or plant life or health) or Article XXI (security or defence reasons).

	QRs on 2,714 tariff lines maintained for BOP reasons were removed in April 2001. However, India has listed 600 tariff lines, justified under the articles of protection of human, animal or plant life or health and security and defence. Import monopolies existed for rice, copra, wheat and all coarse grains except maize and barley in early 2000s. TRQs are being used to protect domestic agricultural production but out-of-quota rates are compatible with the AOA commitments. India continues to maintain State Trading Enterprises (STE) for imports of urea and justifies it under the GATT STE rules that allow government-authorized import or export monopolies. Other non-tariff measures include the reactivation of quarantine regulations, standard certificates, and limiting number of entry ports.
Maldives	Imports of staple foods was a monopoly of the state trading organization (STO). Most of these restrictions were removed in 1998. Import quotas, most of which were allocated to STO, are still being used to regulate imports of rice, sugar and wheat flour.
Nepal	Not an active user of NTBs for protection. In 1997, the Agricultural Inputs Corporation, the parastatal over fertilizer imports, was abolished. Nepal indirectly protects through the trade policies of India.
Pakistan	
1980s1990s	Pakistan used import licensing and other non-tariff barriers to imports widely during its early import substitution period, and started removing QRs during the 1980s. Government-controlled import monopolies were maintained for most agricultural products and the fertilizer industry. In 1997, Pakistan embarked on a radical new trade liberalization programme. This eliminated all remaining traditional QRs and parastatal import monopolies. The most sweeping reforms occurred in the agricultural sector, where government trading monopolies were abolished and other government interventions were reduced.
Sri Lanka	
1980s	The removal of quantitative restrictions started in 1977, but agricultural commodities remain subject to seasonal QRs. Parastatal import monopolies involved in agricultural imports.
1990s	The private sector was allowed to import seasonally restricted agricultural commodities under an import licensing system. About 3 per cent of product lines remain subject to QRs. These QRs were applied to Sri Lanka's principal import substitution food crops of rice, potatoes, chilies and onions. Sri Lanka justified its QRs at WTO under GATT Article XVII1:B.

	In 1997, this justification was challenged by WTO. In 1998, Sri Lanka removed import licensing of these products. But high protection of the import substitution crops has continued with the use of seasonally varying tariffs and specific duties. By 1998, only 3.7 per cent of the tariff lines were still subject to traditional QRs.

Sources: World Bank (2004), Panagariya (1999) and Central Bank of Sri Lanka.

Although pressure from WTO resulted in many SAEs ending the use of QRs, they have been trying to maintain the level of protection for agriculture through alternative measures such as:

(a) Higher tariffs;

(b) The use of alternative clauses of the WTO agreement, such as protection for human, animal or plant life or heath (article XX [b]), security and defence (article XXI)) or the GATT STE rule etc., which are formally compatible with GATT rules.

Bangladesh, Nepal, Pakistan and Sri Lanka use other import taxes as well as custom duties with the intention of protecting domestic producers (table 6). The aim of these taxes is to increase revenue, but the absence of equivalent taxes on domestic agricultural production generates extra protection against imports. Due to these

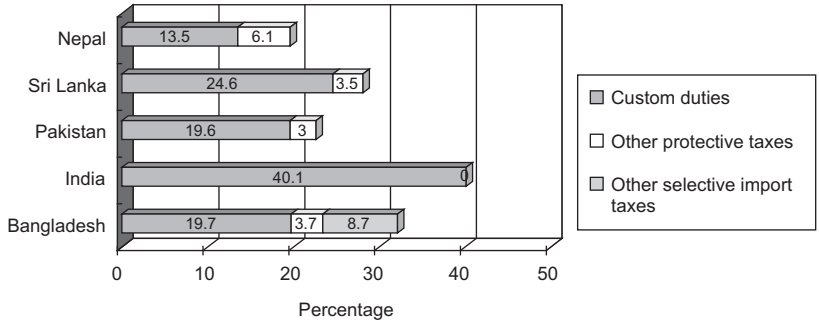
Table 6. Use of para-tariffs in South Asian countries

Country	Para-tariff
Bangladesh	Infrastructure development surcharge Supplementary duty Regulatory duty VAT exemption for specified domestic products
India	Specific duty (1996 to 1998) Surcharge (1999 to 2000) Special additional duty (1998 to 2004) All para-tariffs were abolished in January 2004
Nepal	Local development fee Special fee Agricultural development fee
Pakistan	Income withholding tax Sales tax
Sri Lanka	A levy to fund the Export Development Board (since 1981) Surcharge on custom duties (since 2001) Ports and airport levy (since 2002)

Source: World Bank (2004).

para-tariffs, the protection rates of SAEs have exceeded customs duty in Bangladesh, Nepal, Sri Lanka and Pakistan by 62 per cent, 18 per cent, 31 per cent and 8.7 per cent, respectively (figure X) (World Bank, 2004). India removed its para-tariffs in January 2004.

Figure X. Average custom duties and other protective import taxes (para-tariffs) on agricultural commodities



Source: World Bank (2004).

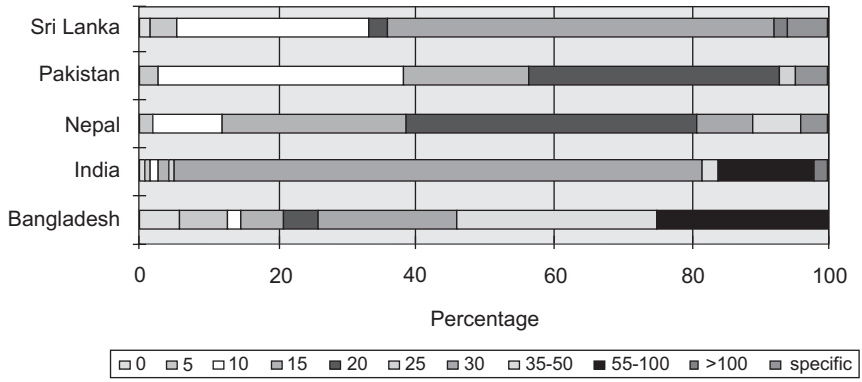
2. Comparative agricultural tariff structure

The distribution of MFN agricultural tariff lines shows that Pakistan maintains less than 20 per cent of tariffs for more than 90 per cent of MFN agricultural tariff lines (figure XI). Nepal maintains a higher percentage (80 per cent) of tariff lines within the less than 20 per cent level. The dispersion of Indian agricultural tariffs is higher than in other countries, but more than two-thirds of Indian agricultural tariffs are placed at 30 per cent. More than half of Sri Lankan tariff lines (56 per cent) receive 30 per cent protection from tariffs. Bangladesh maintains more than 55 per cent tariff protection for 25 per cent of agricultural tariff lines (figure XI).

The tariff levels on agricultural products are a broad indicator of the potential for trade development. The relative tariff ratio[4] (RTR) index is constructed as the ratio between a country's faced tariffs and its imposed tariffs (Sandrey, 2000). The index considers a bilateral trade relationship, where each tariff line of country A is weighted by country B's share of total exports of the same tariff line and vice versa. The index being closed to one indicates that both countries have similar protection. The RTR index can be used as a practical tool to appraise trade agreements and as a starting point to identify a potential/

[4] The RTR index = $\frac{\sum_{i=1}^{n}(X_i^B Y_i^A)}{\sum_{i=1}^{n}(X_i^A Y_i^B)}$ where, A, B = countries A and B, *Xi* = ad valorem equivalent tariff rate for product *i*, *Yi* = share of exports of product *i* in total exports.

Figure XI. MFN tariff structure in agriculture – frequency distribution



Source: World Bank (2004).

difficult sector for trade negotiations. Table 7 compares RTR indices for agricultural products of SAEs.

An RTR of 0.16 between India and Sri Lanka indicates that for every percentage point that India faces in Sri Lanka, Sri Lanka faces 6.17 in India. Conversely, the ratio between India and Sri Lanka is 1/6.17 (= 0.16). Bangladesh shows somewhat similar protection in agricultural products. The higher RTR of India and Bangladesh indicate that the other countries in the region face higher protection from India and Bangladesh for agricultural exports. Sri Lanka and Nepal provide relatively more access to agricultural products than those of other SAEs.

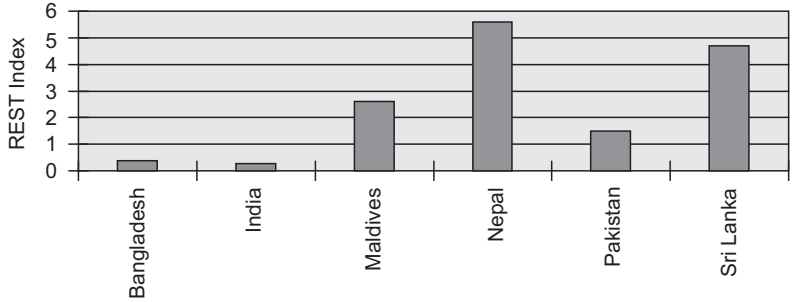
Table 7. Relative tariff ratio indices for the South Asian countries

RTR	Bangladesh	India	Maldives	Nepal	Pakistan	Sri Lanka
Bangladesh	0.60	0.03	0.22	0.25	0.12	
India	1.66		0.09	0.17	0.37	0.16
Maldives	31.64	10.51		5.60	3.91	1.94
Nepal	4.52	5.71	0.17		1.41	1.28
Pakistan	3.95	2.63	0.25	0.70		0.37
Sri Lanka	8.23	6.17	0.51	0.77	2.69	

Source: Estimated using data in COMTRADE, TRAIN database (2005).

The regional export-sensitive tariff index[5] (REST) (Jank and others, 2002) can be used to measure the tariffs each country faces in exporting to its partners. The REST index aggregates all tariffs faced and imposed by each country in the region into a single indicator, representing a ratio of the weighted value of those tariffs. A REST ratio close to 1 can be interpreted as an overall evenness between a country's tariff regime and that of its regional partners (Jank and others, 2002). Figure XII presents the calculation of the REST index for agricultural products using MFN tariffs for SAEs. It indicates that Bangladesh and India face lower tariffs in the region than that of imposed tariffs whereas Nepal, Sri Lanka and Maldives face higher tariffs than that of imposed tariffs. The REST values indicate that South Asian regional agricultural trade liberalization is uneven and that there is potential/opportunity for further agricultural trade liberalization/negotiations.

Figure XII. Tariff protection in regional trade integration: Regional export-sensitive tariff index



Source: Author's calculations.

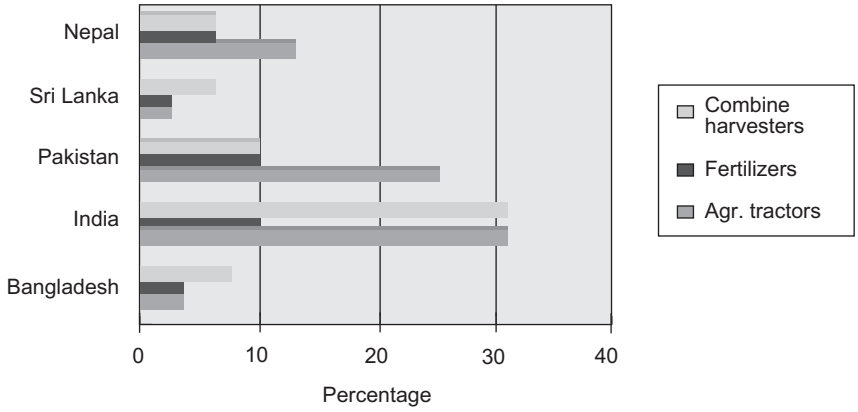
3. Domestic support

Domestic support for agricultural production could indirectly influence agricultural trade in the region. Bangladesh had a non-product specific support equivalent to 0.48 per cent of total agricultural value in 1995-1996, increasing to 0.49 per cent in 1999-2000. On the other hand, the total support or Aggregate Measure of Support (AMS) was US$ 49 million (0.68 per cent) in 1995-1996 and was reduced to zero in 1999-2000. India granted sizeable agricultural subsidies compared with other countries in the region. Indian agricultural producers receive subsidies on fertilizer, power, irrigation, credit and certified seeds. Even though India's AMS is negative, non-product specific support has been valued at 7.5 per cent of total value of production (Gulati, 2002). In Pakistan, domestic support for agriculture has been largely aimed at fostering price support/stabilization, food security and raising

[5] $$REST_A = \frac{\left(X_B^A / X_T^A\right) * \sum_{i=1}^{n} (x_i^B y_i^A) + \left(X_C^A / X_T^A\right) * \sum_{i=1}^{n} (x_i^C y_i^A) + \left(X_N^A / X_T^A\right) * \sum_{i=1}^{n} (x_i^N y_i^A)}{\left(M_B^A / M_T^A\right) * \sum_{i=1}^{n} (x_i^A y_i^B) + \left(M_C^A / M_T^A\right) * \sum_{i=1}^{n} (x_i^A y_i^C) + \left(M_N^A / M_T^A\right) * \sum_{i=1}^{n} (x_i^A y_i^N)}$$

the productivity/competitiveness of the agricultural sector. The share of non-product specific support to the total value of Pakistan's agricultural output was equal to 0.06 per cent in 1995-1996, but it doubled to 0.13 per cent in 1997-1998 (World Trade Organization, 2001). Sri Lanka's agricultural producers are receiving domestic support in the form of a fertilizer subsidy, irrigation and replanting (for tree crops), but the level of subsidy has been very low (0.2 per cent to 1.6 per cent of total value) (Athukorala and Kelegama, 1996). SAEs promote agricultural production through lower tariff for imports of agricultural inputs (figure XIII). They operate subsides to promote agricultural exports. However, regional trade agreements have not included the conditions on domestic support and many SAEs do not use anti-dumping regulations. The available export incentives in the SAEs are summarized in table 8.

Figure XIII. MFN tariffs on agricultural intermediate inputs



Source: World Bank (2004).

Table 8. Restrictions/incentives for agricultural exports in South Asian economies

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
Export restrictions					
Export NTBs	Agricultural livestock and fisheries products	Fertilizers, agricultural commodities	Wool carpets only	Yes (a few)	No
Export control by STEs	No	Maize, Niger seeds and onions	Oil crops	No	Yes (a few)
Restrictions on imports for re-export	No (10% value addition charge on re-exports)	No	No	No	Yes (Tea and spices)

Table 8 *(continued)*

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
Export subsidies					
Direct export subsidies	Yes Cash subsidy of 15% (vegetables, dairy, poultry, fisheries)	Yes Wheat and rice	No	No	No
Transport and marketing subsidy	Yes Low air freight on national carrier	Yes	No	Yes 25% Freight	No
Indirect export subsidies	Yes Low interest loans	Yes	No	Yes Subsidy	No
Indirect export subsidy through policies affecting input policies	Yes Ban on exports of wet blue leather	Yes Leather products	Yes	Yes Leather products	No
Production by industry-specific schemes	Yes Vegetables	Yes Agricultural export zones	No	No	No

Source: World Bank (2004).

C. Preferential trade agreements and agricultural trade liberalization in South Asia

SAEs possess conditions such as higher tariffs and NTBs, and geographical closeness that provide potential for agricultural trade liberalization within the region. The trade agreements between India-Bhutan and India-Nepal have provided wider coverage for agricultural exports to India from Bhutan and Nepal. SAPTA includes 866 agricultural items for concessions, and offers 5-20 per cent margin of preferences (MOP) from MFN rates. SAFTA came into effect on 1 January 2006 with the aim of reducing tariffs for intraregional trade among the seven SAARC members. Pakistan and India are to complete implementation by 2012, Sri Lanka by 2013, and Bangladesh, Bhutan, Maldives and Nepal by 2015. SAFTA replaces the earlier SAPT and may eventually lead to a full-fledged South Asia Economic Union.

The other intra-/interregional and bilateral trade agreements of SAEs have included very few additional agricultural products for further liberalization. ILFTA and the Pakistan-Sri Lanka Free Trade Agreement (PSLFTA) take similar approaches to product coverage and Rules of Origin. These BTAs have classified agricultural commodities as sensitive and subject to reduced concessions or NTBs, or excluded them altogether from the scope

of the agreements. Under ILFTA, India has initially offered 50 per cent MOP for 53 tariff lines while Sri Lanka has offered only limited MOP for 22 agricultural products with the balance subject to the negative list. Under PSFTA, Sri Lanka has given limited concessions for a few agricultural products that not covered by ILFTA (rice and potatoes) while Pakistan has offered 100 per cent MOP for two Sri Lankan agricultural exports (tea and betel leaves) subject to TRQ.

The India-Nepal trade agreement stipulates quotas and rules of origin for Nepal's exports to India while Nepal's MOP preferences for Indian exports range from 10 per cent to 20 per cent. Bangladesh offers 23 per cent of MOP under the Bangladesh-Bhutan trade agreement for its principal imports (apples and apple juice) from Bhutan. The BTAs of SAEs offer more liberal concessions than the WTO and SAPTA agreements. The interregional trade agreements of SAEs, APTA, BIMSTEC and IOR-ARC do not include a significant number of concessions relevant to agricultural trade. However, none of these agreements has explicitly addressed the domestic support and export subsidies on agriculture. Only India and Pakistan currently use anti-dumping legislations. Table 9 summarizes the intra-South Asian regional trade arrangements and the coverage of agricultural products in these agreements.

1. Intraregional trade arrangements

(a) South Asian Preferential Trade Agreement

South Asian intraregional trade accounts for only a small fraction of total trade in the region (table 10). In 1982, intraregional trade accounted for 2.5 per cent of regional trade, increasing to 6.3 per cent in 2004. Developed countries, particularly the United States, the European Union and Japan, account for the greater share of South Asian exports. The initiative for regional cooperation was started in 1985 with the establishment of SAARC. The seven SAARC member countries are Bangladesh, Bhutan, Maldives, Nepal, India, Pakistan and Sri Lanka. The idea of liberalizing trade among the SAARC countries was first discussed in 1991 at the sixth SAARC summit held in Colombo. SAPTA was signed in 1993 and put into operation in 1995. Bangladesh, Bhutan, Maldives and Nepal, which are designated as least developed countries (LDCs) under the agreement, are eligible for additional concessions. So far, three rounds of negotiations have been conducted and the outcomes of these negotiations are summarized in tables 11 and 12.

Trade preferences are based on the principle of overall reciprocity and mutuality of advantages. Although SAPTA has identified four components – tariffs, para-tariffs, non-tariffs and direct trade measures – tariff negotiation was considered as the initial step for trade promotion among members. The concessions negotiated and exchanged will be incorporated in the National Schedule of Concessions, in which special and more favourable treatment has been identified for LDCs. The concessions agreed upon, except those exclusively for LDCs, were to be multilateralized among all contracting members. The consensus incorporated in the national schedule could be altered or withdrawn only after three years. SAPTA has special provisions to assist LDCs to improve infrastructure

Table 9. Coverage of agricultural products in intra-South Asian regional trade arrangements

	Approach for listing concessions	Agricultural tariff lines eligible for concessions	Preferences as a percentage of MFN tariff	Rules of Origin	Inclusion of NTBs	Conditions on domestic support/ export subsidies*	Technical cooperation	Inclusion of services
SAPTA (1999)	Bilateral negotiations (multilaterized to all members)	866 (Bangladesh, 229; Bhutan, 61; India, 223; Maldives, 30; Nepal, 141; Pakistan, 107; Sri Lanka, 85)	5-20 (LDC 5-30)	40-50% of local content	Yes Sensitive list (Pakistan uses positive list for imports from India)	No	Yes	No
Indo-Lanka Free Trade Agreement (2000)	Negative list approach	India, 53 Sri Lanka, 23		25-35% local content	Yes TRQ and designated entry points India: Tea	No	Yes	No
Pakistan-Sri Lanka Free Trade Agreement (2005)	Negative list approach	Pakistan, 41 Sri Lanka, 21	Duty-free subject to TRQ	25-35% local content	Yes TRQ: Sri Lanka, rice and potatoes. Pakistan, tea and betel leaves	No	Yes	No

Table 9 *(continued)*

	Approach for listing concessions	Agricultural tariff lines eligible for concessions	Preferences as a percentage of MFN tariff	Rules of Origin	Inclusion of NTBs	Conditions on domestic support/ export subsidies*	Technical cooperation	Inclusion of services
India-Nepal (2002)			Duty-free access to Indian market: 10-20% tariff reductions from 10-110% tariff bands	30% minimum content of Nepalese or Indian products	TRQ: Quotas allocated to Indian state trading enterprises	No		No
India-Bhutan (2003)					Provisions for Bhutan to use NTB	No		No
Bangladesh-Bhutan (2003)		Bangladesh, 58	23% MOP (apples and apple juice)			No		No

* India and Pakistan use anti-dumping regulations, and safeguard measures have been included in all agreements.
The interregional agreements provide few concessions for agricultural products.

facilities, communications, transport and transit facilities that will support trade within the region.

In order to qualify for preferential market access, products should satisfy the Rules of Origin condition and the direct consignment terms. The Rules of Origin state that products having a domestic value addition content of at least 50 per cent will qualify for preferential market access. In the case of LDCs, this limit is set at 35 per cent.

Table 10. South Asia's intraregional trade

Year	Intraregional trade of SAARC countries (US$ million)	World trade of SAARC countries (US$ million)	Share of intraregional trade in world trade (%)
1994	2 194	46 907	4.6
1999	2 431	51 713	4.7
2001	2 855	64 692	4.4
2004	5 572	88 512	6.3

Source: Compiled from COMTRADE database.

Table 11. SAPTA negotiations and outcomes

Year		Outcome
December 1995	SAPTA-1	The tariff prevailing in the region was relatively high. Tariff concessions on 226 products under the HS code system negotiated. Preferential tariffs offered as a percentage of available tariffs. Preferences offered were ranged from 10 per cent to 100 per cent from the prevailing MFN rates.
November 1996	SAPTA –2	Completed the negotiations on an additional 1,871 products. About 39 per cent of the product categories are only for LDC members. Tariff concessions offered in this round ranged from 10 per cent to 30 per cent.
November 1998	SAPTA-3	Tariff concessions offered on 3,456 tariff lines. LDCs offered more than 70 per cent of the total tariff lines under preferential treatment. India offered the largest number of tariff lines (1,975), but the majority (1,932) was only for LDCs.

Source: Central Bank of Sri Lanka (2003).

Table 12. SAPTA preferences: SAPTA 1-3*

	LDC		All		Total	
Bangladesh	144	(44)	407	(558)	521	(602)
Bhutan	124	(122)	109	(68)	233	(193)
India	2 082	(2 412)	472	(484)	2 554	(2 896)
Maldives	6	(369)	172	(19)	178	(388)
Nepal	163	(177)	328	(252)	491	(517)
Pakistan	229	(242)	262	(284)	491	(517)
Sri Lanka	44	(52)	155	(144)	199	(196)
SAARCC	2 762	(3 418)	1 095	(1 770)	4 667	(5 218)

Source: Weerakoon and Wijayasiri (2001).

* Preferences at the six-digit level of HS code. The figures in parentheses indicate concessions offered at the eight-digit level of HS code.

India has offered the largest number of tariff preferences. In 1997, India granted tariff preferences ranging from 5 per cent to 10 per cent. India provides further tariff reductions ranging from 10 per cent to 50 per cent for non-LDCs and up to 100 per cent in some instances for LDCs. India lifted all quantitative restrictions maintained for balance-of-payments reasons for SAPTA members on 1 August 1998.

The trade statistics for the region indicate that SAE intraregional trade increased during the 1990s (table 4). Regional trade is dominated by exports from India (74 per cent in 2004), which go mainly go to Bangladesh and Sri Lanka. India's exports to the SAARC members account for about 6 per cent of its total exports. The low cost of Indian agricultural products provides a competitive advantage in agricultural trade in the region. However, imports from other SAEs to India have been low. India's economy is more diversified than other SAEs, and trade-related factors (tariffs, QRs, STE etc.) and non-trade-related factors (exchange rate, economies of scale etc.) have placed India in an advantageous position in regional trade. The real devaluation of the exchange rate with regard to currencies of other SAEs has also provided an impetus to India for expansion of exports in the region.

When compared with MFN tariffs, SAPTA has not offered substantial tariff reductions (table 13). The developed members offer tariff concessions in the range of 10 per cent to 100 per cent of the MFN level to the LDC members; the LDC members generally offer concessions in the range of 10 per cent and 15 per cent to other members. Agricultural products have a higher trade potential in the region. However, the most tariff preferences offered under SAPTA are irrelevant to the trade interests of the member countries. Plant-based products, the largest export product group of the region, have received only 191 concessions (table 14). but only a small number of these concessions is relevant to the member countries (Weerakoon and Wijayasiri, 2001).

Table 13. MFN rates and Margins of Preferences under SAPTA

	MFN rate	LDC/ non-LDC	SAPTA preferences (as percentage of MFN tariff) SAPTA-1	SAPTA-2	SAPTA-3
Bangladesh	0-40	Non-LDCs	10	10	10
		LDCs	10	10	10
Bhutan	20-50	Non-LDCs	10	10	10-15
		LDCs	10-15	10-15	10-15
India	5-45	Non-LDCs	10-90	10-50	10-20
		LDCs	50-100	50-100	50
Maldives	0-40	Non-LDCs	7.5	7.5-10	10
		LDCs	7.5	7.5-10	..
Nepal	5-25	Non-LDCs	7.5-10	7.5-10	5-10
		LDCs	10	15	10-15
Pakistan	0-45	Non-LDCs	10	10-15	10-20
		LDCs	15	15	30
Sri Lanka	0-30	Non-LDCs	10-20	10-20	10
		LDCs	15-25	60	10-75
SAARC		Non-LDCs	7.5-90	7.5-50	5-25
		LDCs	7.5-100	7.5-100	10-75

Source: Weerakoon and Wijayasiri (2001).

Table 14. Distribution of preferences of agricultural products offered under SAPTA

	HS Code Chapter					
Country	**01-05 Live animals and animal products**	**06-14 Plant-based products**	**15 Animal/ vegetable fats and oils**	**16-24 Prepared foodstuff**	**25-99 Non-agricultural products**	**Total**
Bangladesh	142	35	3	49	292	521
Bhutan	1	6	0	54	172	233
India	88	38	46	41	2 331	2 554
Maldives	0	1	24	5	148	178
Nepal	6	66	0	69	350	491
Pakistan	10	35	4	58	384	491
Sri Lanka	73	10	1	1	114	199
SAARC	320	191	78	277	3 801	4 667

Source: Weerakoon and Wijayasiri (2001).

The SAARC members signed SAFTA in January 2004, envisaging that the agreement would be operational by January 2006. In order to ensure timely implementation of the agreement by 2006, the committee of experts (COE) appointed by the council of ministers has already drafted the agreement (such as the sensitive lists, technical assistance to LDCs, the mechanism for compensation of revenue loss for LDCs and finalization of the rules of origin) (Central Bank of Sri Lanka, 2004). A tentative plan has been formulated for phasing out of tariffs in two phases. The first phase covers the period from 1 January 2006 to 1 January 2008 while the second phase covers different timeframes for the LDCs (2008-2016) and other contracting members (2008-2013) (table 15). However, tariff cuts for SAFTA trade may not apply to items on each country's sensitive list. In the case of other SAE PTAs, sensitive lists contain agricultural products. Thus, a higher possibility exists for the inclusion of agricultural products in the sensitive lists.

Table 15. Planned tariff cuts in SAFTA

Country	First phase	Second phase	
	1 January 2006 to 1 January 2008	1 January 2008 to 1 January 2013	1 January 2008 to 1 January 2016
LDCs: Bangladesh, Nepal Bhutan and Maldives	Reduce maximum tariff to 30 per cent		Reduce tariffs to the 0-5 per cent in eight years
Non-LDCs: India, Pakistan and Sri Lanka	Reduce maximum tariff to 20 per cent	Reduce tariffs to 0-5 per cent in five years (Sri Lanka in six years)	

Source: World Bank (2004).
Note: Tariffs refer to customs duty only.

(b) Indo-Lanka Free Trade Agreement

India and Sri Lanka have relied more heavily on South Asian regional trade integration as a means of diversifying, boosting and stabilizing trade. The similarity of the economic structures of South Asian nations was considered the major bottleneck in the development of regional trade. Therefore, the benefits from improved trade relationships were expected to be marginal. In contrast, bilateral trade between India and Sri Lanka is growing faster than the overall economic growth of either country. In 2000, Sri Lanka and India finalized a bilateral free trade agreement, eliminating tariff barriers. ILFTA is widely seen as an important step because it has granted Sri Lanka greater access to the larger Indian market.

Bilateral trade in agricultural and non-agricultural goods between Sri Lanka and India can be used to describe the trends in trade between the two countries (table 16). During 1990-2004, Sri Lanka's exports to India showed a remarkable growth (1,380 per cent) in both agricultural (340 per cent) and non-agricultural goods (1,628 per cent). The

value of Sri Lanka's overall imports from India increased by 850 per cent during the past decade. Particularly significant has been the remarkable growth in agricultural goods (1,480 per cent), while non-agricultural goods increased by 800 per cent. In 2003, India accounted for 22 per cent of Sri Lanka's agricultural imports. The trade balance has therefore been in favour of India.

Table 16. India-Sri Lanka trade structure

(Unit: US$ million)

Product	Indian exports to Sri Lanka			Sri Lankan exports to India		
	1990	1995	2004	1990	1995	2004
Agricultural products	10 (8)	93 (18)	158 (12)	5 (19)	10 (28)	22 (43)
Non-agricultural products	127 (92)	405 (82)	1 144 (85)	21 (81)	24 (72)	363 (57)
Total	137	498	1 302	26	34	385
Percentage of total	4.0	9.3	11.5	1.1	0.8	7.0

Source: Compiled From COMTRADE.

The RCA of Indian and Sri Lankan products followed a similar trend between 1995 and 2004 (table 3). This similarity of export specialization may pose a major constraint to Sri Lanka's drive to find new market opportunities in India. On the other hand, the development of a trade relationship may help India to supply Sri Lanka's main imports such as food (rice, spices, vegetables and fruit, and sugar), textile yarn and more capital-intensive manufactured items (iron and steel, and other manufactured products).

The composition of the manufacturing sector shows another important position of trade development. Sri Lanka depends more on food and textile products and therefore, is not diversified. As for India, apart from the textile sector, the engineering and chemical sectors play a prominent role in the economy. This further indicates the likelihood of India profiting from a wide range of products in the Sri Lankan market. Moreover, Indian firms have the advantage of economies of scale due to its market size.

The provisions of ILFTA are summarized in table 17. ILFTA is a preferential trade agreement, and both countries may maintain a negative list. The ILFTA Rules of Origin are less stringent than those of SAPTA. ILFTA provides concessions for products with at least 35 per cent of domestic value addition content, which qualify for tariff concessions. In addition, Sri Lankan exports with a domestic value addition of 25 per cent and a minimum Indian input content of 10 per cent also qualify for preferential concessions under the agreement.

Table 17. Commitments for duty concessions under Indo-Lanka Free Trade Agreement – all products

Level of duty reduction	No. of tariff lines (by 6-digit HS-code)	
	Sri Lankan commitments	Indian commitments
Nil (negative list)	1 180	429
– 50% (fixed) garments (quota)[a]	–	233
100% (zero duty)	319	1 351
50% (phased out in 2003)[b]	889	2 799
50% (fixed) – tea (quota)[c]	–	5
25% (fixed) – textile items	–	528
Up to 100% in eight years	2 724	–
Total	5 112	5 112

Source: Indo-Lanka Free Trade Agreement, Secretariat (www.indolankafta.org.html).

[a] Garments imports are subject to an annual quota of 8 million pieces, of which a minimum of 6 million pieces should contain Indian fabrics.

[b] Fifty per cent tariff preferences phased out in three years as 70 per cent, 90 per cent and 100 per cent, respectively, in 2001, 2002 and 2003.

[c] Tea quota = 15 million kg/year.

At present, Sri Lanka imports about 2,900 products (62 per cent of active tariff lines) from India, of which about 20 per cent is on Sri Lanka's negative list. Concessions with 50 per cent tariff preferences belong to the category of intermediate and investment goods. The tariff levels maintained by Sri Lanka for these products are low (4 per cent in 2002); therefore, a large trade diversion may not have occurred due to ILFTA. However, at maturity, ILFTA will cover nearly 80 per cent of the tariff lines that are of trade interest to India (excluding the negative list). Sri Lanka exports about 380 items (15 per cent of the active tariff lines) to India and ILFTA has direct influence on 80 per cent of the currently traded items. A majority of concessions granted under duty-free access to India include prepared foodstuffs, chemical products, paper products, machinery and mechanical products. Sri Lankan agricultural products such as rubber products, tea and spices, which have higher export specialization, are subject to India's negative list.

The development of Indo-Lankan trade has proved that there is immense potential for the expansion of trade between the two countries. The diversity of the export structure, the comparative advantage in a range of products and the geographical location provide an advantageous position for India due to the liberal economic and trade policies of Sri Lanka.

Apart from the institutional changes, depreciation of the nominal and real exchange rate seems to favour the Indian trade flow to Sri Lanka. The economic structure of regional economies is similar to that of Sri Lanka and free trade agreements, thereby placing India in an advantageous position as a vibrant trade partner in South Asia. Sri Lanka has received substantial opportunities to promote exports to India, but current

exports have a limited influence on Sri Lanka's overall trade. Therefore, Sri Lanka should seek to diversify trade with India. India has become the major food supplier to Sri Lanka. The import-competing agriculture sector of Sri Lanka is highly influenced by trade developments with India. Sri Lankan producers have been competing under different incentive systems and have experienced the negative effects of the macroeconomic management.

(c) Pakistan-Sri Lanka Free Trade Agreement

The Pakistan and Sri Lankan joint economic commission covers a wide range of topics such as expansion of trade, market access, and agriculture scientific and technology cooperation. The framework for PSFTA was signed on 1 August 2002, and a free trade agreement was implemented on 9 February 2005. The basic objective of the trade agreement is to promote trade by providing fair conditions of competition for trade in goods and services as well as the harmonious development of economic relations between Pakistan and Sri Lanka. Pakistan is the second largest trading partner of Sri Lanka in the South Asian region. Sri Lanka's export share to Pakistan is about 0.5 per cent, which represents about 11 per cent of Sri Lanka's SAARC regional exports. In 2003, agricultural products such as copra, tea, natural rubber, desiccated coconut, cashew nuts, betel leaves, coconut in shell (fresh), tamarind and coconut oil represented 90 per cent of Sri Lankan exports to Pakistan. Among Pakistan's exports to Sri Lanka, agricultural products such as rice, potatoes, onions and fruit account for about 43 per cent of the total while woven cotton fabric accounts for about 27 per cent. The value of total trade between the two countries in 2003 was US$ 104 million, which represented 30 per cent growth with respect to total trade in 2001.

The rules of origin conditions are similar to those of ILFTA, and products can qualify for preferences under two broad categories: wholly obtained and products not wholly obtained. The value added components of the latter category should satisfy the 35 per cent value-added level. The cumulative rules of origin condition holds for products originating from other contracting parties and the value addition of the exporting contracting parties should be a minimum 25 per cent of the FOB price of the product exported; and the value of inputs imported from other contracting parties should be a minimum 10 per cent of the FOB price.

Pakistan's commitments include 100 per cent immediate concessions on 206 products, duty-free TRQ for 10,000 metric tons (mt) of tea, TRQ for 1,200 mt of betel leaves with 35 per cent MOP on the applied MFN rate, TRQ for 3 million pieces of apparel with 35 per cent of MOP on the applied MFN rate etc. Pakistan's negative list contains 540 tariff lines at the six-digit HS level, out of 5,224 tariff lines. Tariffs on all remaining items will be phased out within a three-year period (table 18).

Sri Lanka's commitments include a 100 per cent immediate removal of tariffs on 102 products, duty-free TRQ for 6,000 mt of long-grain Pakistani rice and 1,000 mt of potatoes. Sri Lanka's negative list includes 697 tariff lines at the six-digit HS level, out of

5,224 tariff lines. The negative list includes agricultural products (rice, sugar, frozen chicken, fish products, vegetables, potatoes, onions and fruit). Sri Lanka is bound to remove tariffs on all other products within a five-year period (table 18).

Table 18. Commitments of Pakistan-Sri Lanka Free Trade Agreement (PSFTA)

Commitment	Sri Lanka	Pakistan
Immediate tariff removal	102 products (six-digit level)	206 products (six-digit level)
TRQ	10,000 mt of Basmati rice, duty-free (MFN rate: Rs. 9/kg)	10,000 mt of tea, duty-free (MFN rate: 10% for bulk tea, 20% for packed tea)
	1000 mt of potatoes, duty-free (MFN rate: Rs. 18/kg)	1,200 mt of betel leaves with 35% margin of preferences (MFN rate 150 Rs/kg). Three million pieces of apparel with 35% Margin of Preferences (MFN rate 25%)
Negative list	697 products	540 products
Tariff phasing out schedule	Within a five-year period: (Upon entry into FTA – 20%, first year – 30%, second year – 40%, third year – 60%, fourth year – 80% and fifth year – 100%)	Within a two-year period (Upon entry into FTA – 34%, first year – 67%, second year – 100%)

Source: Department of Commerce, Sri Lanka (2005).

The majority of agricultural products that are of trade interest to both countries are on the negative list or subject to TRQs. Pakistan has opened its market for coconut-based products, except for coconut oil, and the MFN rate for these products has been put at the 5 per cent level. Both countries have taken a step towards liberalization for some agricultural products and have agreed on concessions for agricultural products. Sri Lanka has offered TRQs for rice and potatoes, and these items are on the negative list of ILFTA. Pakistan provides 15 per cent MOP for betel leaves imported from Bangladesh under SAPTA (LDC) while under the PSFTA, Pakistan has offered duty-free TRQ for betel leaves.

Pakistan shows export specialization for fish, cereal and cereal preparations, vegetables and fruit, sugar, sugar preparations and honey, textile fibres, animal oil and fat, leather, textile yarn and fabrics, articles of apparel and clothing accessories. Sri Lanka shows export specialization in tea, oil seeds, crude rubber, rubber manufactures, articles of apparel and clothing accessories. Product categories that show export specialization have been excluded or subjected to NTBs under PSFTA.

(d) India-Nepal Treaty of Trade

The India-Nepal trade treaty was signed in 1951. It was renewed and formally suspended several times during trade and transit crises (Box 2). Initially, India allowed duty-free exports to Nepal but imposed a stringent rules of origin condition on Nepal (80 per cent local content requirement). However, subsequent revisions lowered the rules of origin condition to 55 per cent. In 1996, India removed the rules of origin condition and all exports from Nepal were exempted from Indian duties and QRs, provided that they were certified by the authorized agencies in Nepal. In 2002, India re-imposed the rules of origin condition, setting a maximum share of non-Nepalese, non-Indian material content of 70 per cent, and with quotas set for Indian STEs (World Bank, 2004). 2002 revision had put in place a quota system for the entry of four sensitive items namely vegetable fats (100,000 tons per year), acrylic fibre (10,000 tons per year), copper products (7,500 tons per year) and zinc oxide (2,500 tons per year) into India without payment of customs duties. Other agricultural goods not subject to TRQ have been exempted from duties if they are wholly produced in Nepal. Nepal has extended 10-20 per cent tariff reductions on 40-110 per cent and 40 per cent bands. The trade composition between the two countries shows that Nepal's agricultural export value share has been decreasing (table 19 and figure XIV).

Box 2. Summary of India-Nepal Trade and Transit Treaty

Year	Particulars
1951	Treaty of Trade was signed.
1961	The treaty was renewed in 1961.
1971	The treaty was renewed in 1971 with certain modifications to include a provision for transit facilities extended by India for Nepal's trade with a third country.
1991	The treaty was renewed in 1991.
1996	A new treaty was signed with the provision for automatic renewal every five years.
1999	A new treaty of transit was made with liberalized transit arrangements in Calcutta for Nepal's imports. The treaty is automatically renewable every seven years.
2002	The Protocol to the India-Nepal Treaty of Trade was renewed with some modifications in February 2002

Source: World Bank (2004).

Table 19. India-Nepal trade value

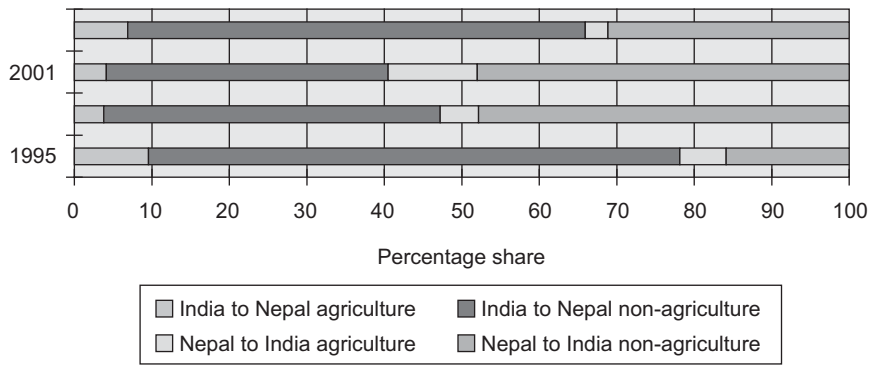
(Unit: US$ million)

India-Nepal bilateral trade	1995	1998	2001	2004
India				
Agricultural exports	19.5 (14) *	9.77 (8)	22 (11)	69 (12)
Non-agriculture exports	139.64 (86)	112.5 (92)	194.17 (89)	591.4 (88)
Total exports	159.14	122.27	216.17	660.4
Nepal				
Agricultural exports	12.17 (38)	12.8 (10)	61.2 (24)	29.5 (9)
Non-agricultural exports	32.33 (62)	123.85 (90)	256.2 (76)	311.61 (91)
Total exports	54.5	136.65	317.4	341.11

Source: COMTRADE (2004).

* Figures in parentheses are trade shares.

Figure XIV. Indian and Nepalese trade shares



Source: COMTRADE database (2004).

(e) Impact of intraregional trade agreements

The gravity model postulates that trade between countries is inversely related to the distance between two countries. Even though the impact of RTAs is rather uncertain, most empirical studies have shown that the trade creation effect dominates trade diversion.

The impact of regional trade agreements on agriculture was analysed using the gravity model[6] (Tinbergen, 1962). The estimated coefficients on the log of the product of two countries gross domestic products (GDPs) and distances are 1.15 and 0.32 respectively. The results of the analysis indicate that the preferential trade agreement of SAPTA has had a significant agricultural trade creation effect in the South Asian region while ILFTA indicates a trade diversion effect (coefficient -0.15) to non-members. The other regional trade agreements such as BIMSTEC show no significant effect on agricultural trade.

Hassan (2001) showed a trade diversion among SAARC countries, indicating a reduction of trade among SAARC countries as well as with non-members. In contrast, Hirantha (2004) showed strong evidence of trade creation in the region under three levels of SAPTA and with no trade diversion with non-members. The estimated coefficients on the log of product of two countries GDPs and per capita GDPs are about 0.771 and 0.13, respectively, suggesting that trade increases with country size and income. Hirantha further showed the importance of distance and common borders in international trade (coefficient -0.641 and 0.171). He stated that the results augured well for the proposed SAFTA.

Rahman and others (2006) investigated the trade creation and diversion effects of several RTAs, with special emphasis on SAFTA. They found significant intra-bloc export creation in SAPTA as larger countries in the region (Bangladesh, India and Pakistan) gained from joining the RTA. However, Maldives, Nepal and Sri Lanka were found to be negatively affected, creating a net export diversion in SAPTA. APTA and BIMSTEC were found to be intra-bloc export diverting while only APTA was net export diverting. There is no evidence of net export creation or diversion under BIMSTEC.

According to Delgado (2007), SAFTA tariff liberalization influenced regional trade flows mainly by increasing India's exports and imports from Bangladesh and Nepal. The smallest countries (Bhutan and Maldives) experienced 2 per cent and 1 per cent of GDP increase in trade flows while it is less than 0.25 per cent of GDP in all the other countries. The customs revenue decrease was larger in the former two countries while India and Pakistan faced no significant changes. Delgado further argued that extending SAFTA to other RTAs such as NAFTA, the European Union and ASEAN, conferred significant benefits.

What these results imply is that although there are certain benefits from RTAs, all RTAs have not created benefits equally for all the countries and that benefit distribution is unfair towards smaller countries. Thus, a mechanism with a coordinated approach is needed to ensure that the small countries also benefit equally.

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[6] The gravity model postulates that trade between countries is proportional to the gross domestic product and is inversely related to the distance between two countries. Tij = f (Yijt, Iijt, D, B, Aij), where T = Bilateral trade volume, Y = Product of GDP, I = Product of per capita Income, D = Distance between countries, A = Dummy Variable for membership in Trading Bloc. Subscript i and j represent two countries and t = time.

2. Extraregional preferential trade agreements

(a) India-Thailand

In November 2001, India and Thailand agreed to set up a Joint Working Group to undertake a feasibility study of an FTA. The Joint Working Group observed that both countries would benefit from bilateral economic integration and an FTA could prove to be a building block for both countries. A Framework Agreement for establishing a Free Trade Area between India and Thailand was signed on 9 October 2003. The key elements of the Framework Agreement cover goods, services, investment and areas of economic cooperation.

The agreement also provides for an Early Harvest Programme under which common items of export interest to both sides have been agreed on for tariff elimination on a fast track basis. The Early Harvest Programme items were finalized through negotiations based on full reciprocity in terms of trade value between India and Thailand. The Early Harvest Programme list includes 84 products (11 agricultural tariff lines) for tariff concessions. For 2001-2002, exports to Thailand of Early Harvest Programme items amounted to US$ 33.3 million while imports from Thailand during the same period were US$ 38.5 million. Tariffs on selected items were to be phased out by March 2006 (table 20). India and Thailand expect to establish an FTA by 2010.

Table 20. Time frame for tariff reduction for the Early Harvest Programme

Period	Tariff reduction on applied MFN tariff rates (as of 1 January 2004)
1 March 2004 to 28 February 2005	50 per cent
1 March 2005 to 28 February 2006	75 per cent
1 March 2006	100 per cent

Source: Agreement schedules.

(b) India-ASEAN

India became a sectoral dialogue partner of ASEAN in 1992 and a full dialogue partner in 1996. In November 2001, the ASEAN-India relationship was upgraded to the summit level. In September 2002, it was decided to establish an ASEAN-India economic linkages task force, and the first ASEAN-India summit was held in November 2002. India has expressed willingness to extend special and differential trade treatment to ASEAN countries, based on their levels of development, in order to improve their market access to India and establish an FTA within a 10-year timeframe. In addition, India is committed to aligning its peak tariffs to East Asian levels by 2005. A Framework Agreement on Comprehensive Economic Cooperation (FACEC) between ASEAN and India was signed in October 2003. The elements of FACEC cover FTA in goods, services and investment, as well as areas of economic cooperation.

The Agreement also provides for an Early Harvest Programme that covers areas of economic cooperation and a common list of items for exchange of tariff concessions as a confidence-building measure. The tariff reductions were to start from 1 January 2006 and MFN tariff rates were to be gradually eliminated. India will eliminate tariffs in 2011 for Brunei Darussalam, Cambodia, the Lao People's Democratic Republic, Indonesia, Malaysia, Myanmar, Singapore, Thailand and Viet Nam. Brunei Darussalam, Indonesia, Malaysia, Singapore and Thailand will eliminate tariffs for India in 2011 and the new ASEAN member States (Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam) will eliminate tariffs in 2016. India and the Philippines will eliminate tariffs for each other on a reciprocal basis by 2016. The progressive tariff reduction under the Early Harvest Programme commenced on 1 November 2004, and tariff elimination will be completed by 31 October 2007 for India and ASEAN 6, and by 31 October 2010 for the new ASEAN member States. The initial tariff reduction is based on full reciprocity between India and ASEAN 6 and covers 111 tariff lines (eight agricultural tariff lines) at the HS six-digit level. India accords 105 (six agricultural tariff lines) unilateral concessions to new ASEAN members.

(c) Asia-Pacific Trade Agreement

Agreement on APTA was reached in 1975 with the objective of fostering economic cooperation among members by relaxing barriers to trade. Seven countries were involved in the initial negotiations, but only five countries (Bangladesh, India, the Lao People's Democratic Republic, the Republic of Korea and Sri Lanka) became members of the agreement from the inception. At that time of inception, intraregional trade among members was less than 1 per cent of total trade. In 2001, the accession of China provided a boost to APTA. The scope of the arrangements is confined to a small range of goods, and services are not covered. The very low level of intra-trade is mainly due to the limited product coverage (box 3 and table 21). APTA became rather ineffective because of differences in approach, interpretation and perception among member countries. APTA, similar to, maintains special tariff concessions for the LDC members. Membership of APTA is open to all developing countries in the ESCAP region.

Box 3. Progress of the Bangkok Agreement (Asia Pacific Trade Agreement)

Negotiation/year	Outcomes of negotiation	Remarks
First Round, 1975	Negotiations completed for 104 products.	Intra-trade was less than 1 per cent.
Second Round, 1990	Negotiations completed for 438 products.	By the end of the 1990s, intra-trade had risen to 2.4 per cent for exports and 2.2 per cent for imports. The Republic of Korea accounted for more than 90 per cent of intra-member trade.

Third Round, 2004	Negotiations were aimed at offering a maximum 50 per cent margin of preferences on existing tariffs with regard to agreed items. Offer lists were exchanged among members.	The discussion was on an amended version of the agreement. The agreement was renamed the Asia-Pacific Trade Agreement. The domestic value-added criterion with regard to not wholly produced or obtained remains an outstanding issue to be negotiated.

Sources: Samaratunga (2003); Central Bank of Sri Lanka (2004).

Under APTA, Bangladesh extends tariff preferences to India, the Republic of Korea and Sri Lanka on 119 tariff lines at the HS 8-digit level. Items covered by the agreement include agricultural products, chemicals, rubber and machinery. While the preferential margin varies from 10 per cent to 60 per cent, most of the preferences are 10-15 percentage points below the MFN rate.

Table 21. Agricultural concessions offered under the Asia-Pacific Trade Agreement

Country	Number of agricultural concessions	MFN (%)	Applied rate
Bangladesh	16	25	12.5
China	141	10-35	9-29.5
India*	84	35	0-30
Republic of Korea	18	3-40	2.4-22.5
Sri Lanka	9	10	5

Source: National Tariff Schedules of APTA.

Note: Includes only general concessions. Members have offered special concessions to LDC members. The number of agricultural concessions include: Sri Lanka to Bangladesh – 2; Republic of Korea to Bangladesh – 2; India to Bangladesh – 2; Sri Lanka to Lao People's Democratic Republic – 2; and Republic of Korea to Lao People's Democratic Republic – 2.

* Of India's 84 concessions, 75 items come under HS code 01-03. For these items, the applied rate is zero.

D. Conclusion

The SAEs have recorded favourable economic growth during the past few decades. Dependence of a higher proportion of population on agriculture, a continuous decline of farm income, changes in terms of trade in agriculture and the appreciation of real exchange rates have led many SAEs to maintain relatively higher tariff rates for agricultural products than for non-agricultural products. In addition, trade liberalization in agriculture is politically a very sensitive issue for SAEs. Thus, the South Asian trade negotiations have yielded

fewer opportunities for agricultural trade and the SAEs remain the most protective region when in comes to agricultural trade.

The number of agricultural products covered in trade negotiations is very limited and the items negotiated are of no significant trade interest to the contracting parties. Trade barriers in agriculture are mostly based on ad valorem tariffs. The percentage of agricultural tariff lines with specific tariffs or TRQ is low. However, specific tariffs and TRQ have been used to protect sensitive (or high trade potential) agricultural commodities. India dominates agricultural trade in the region and shows export specialization in a diverse group of agricultural products. SAE agricultural exports (except India) are concentrated in a small basket of goods. Involvement of state trading monopolies as well as domestic support for agricultural production and exports could strongly influence the pattern of trade. The level of these incentives varies among the SAEs. The issue of the differences in incentives has not been taken into consideration in PTA or BTA negotiations. Trade liberalization without due consideration of these issues will lead to unfair competition in agricultural production and trade.

Although these institutional developments to trade have included limited concessions for agricultural products, intraregional agricultural trade has expanded during the past decade. The expansion is attributed to multilateral trade liberalization as well as regional and bilateral trade agreements. The development of agricultural trade within the region during the past decade and the prevalence of higher tariff protection levels indicate the potential for the expansion of agricultural trade. RTR and REST indices indicate that there is potential for improving agricultural trade in the region, and India and Bangladesh can provide more opportunities to promote such agricultural trade. A reduction in the competitiveness of agricultural production is being experienced by Bangladesh and Sri Lanka due to exchange rate appreciation. These two countries have resorted to alternative methods of providing additional protection for domestic producers. The real agricultural trade interests of the SAEs are subject to the sensitive lists in RTA and BTA. Therefore, a substantial development of agricultural trade in the region cannot be envisaged without any change in the sensitive or negative lists of the SAEs. Reductions of specific tariffs, the removal of TRQs and improving market access for products with considerable export specialization can be considered as key issues for regional and multilateral trade negotiations.

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III. PREFERENTIAL TRADING AGREEMENTS AND AGRICULTURAL LIBERALIZATION IN EAST AND SOUTH-EAST ASIA

*By Gloria O. Pasadilla**

Introduction

In all trade negotiations, opening a domestic agriculture market is always a sensitive issue. Although agriculture commands a relatively small share of gross domestic product (GDP) compared with manufacturing and services, the sector can slow or derail even a most promising trading arrangement. The deadlock in the recent WTO Ministerial Conference in Hong Kong, China, is one example of how disagreements over agriculture can block further progress towards any new agreement. In ASEAN 6,[1] agriculture is, on average, only slightly more than 10 per cent of 2003 GDP compared with the shares of about 40 and 50 per cent of industry and services, respectively. Yet, the initial hesitation over a China-ASEAN trade pact was largely due to agriculture concerns. The Japan-Singapore Agreement, despite very little threat of agriculture exports from Singapore, still incited Japanese farmers to protest. The concern of farmers in the Republic of Korea threatened to scuttle the Republic of Korea-Chile agreement, while the fate of several other negotiations such as the Japan-Republic of Korea FTA, remains uncertain primarily due to agriculture.

A major reason why agriculture holds so much sway in the political calculations of various countries is, perhaps, that despite its minimal share in the economy, the share of the agriculture sector in employment remains significant. In ASEAN members, because more than a third of employment is in agriculture, the protection of agriculture employment becomes a primary concern. Even in the case of developed countries, where the share of agriculture in employment is almost trivial, intense lobbying by agriculture groups makes governments circumspect. Countries may cite non-trade reasons such as food security, food safety and quality, or the so-called "multi-functionality" of agriculture, but the true reason is the difficult political economy of liberalizing agriculture. In Europe, the preservation of "rurality" as a societal preference, together with an ageing farming population, is used to justify the use of agriculture subsidies; yet, subsidy is, in fact, a cheaper alternative to government payout for relocation of agricultural unemployment.

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1 Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand.

Agricultural negotiation is a difficult issue everywhere, but more so in the multilateral forum where many developing countries have vowed to stall negotiations indefinitely unless they receive concessions that allow better access to agriculture markets in developed countries. As a result, regional and preferential trading arrangement (PTA) negotiations escalated after the Seattle and Doha Rounds, with the aim of advancing market liberalization ahead of the multilateral process. This paper attempts to explore two questions:

(a) What are the liberalizing measures in agriculture in these PTAs?

(b) How have they actually affected agriculture trade?

In particular, it considers the common features of PTAs in East and South-East Asia as far as agriculture is concerned, and examines a few selected trade agreements in more detail. Section A discusses how various preferential agreements in the region deal with agriculture liberalization – their timelines, type of flexible arrangements as well as safeguards and non-tariff measures. Because most Asian countries have been avid supporters of multilateral negotiations, bilateral and regional trading agreements are relatively recent in the region, and thus are not yet susceptible to a historical assessment of trade effects of the PTA. To enable deeper data analysis, therefore, the focus is on the oldest and the first PTA that was formed in the region. Sections B and C discuss the effect of one specific PTA, the ASEAN Free Trade Area (AFTA), on the regional protection structure and agriculture trade flows, respectively. Section D comprises a summary and conclusions.

A. Preferential trading agreements and agriculture

1. Number and motivation

Preferential trade arrangements now appear to be a permanent feature of the multilateral trading system. While there were few PTAs before the Uruguay Round, the number has escalated since 2000 when the multilateral negotiations went into a virtual crawl. According to the list of WTO-notified partnership agreements, half of the total PTAs have been forged during the past five years.[2] While the PTA fever has affected practically all countries, from the Asian to the African continent, Asia-Pacific and Latin American countries appear to be the most aggressive. Of the 89 WTO-notified PTAs, a quarter involve an East Asian country; this figure is likely to rise soon as 17 more PTAs involving an East Asian country are under negotiation (table 1 and appendix table 1), of which 15 are proposed bilateral trading arrangements.

The rush to "partner" with other countries or regions in trade has affected even erstwhile "multilateralists" such as Japan and the Republic of Korea. Following the lead of the European Union and the United States, those two countries have joined the PTA-forming bandwagon as a defensive stance, in order to secure and protect market

[2] Seventy-five per cent of all PTAs notified in the World Trade Organization are bilateral trade agreements; some are cross-regional, such as that between Japan and Mexico, while other PTAs are expanding and embracing whole continents (for example, the Free Trade Area of the Americas, which is still under negotiation).

Table 1. Preferential trading arrangements

Agreement	Number
WTO notification (1948-2005)	180
WTO notification (2000-2005)	89
Notification for South-East and East Asia (2000-2005)	23
Percentage share to total WTO notification (2000-2005)	25.8
Under negotiation for South-East Asia and East Asia (2005-2006)	17

Source: Regional Trade Agreement Gateaway, www.wto.org and APTIAD, www.unescap.org/tid/aptiad.

access, and as insurance against a possible failure of the WTO consensus. The Republic of Korea is aggressively pursuing PTAs with scores of trading partners and hopes to sign 15 of them in 2007. Australia, too, feared being marginalized if ASEAN plus 3 becomes a reality and thus, forged a tie-up with Singapore as a toehold in the region.

Another reason for initiating such agreements is political. China, for example, courted ASEAN, largely as a confidence-building measure; the aim was to ease ASEAN concerns over China as a regional threat and rival by providing preferential access to its domestic market. At the same time, it is eyeing ASEAN natural resources and large internal market, while seeking to improve geopolitical influence in the region and counterbalance the influence of Japan and the United States (Chia, 2004). Japan followed suit in order to preserve its influence in the region and avoid future exclusion from the US$ 700 billion ASEAN market. Even the United States reacted by launching its Enterprise for ASEAN Initiative, in response to the Chinese dalliance with ASEAN, in order to lock in its security relationships in the region.

Whatever the initial motivations, many of the PTAs in Asia have gone beyond WTO provisions. For example, the Japan-Singapore agreement, considered a template for Japan's bilateral agreements with other ASEAN countries, includes chapters on regulatory trade regimes such as competition and investment policy that had been rejected in previous WTO Rounds. It should, however, be emphasized that although these chapters are included, in many cases they merely state an agreement to discuss these issues in subsequent Rounds or to provide a capacity-building grant (e.g., in competition policy) and thus involve no major substantial divergence from WTO provisions.

2. Treatment of agriculture in Asian PTAs

While, to some extent, several PTAs have been considered WTO-plus because of restrictions on the imposition of anti-dumping measures or the inclusion of regulatory regimes in investments, the evidence is mixed with regard to provisions that touch on agriculture. As in the multilateral negotiations, agriculture is also a sensitive issue in bilateral and regional trade talks. The same political economy, such as dependence of the rural population on agriculture in developing economies (which makes liberalization difficult in the multilateral stage), still looms large in small-group negotiations. In many PTAs,

negotiators lock horns and face deadlocks because of agriculture as in the ongoing negotiations in the FTAA, Japan-Australia or Japan-Republic of Korea.

(a) Market access negotiations only

In WTO, agricultural trade liberalization involves three elements: (a) market access; (b) domestic support; and (c) export subsidies. The various PTAs nearly always only deal readily with market access issues, rarely with export subsidies, and almost never with domestic support. Domestic support is deemed impossible to handle within the PTA framework because of externality problems brought about by its removal. That is, once domestic support is removed, its beneficiaries would not only be the preferential trading partner but all countries that trade and compete in agriculture. Thus, the default arrangement is not to discuss domestic support in PTA, but rather to leave it to WTO. Negotiations on export subsidies, however, have prospered in limited sectors that parties to the agreement intensely trade with one another, as in the case of the Australia-New Zealand trade agreement (ANZCERTA).

(b) Exclusions and extended timelines

Yet, even negotiations on issues related to agriculture market access have not been easy. The usual way that negotiating partners skirt the difficult issue of agriculture is through exclusion of whole or part of the agriculture sector as well as more extended time lines for market liberalization relative to other goods sectors. The various European Union trade agreements, for example, routinely exclude a significant part of agriculture. Others, while including the agriculture sector, nearly always have sensitive sectors that are either permanently or temporarily excluded. Others contain a liberal extension time for transition and adjustments, as in AFTA, the Republic of Korea-Chile or the Thailand-Australia agreements.

(c) Use of applied tariffs

One positive aspect of PTAs, however, is that the point of departure for negotiations is always the applied, rather than bound, tariffs, unlike in multilateral discussions. Since, almost all the bound tariffs of developing countries are much higher than applied tariffs, this negotiation strategy is already an advance over the WTO talks. In essence, therefore, right from the start PTAs achieve the result that developed countries actually wanted from previous WTO Rounds – that is, of bringing down bound rates to the actual applied rates.

(d) Safeguards and non-tariff measures[3]

In addition to market access issues such as the extent and timing of tariff cuts for specific agricultural products, discussions on agriculture also deal with the presence of safeguards (that is, anti-dumping, safeguards, and countervailing duties), non-tariff measures,

[3] OECD (2005) discussed SPS and safeguard measures in much greater depth across 18 PTAs, worldwide.

special sanitary and phytosanitary (SPS) measures, and the appropriate design of rules of origin. In general, PTAs in Asia contain safeguards and SPS provisions, but most do not go substantially beyond the provisions of WTO.

With regard to SPS measures, some PTAs have provisions for mutual recognition or the application of equivalence. Some take the approach of promoting international harmonization or the use of international standards, if any exist (e.g., Singapore-New Zealand). The Republic of Korea-Chile FTA established a committee dedicated to SPS matters. Others, such as China-ASEAN, identify it as an area for future negotiation.

Safeguard measures are also present in many PTAs in the region. Japan-Singapore and the Republic of Korea-Chile agreements adopt NAFTA-type safeguard measures during transition with criteria similar to WTO rules.[4] The difference is that the applied safeguard tariff is capped at the MFN tariff rate.[5]

The rules of origin provision is not very controversial as far as agriculture is concerned, except in ensuring that the products are indeed produced and harvested in the trading partner and not merely shipped from non-parties.

Next, several selected preferential trade agreements in the region are discussed in more detail, in order to provide a clearer idea of how PTAs deal with agriculture issues.

3. Focus on selected PTAs

(a) ASEAN Free Trade Area

The AFTA agreement was signed in 1992 by Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand. AFTA thus signalled to the rest of the world that the ASEAN focus had morphed from merely political and security concerns to greater economic cooperation.[6] Subsequently, four other Asian countries acceded to ASEAN – Viet Nam in 1995, the Lao People's Democratic Republic and Myanmar in 1997 and Cambodia in 1999. Considered as a South-South trading agreement, AFTA was notified to WTO under the Enabling Clause, instead of Article XXIV of the General Agreement on Tariffs and Trade (GATT), which meant that AFTA was not strictly obliged to liberalize "substantially all" sectors. Nevertheless, despite the initial exclusion of unprocessed agricultural products from liberalization, AFTA covered more than 89 per cent of tariff lines for scheduled liberalization in 1993 (table 2).

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4 NAFTA, however, does not apply safeguard actions to preferential trading partners except as part of a global action. See table 3 in OECD (2005).

5 Further details of different agriculture-related measures can be found in annex table 2.

6 Prior to AFTA, ASEAN had a preferential tariff arrangement as early as the 1970s whereby each country provided a margin of tariff preferences for products coming from other ASEAN member States. ASEAN member States also pursued unilateral tariff liberalization in the 1980s rather than through any ASEAN framework.

ASEAN Free Trade Area: Common Effective Preferential Tariff in brief

AFTA follows a negative list approach for liberalizing tariffs using the Common Effective Preferential Tariff (CEPT) Scheme. In CEPT, concessions are granted on a reciprocal, product-by-product basis at various speeds. There are four lists under the CEPT Scheme: the Inclusion List (IL); the Temporary Exclusion List (TEL); the Sensitive List (SL); and the General Exceptions List (GEL). Only IL products enjoy tariff concessions from other countries. IL products were targeted for the reduction of tariffs to between 0-5 per cent by 2002 for ASEAN 6, 2006 for Viet Nam, 2008 for the Lao People's Democratic Republic and Myanmar, and 2010 for Cambodia.

TEL products do not enjoy concessions from other ASEAN partners until transferred to IL status, which the ASEAN members were obliged to do in equal batches up to 2000. The transferred products were subject to the same rate of tariff reduction as other products (2002 for some and 2010 for others) in the case of ASEAN 6 (2015 for the CMLV [Cambodia, Myanmar, Lao People's Democratic Republic and Viet Nam] economies). SL and highly sensitive (HS) products have different timeframes both for phasing into the CEPT Scheme and for ending tariff rates. SL is for some unprocessed agricultural products that were to be phased in between 2001 and 2003 with ending tariff rates of 0-5 per cent achieved by 2010. HS items may have ending rates higher than 5 per cent. For Malaysia and Indonesia, the ending rates are 20 per cent. GEL comprises only items that satisfy Article XX of GATT and that may be permanently excluded from tariff reductions due to: (a) national security reasons; (b) protection of public morals; (c) protection of human; animal and plant life and health; or (d) protection of items of artistic, historic or archaeological value.

Quantitative Restrictions and Non-Tariff Barriers are likewise to be removed by 2010 (ASEAN 6), 2013 (Viet Nam), 2015 (Lao People's Democratic Republic and Myanmar), and 2017 (Cambodia). Rules of origin require 40 per cent cumulated local content.

As in other PTAs, AFTA initially excluded unprocessed agricultural products (UAPs) from tariff liberalization but subsequently incorporated them into CEPT, allowing for flexibilities such as adding new SL and highly sensitive product categories. All SL products of ASEAN members are from chapters 1-24 of the Harmonized System. The exception is Myanmar, which listed additional products from chapters 50-52 (e.g., silkworm cocoons and cotton yarn). However, not all UAPs were protected. Table 2 shows that in 1995, of the total 2,025 tariff lines of UAPs, more than 50 per cent were on the IL, 377 tariff lines were on the TEL and 261 were on the SL. To date, only a handful of tariff lines remain on the SL while the rest have been liberalized or are on track for eventual tariff reduction to 0-5 per cent (see discussion in section B on AFTA's effect on protection structure).

Table 2 is an example of how progressive tariff reductions, phased transitions and other flexible arrangements eventually achieve agricultural liberalization, which was thought impossible only a decade ago. Although there were a number of reversals (e.g., the reintroduction of automobiles by Malaysia into TEL) or major difficulties in liberalizing some agricultural products (e.g., rice for Indonesia and the Philippines), the majority of the

Table 2. Tariff reduction in AFTA

Coverage	Number of tariff lines	Percent share to total	No. of tariff lines-UAP[2]	UAP-1994 import value US$ million	UAP% intra-ASEAN imports	Timeline to reach 0 to 5% tariff[3]	Additional notes
Inclusion List (IL)	40 773[1]	89.46[4]	1 387	125.68	31.6	Jan 1994 – Jan 2003	2006 for Viet Nam
Fast Track	14 855	32.59					2008 for Lao PDR and Myanmar
Normal Track	25 918	56.87					2010 for Cambodia
Temporal Exclusion List (TEL)	2 888[2]	6.11[5]	377	130.7	32.9		
1 – Manufactured and Processed Agricultural Products	2 496	5.28				Jan 1996 – Jan 2000	
2 – Unprocessed Agricultural Products	377	0.80				Jan 1997 – Jan 2003	
3 – UAP-STEs[8]	15	0.03				Jan 2010	
Sensitive List[6]	261[2]	0.55	261	141.15	35.5	2001/2003 – Jan 2010	2013 for Viet Nam
General Exemption[7]	467[2]	0.99					2015 for Lao PDR and Myanmar
TOTAL			2 025	397.53	100		2017 for Cambodia

Source: ASEAN Statistical Yearbook

Notes:
[1] 1993
[2] 1995. In 1993, total TEL includes 3,322 tariff lines
[3] for ASEAN 6
[4] Total tariff lines; 1993 = 45,575
[5] Total tariff lines; 1995 = 47,252
[6] Sensitive List category was added in 1995 after the 26th AEM Meeting, September 1994
[7] General Exemption are products that satisfy Article XX of GATT
[8] UAP = Unprocessed Agricultural covered by State-Trading Enterprises (STEs); added in 1995

agriculture sector is now included in the ASEAN regional liberalization. How the gradual opening of ASEAN agriculture markets via tariff reductions translates to actual growth in trade is discussed in section C.

(b) China-ASEAN (CAFTA)

China and ASEAN signed a Framework Agreement on Comprehensive Economic Cooperation in 2002, which covers tariff elimination on goods, services, investments, trade facilitation, special and differential treatment, and expansion of cooperation in various

areas. With regard to the liberalization of goods, CAFTA provides for three tracks: Early Harvest, Normal Track and Sensitive Track.

The Normal Track follows a positive list approach, i.e., products listed by countries for liberalization on their own accord, and set target dates of January 2005 up to January 2010 for phased reduction to zero per cent tariffs for ASEAN 6 and 2015 for CMLV economies. The Sensitive Track follows the same positive list approach but has no negotiated timelines yet for liberalization.

The Early Harvest Programme (EHP) has both a negative list (for chapters 1-8 of HS) and a positive list for other products from other chapters. The aim is an accelerated tariff reduction for these products to zero per cent, starting from January 2004, and no later than January 2006 for ASEAN 6 and 2010 for CMLV economies. The China-ASEAN agreement emphasizes reciprocity for the products that are to be liberalized, whereby China matches the concessions for exactly the same products.

Chapters 1-8 comprise approximately 10 per cent of tariff lines in the HS classification. The products come under the categories of live animals, meat and edible meat offal, fish, dairy produces, other animal products, live trees, and vegetables, fruit and nuts. In addition, a small list of additional products from other chapters is included in the early harvest.

Table 3 summarizes the content of Annexes 1 and 2 of the China-ASEAN agreement. The Philippines, by opting for an inclusion list for Annex 1, ended up excluding more than 60 per cent of the products in chapters 1-8; other ASEAN members have liberalized practically all the chapters vis-à-vis China.

Table 3. China-ASEAN FTA Early Harvest Programme

Country	Annex 1: Exclusion (Chp. 1-8)	Number of tariff lines (Chp. 1-8)[a]	Annex 2: Inclusion List
Brunei Darussalam	0	510	To match China
Cambodia	30	248	
Indonesia	0	512	14
Lao PDR	n.a.	208	0
Malaysia	n.a.	504	
Myanmar	0	345	0
Philippines	209[b]	586	5
Singapore	0	510	To match China
Thailand	0	539	2
Viet Nam	15	510	0

Source: China-ASEAN Framework Agreement, Annexes 1 and 2.

[a] Based on 2004 CEPT rates.

[b] The Philippines chose an inclusion list instead of exclusion list for Annex 1.

The significant difference with CAFTA was that, while other FTAs skirted around agriculture, the agreement negotiated it openly instead by having an EHP that covered a significant portion of agriculture products as per the Harmonized System chapters. Of course, the usual flexibility applies via the exclusion list. However, it appears that with the exception of the Philippines, which opted for positive list, the other ASEAN members are eager to engage China with more open agriculture trade, shown by the relatively few excluded products. Because of the strong reciprocity condition of market access, the willingness to allow Chinese unprocessed agriculture products into ASEAN markets also reflects ASEAN interest in making inroads into the large Chinese market. In contrast, the Philippines, by liberalizing mainly products that are not significantly produced domestically, signalled its relative lack of interest in penetrating the Chinese agricultural market.

(c) Republic of Korea-Chile

The Republic of Korea-Chile FTA was important to the Republic of Korea, not only because it was that country's first bilateral FTA but also because it was able to reach an agreement on agricultural products, thus proving the Government's commitment to the pursuit of FTAs. In the Republic of Korea-Chile FTA, agriculture access was again a central issue. Yet, amid public concern, the bilateral FTA coverage of agriculture liberalization is one of the most widely ranging examples of such an agreement.

The approach is negative listing with exceptions and phased tariff reductions. The Republic of Korea finally conceded 1,432 farm products with 10 types of schedules for tariff elimination (table 4), but exempted rice, apples and pears from tariff reductions. Manufacturing is mostly liberalized upon date of entry into force, compared with only 16 per cent of farm products. The remainder is to be liberalized in 5, 7, 9, 10 and 16 years. In addition, grapes (the product of interest for Chile) have seasonal tariffs (over a 10-year transition period) from May to October, during the Republic of Korea's harvest season. Items subject to tariff rate quota (TRQ) plus DDA include beef, chickens, whey and plums where in-quota tariffs are eliminated and out-of-quota tariffs are at the prevailing tariff rates; these are to be renegotiated after the Doha Development Agenda (DDA) Round (Chung, 2003). Tariff elimination of some 373 agricultural products (about 26 per cent of agriculture tariff lines) will be negotiated after the end of the Doha negotiations.[7]

The agreement relies on WTO for most of the disciplines on the safeguard and SPS measures. It establishes a committee dedicated to SPS matters in order to facilitate the application of SPS-related provisions and monitor compliance. It also has best endeavour wording for harmonization towards international standards and application of equivalence (OECD, 2005). Interestingly, because of concern that preferential access may be eroded through multilateral concessions, the Republic of Korea-Chile FTA contains provisions that should any party decide to grant an MFN concession, it should consult the other party to

[7] Hae-kwan Chung (2003) highlighted the fact that some products were classified with DDA, or were to be negotiated after the Doha Round, showing that some sectors were more pliable to liberalization at the multilateral level than at the regional level. In exchange for the exemption, Chile also permanently excluded 54 items covering mainly washing machines, refrigerators, sugar, wheat and oilseeds.

Table 4. Republic of Korea tariff limitation schedule

Category	Total	Industrial products	Farm products	Forest products	Marine products	Main description
Year 0	9 740 (87.20)	9 101 (99.9)	224 (15.6)	138 (58.2)	277 (69.5)	Mixed feeds, pure-bred breeding animals, silk fabrics, coffee
Year 5	701 (6.3)	–	545 (38.1)	70 (29.5)	86 (21.5)	Bracken, roses, bean curd, wine, almonds
Year 7	41 (0.4)	1 (0.01)	40 (2.8)	–	–	Fruit juice, prepared fruit, meat of poultry of heading, soup, potatoes
Year 9	1 (0.01)	–	1 (0.07)	–	–	Other fruit juices
Year 10	262 (2.3)	–	197 (13.8)	29 (12.3)	36 (9.0)	Tomatoes, pork, cucumbers, kiwis
10S[a]	1 (0.01)	–	1 (0.07)	–	–	Grapes
Year 16	12 (0.01)	–	12 (0.08)	–	–	Prepared dry milk
TRQ[b]+ DDA[c]	18 (0.15)	–	18 (1.26)	–	–	Beef, chicken, mandarins
DDA	373 (3.3)	–	373 (26)	–	–	Garlic, onions, red peppers, dairy products
E[d]	21 (0.2)	–	21 (1.5)	–	–	Rice, apples, pears
Total	**11 170**	**9 102**	**1 432**	**237**	**399**	

Source: Hae-kwan Chung (2003).

Notes: Unit: 10-digit HS codes, %.

[a] Liberalization over a transitional period of 10 years on a seasonal basis.

[b] Liberalization with tariff quota.

[c] Tariff elimination schedule will be negotiated after the end of the Doha Development Agendas of WTO.

[d] Customs duty applied will not be eliminated.

consider adjustments to tariffs applied to reciprocal trade. Such types of provisions can potentially make bilateral agreements an obstacle to multilateral negotiations.

(d) Thailand-Japan

After hitting several snags in the negotiations, the Thailand-Japan FTA has been signed for enforcement in the near future. The main battlefront, as usual, was agriculture.

Of the ASEAN countries, Thailand is the biggest exporter of agricultural and fisheries products to Japan, even if nearly half of its current annual agricultural exports face market access restrictions. Predictably, Thailand pushed for greater market access for its farm products in the Japan-Thailand bilateral trade agreement. However, Japan finds it practically impossible to scrap tariffs on imported rice and sugar because it would hurt the economies of Okinawa and Hokkaido.

The compromise agreement was to exclude rice and sugar together with other products from the current agreement, and to renegotiate those after five years (table 5). Chicken meat, another contentious product, would however have its tariffs lowered from 6 per cent to 3 per cent in five years. In exchange for the exclusion of rice and sugar, Japan did not manage to pry the Thai car market wide open especially for Japanese luxury cars.

While it appears that Japan proposed import tariff cuts on more than 500 food and farm products, actual market access benefit depends on negotiations on rules of origin and reduction of food safety standards in Japan.[8] At the time of preparing this paper, however, no information was publicly available about the final agreement on rules of origin and safety standards, except that Japan would provide technical assistance to improve food safety in Thailand as part of the efforts to increase Thai exports of meat and other foodstuffs.

Table 5. Thailand-Japan FTA highlights: Agricultural, fishery and forestry products

Tariff Elimination Schedule	Timeline
A. Japan's Schedule	
1. Products covered	
A. Agricultural Products	
Mangoes, mangosteens, durians papayas, rambutan, okra, coconuts	Immediate
Fresh bananas	
in-quota rate	Duty-free
TRQ quantity	Year 1 – 4,000 metric tons Year 5 – 8,000 metric tons
Fresh pineapples	
in-quota rate	Duty-free
TRQ quantity	Year 1 – 100 metric tons Year 5 – 300 metric tons
Fresh, frozen vegetables	Tariff elimination within 5-10 years
Mixed fruit, fruit salad and fruit cocktail prepared, preserved	Immediate
Prepared, preserved chicken meat Prepared, preserved pork and ham	Tariff reduction from 6 per cent to 3 per cent in years
in-quota rate	Immediate reduction by 20 per cent of MFN rate
TRQ quantity	1,200 metric tons from the first year
Rice bran oil	Tariff reduction by 55.5 per cent in 5 years
Pet food	Tariff elimination in 10 years

[8] For example, Japan currently bans imports of live chickens and raw meat from Thailand for quarantine reasons; only meat cooked at designated food processing facilities is allowed entry.

Table 5 *(continued)*

Tariff Elimination Schedule	Timeline
Cane molasses in-quota rate TRQ quantity	TRQ on the third year Reduction by 50 per cent of out-quota rate Year 3 – 4,000 metric tons Year 4 – 5,000 metric tons
Esterified starch in-quota rate TRQ quantity	 Duty-free 200,000 metric tons from first year
B. Fishery Products Shrimp and prawn prepared, preserved and frozen or boiled shrimps and prawn	 Immediate
Fish Fillet and jellyfish,	Tariff elimination in 5 years
fresh and frozen Mongo lka Prepared, preserved tuna, skipjack, other bonito and crab	 Tariff elimination in 5 years
C. Forestry Products Forestry products other than plywood, particle board and fibreboard	 Immediate
Particle board and fibreboard	Tariff elimination in 10 years
2. Exclusion or for Re-negotiation Rice, wheat, barley, fresh, frozen and chilled beef and pork, raw cane and beet sugar, refined sugar, starches, canned pineapple, plywood, fishery products under import quota, tuna and skipjack, most items of prepared beef and pork	
B. Thailand's Schedule ***1. Products covered*** A. Agricultural Products Apples, pears and peaches	 Immediate
B. Fishery Products Yellowfin tuna, skipjack tuna, sardines, herrings, cod	 Tariff elimination in 5 years Immediate
2. Exclusion or for Re-negotiation Mackerel, tobacco, raw silk, bird's egg, dried egg yolks, etc.	

Source: Japan-Thailand FTA, Attachment 2.

4. Preferential trading arrangements versus multilateral trade

The various ways that agriculture exceptions are accommodated in PTAs includes permanent or temporary exceptions, flexible timelines for adjustments and less stringent discussions on non-tariff measures.

This special treatment of agriculture has both a positive and negative side. On the positive side, the ability to remove any sensitive agriculture subsectors out of the discussion allows the negotiations to move forward, focusing on other sectors that can give mutual benefits and preventing a lengthy delay, as in the case of multilateral talks. PTA negotiations, therefore, become simpler and faster relative to WTO, not only because there are fewer parties to talk with and convince, but also because it is easier to agree on temporary exclusions of highly sensitive sectors. Scollay (2003a) even argued that for trading partners that were non-competitive in agriculture, such exclusion reduced the trade diversion that was associated with preferential trading arrangements, hence making PTAs more welfare enhancing. Allowing exclusions, therefore, could be mutually beneficial.

Moreover, other experts claim that even with the extended time for liberalization or permanent exclusion of sensitive agricultural products, PTAs still prepare the way for future multilateral liberalization, as they condition the political economy to the workability of a liberalized environment. In fact, some PTAs reflect progress in traditionally difficult sectors such as rice and sugar by using this extended timeframe strategy, without which these products would never have found their place on the negotiating table. For example, for many Asian countries, rice is a politically sensitive product that they would rather not bring into trade negotiations; yet, under PTAs, these types of product have been included in the country schedules and timelines for liberalization.

The negative side of PTAs is that they encourage economies to focus increasingly on such negotiations at the expense of their commitment to multilateralism. Given the low number of government officials who are knowledgeable about trade, neither PTAs nor WTO negotiations would receive the same adequate level of attention, with multilateral negotiations normally taking the back seat. Moreover, with different countries having different sensitive agricultural subsectors excluded from liberalization, the future harmonization of different PTAs also becomes bleaker, thereby possibly locking countries into the current spaghetti bowl trading system. For example, a bilateral agreement that excludes rice from liberalization would be difficult to expand to an Asia-wide agreement unless other countries, such as Thailand, likewise agree to exclude rice.

B. Effect on agriculture protection structure

This section and the subsequent section discuss the effect of PTAs on the protection structure and trade flows. Since many of the PTAs in East Asia are relatively recent phenomena, an econometric ex post analysis of their impact on trade is not possible. Instead, therefore, the focus is on the effect of the ASEAN FTA, which is the original free trade agreement in the region.

What can be generally observed from the tables and graphs in this section is the significant progress made in lowering tariffs in AFTA compared to each country's MFN rates. To analyse the effect of AFTA on the protection structure of ASEAN member countries, the Harmonized System tariff schedules available from UNCTAD and the World Bank have been used. Although the majority of the tariff schedules are only detailed as far as eight digits, some are as detailed as 10 digits.[9] For computation of means and tariff distribution, the raw data of tariffs up to whatever digits are available have been used. However, for weighted tariffs, the tariffs have been averaged up to a six-digit classification to harmonize them with six-digit trade data. Since trade protection is not only achieved by way of tariffs, the analysis is supplemented by a brief discussion of other non-tariff measures.

1. Mean and median tariffs

When looking at figure I, it is immediately evident that the AFTA agriculture tariff has produced an enormous improvement over its MFN equivalent. While the average MFN agriculture tariff for Indonesia and the Philippines is more than 11 per cent, it is roughly 4 per cent and 3 per cent in CEPT, respectively. Thailand's concessions in CEPT are even more pronounced, with a mean tariff of 4 per cent compared with more than 29 per cent MFN. Brunei Darussalam and Singapore, of course, have always had liberal trade policies, whether in the multilateral or regional stage. The analysis of standard deviations of tariff lines (not shown) also confirms that CEPT had lowered the dispersion of tariffs; while the average standard deviation of MFN tariffs is 12 per cent, that of CEPT is only 2 per cent.

The fact that in Indonesia and the Philippines the MFN means are greater than MFN medians indicates the simultaneous presence of a large number of tariff lines that are far below the means as well as a few tariff lines with very high rates. This phenomenon, commonly called tariff peaks, typically results from the application of very high tariffs on a small group of sensitive products while the rest of the tariffs are kept at low levels. In ASEAN, the fact that certain products such as rice remain outside the ambit of tariff reduction illustrates the tariff peaks that still exist in AFTA. Table 6 shows that whatever tariff peaks exist, they occur in agriculture. In Indonesia, 19 products out of 25 highly sensitive products – hence temporarily exempted from tariff reduction – are agricultural products, while another 60 agricultural products are classified under the General Exclusion List. In the Philippines, all 19 sensitive products are agricultural ones.

2. Tariff distribution

MFN and CEPT tariff distribution is examined next. Figure II shows that AFTA successfully reduced tariff rates below 5 per cent for almost 99 per cent of tariff lines (both agriculture and industry), of which almost half were already traded tariff-free. In contrast, MFN applied rates appear to be relatively more concentrated in the 5-20 per cent range,

[9] In the HS classification, chapters are two digits, headings are four digits, and subheadings are six digits. The first six digits are harmonized under the HS system, but countries assign the last two digits, and thus they are no longer uniform across countries.

Figure I. Comparative tariff structure of ASEAN 6 in agriculture based on MFN and CEPT rates at HS 8 digit level

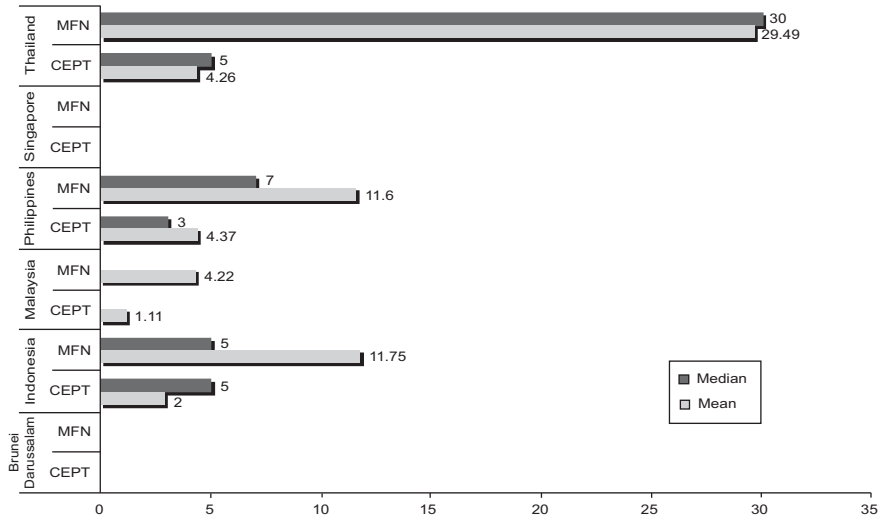


Table 6. Sensitive and exclusion lists in AFTA

	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand
Total tariff lines	**10 702**	**11 153**	**10 387**	**11 059**	**10 705**	**11 125**
Sensitive/highly sensitive	–	25	–	19	–	–
Percentage of total tariff lines	–	0.2	–	0.2	–	–
of **which agriculture**	–	**19**	–	**19**	–	–
General exclusion list	778	100	–	27	–	–
Percentage of total tariff lines	7	1	–	0.2	–	–
of **which agriculture**	**80**	**60**	–	–	–	–
Mixed rate	–	–	–	–	–	157
Specific rate	23	–	–	–	–	–

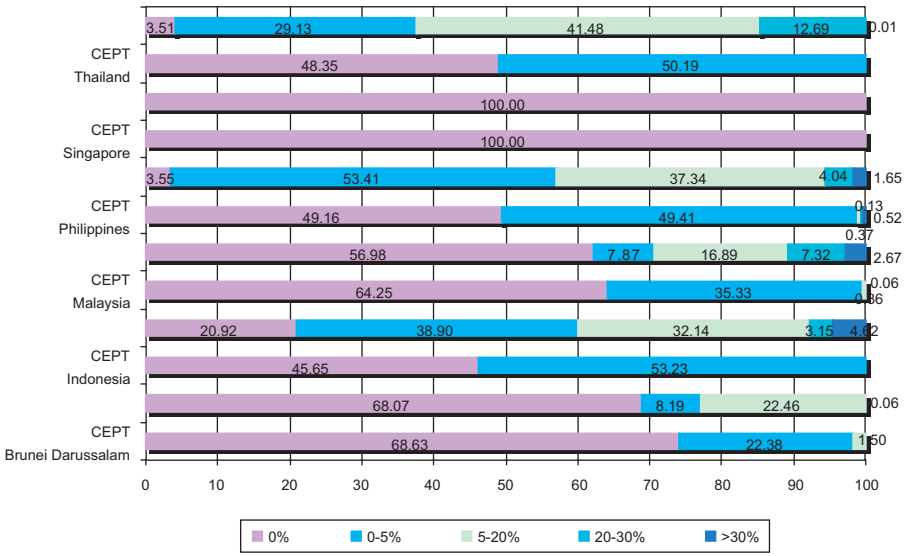
Source: Author's calculation based on WITS data.

Note: For Malaysia, no information is available regarding that country's sensitive and exclusion lists in AFTA.

with a few products still exceeding the 30 per cent tariff rate. In the case of Indonesia, the highest tariffs are still levied on almost 5 per cent of products while for Malaysia the figure is 3 per cent and for the Philippines, 2 per cent.

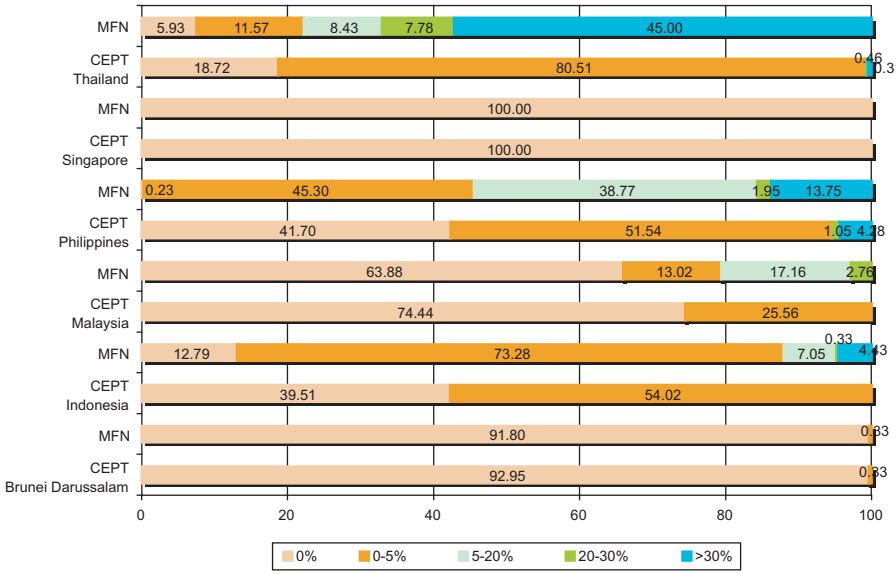
A slightly different picture emerges from the tariff distribution analysis of agriculture tariff lines alone (figure III). Unlike figure II, relatively less concentration on the zero per cent tariff in CEPT is shown in figure III, with the exception of Brunei Darussalam and

Figure II. Percentage distribution of CEPT and MFN tariff rates, ASEAN



Source: ASEAN Secretariat and WITS.

Figure III. Percentage distribution of CEPT and MFN tariff rates of agricultural products (HS 8) in ASEAN countries



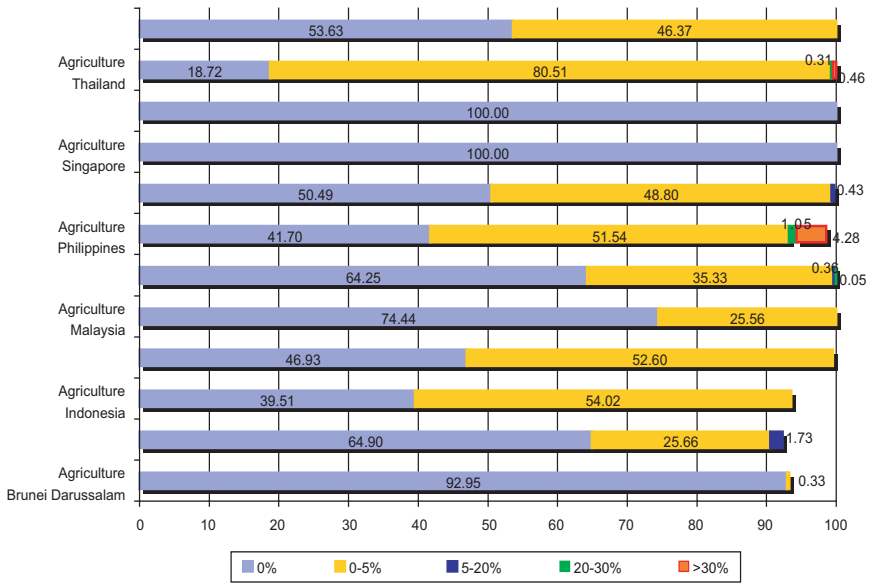
Source: ASEAN Secretariat and WITS.

Singapore. Still, CEPT is again proved successful in that more than 90 per cent of agriculture products are, likewise, below the 5 per cent tariff rate. Among the ASEAN 6, the Philippines has the highest number of agriculture tariff lines (about 5 per cent) with CEPT rates higher than 20 per cent.

MFN agriculture tariff concentration is, not surprisingly, in the higher tariff rate range. Malaysia and Indonesia have 76 and 85 per cent, respectively, of tariff lines below 5 per cent, while for the Philippines and Thailand the concentration is only 45 and 17 per cent, respectively. The latter two countries also have the highest number of tariff lines with the highest tariff rates: 45 per cent of the agriculture tariff lines in Thailand and 14 per cent in the Philippines have more than 30 per cent tariffs. However, unlike Thailand, which has around 6 per cent of tariff lines at zero per cent, practically no products enter the Philippines tariff-free.

A comparison of agriculture and industry tariff distribution within CEPT illustrates yet another interesting contrast. Figure IV shows that ASEAN countries liberalized industry faster than agriculture. The concentration of industrial goods that are traded tariff-free within ASEAN is higher than that of agriculture products. Moreover, less than 1 per cent of industrial goods still have tariff rates higher than 5 per cent, while the percentage share for agriculture is higher (e.g., the Philippines, 5 per cent; Thailand, close to 1 per cent).

Figure IV. Percentage distribution of CEPT tariff rates for agricultural and industrial products in ASEAN 6



Source: ASEAN Secretariat.

3. Imposed tariffs

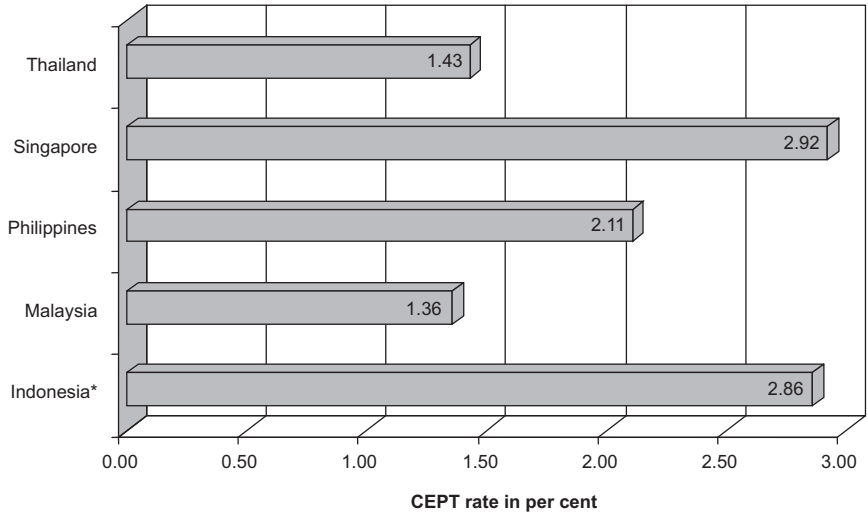
A question that may be asked is whether ASEAN countries have brought down the tariff rates of "insignificant" products while maintaining high tariff rates for the export interests of partner countries in AFTA. To evaluate whether or not this is the case, the export-weighted or imposed tariffs of each country – that is, the tariff rates of the imposing country multiplied by the export share per tariff line of the partner economy – were measured. The assumption is that if all of a country's exports go to one partner country, the weighted tariff is the average amount of tariff that is faced by the economy of the exporting country; conversely, the weighted tariff can show the average amount of tariff that the importing country imposes on the exporting country. If the imposed tariff rates are higher than the simple tariff average, it can mean that the importing country may have lowered tariffs on products that are not so beneficial to the exports of the partner country, hence possibly reflecting irrational tariff liberalization. Put another way, if a high tariff is imposed on a major export product while a low tariff is levied on a non-exported product, the export weighted tariff is likely to be higher than average.

(a) Export-weighted tariffs

Figures Va to Vd, which are based on the comparison of a simple tariff average and imposed tariffs, show a somewhat mixed result. The CEPT export-weighted agriculture tariffs of Thailand against Singapore and Malaysian products, for example, are higher than its simple average, but lower for products of Indonesia and the Philippines. In contrast, the Philippines' imposed tariff on Thai agriculture products is much higher than its simple average of 4.37, while it is lower for products from Indonesia. Malaysia's imposed tariff is highest for Indonesia. This result may also reflect the fact that one country's major exports are likewise the importing country's major exports and protected sector, as in the case of Malaysia and Indonesia, or Thailand and the Philippines. Put differently, cases where the imposed tariff exceeds the simple average may reflect the lack of complementarity of agricultural exports among subgroups or pairs of ASEAN countries, or merely that the export interest of one country is well protected in the domestic market of another.

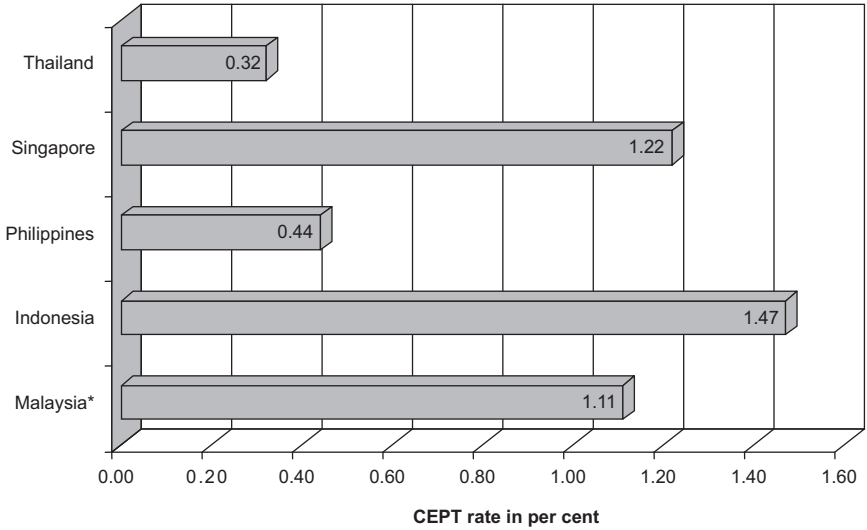
In contrast, non-ASEAN export markets like Australia, United States, the Republic of Korea and Japan have imposed tariffs on ASEAN agriculture products that are less than the simple averages in these respective countries (Figure VI). The Republic of Korea's simple average agriculture tariff of 56.43 per cent, for instance, is greater than imposed tariffs on Philippines, Malaysia, and Indonesia but lower than that on Thailand. This shows possible complementarity of agriculture exports between the Republic of Korea and the three ASEAN countries, but possible competition with Thai products. China's imposed tariffs on ASEAN (except the Philippines), on the other hand, are greater than its simple average tariff, which means that China's domestic market is well protected from competition from ASEAN agriculture products.

Figure Va. Indonesian agriculture tariffs imposed on ASEAN



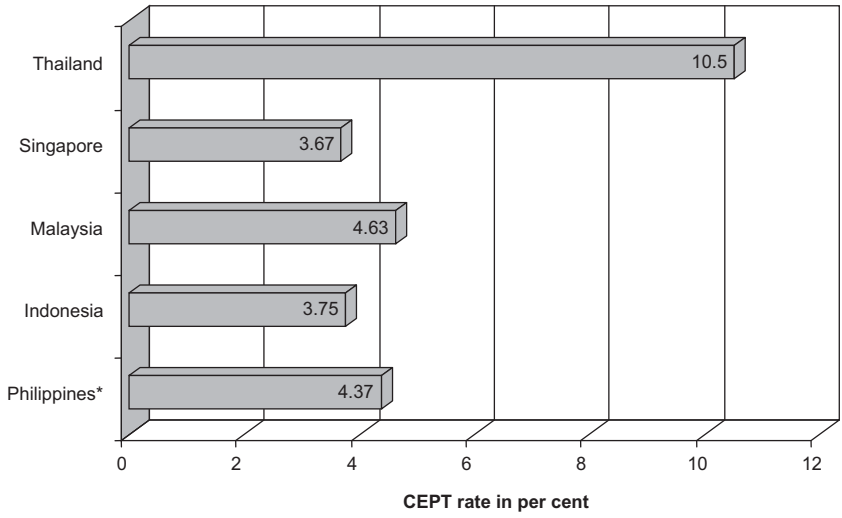
Sources: UNCTAD PC-TAS and WITS.
* Simple average rate

Figure Vb. Malaysia's agriculture tariffs imposed on ASEAN



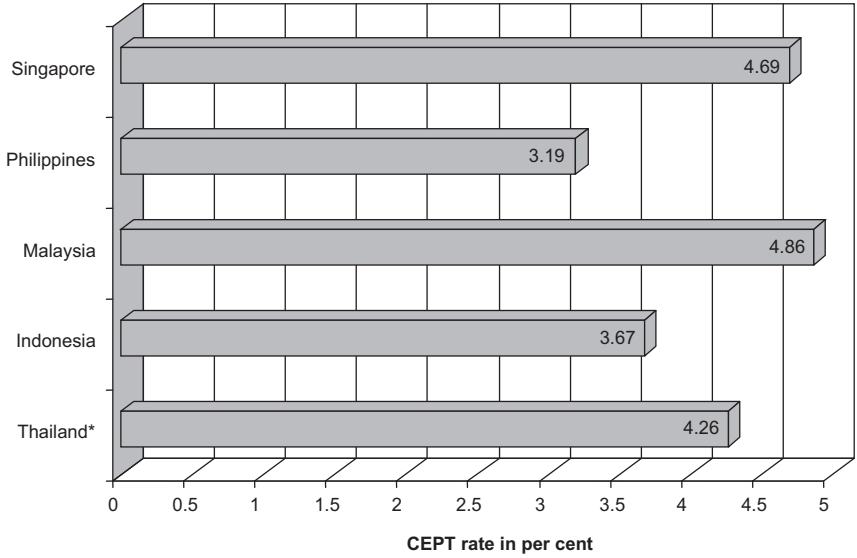
Sources: UNCTAD PC-TAS and WITS.

Figure Vc. Philippines agriculture tariff imposed on ASEAN



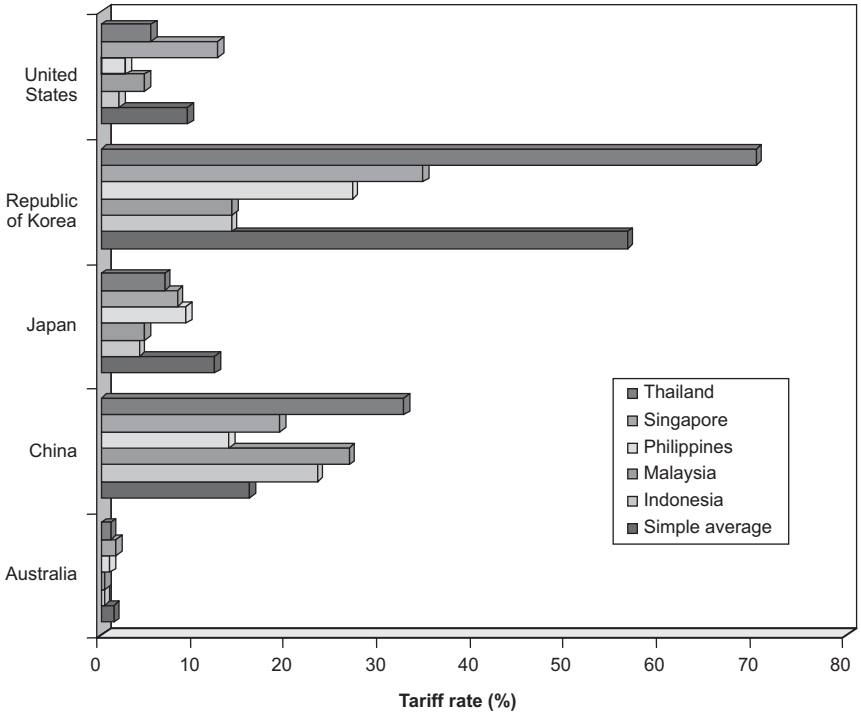
Sources: UNCTAD PC-TAS and WITS.

Figure Vd. Thai agriculture tariff imposed on ASEAN



Sources: UNCTAD PC-TAS and WITS.

Figure VI. Tariffs imposed by non-ASEAN countries



Source: Author's calculation based on WITS data.

(b) Incidence of tariffs on top exports

Table 7 illustrates why some countries receive higher export-weighted tariffs than other countries. In general, the table shows that, of the top 10 agriculture exports of each ASEAN country, most already receive CEPT tariffs of 5 per cent or lower, except for a sprinkling of a few products. These few exceptions are: (a) Indonesian coffee exports (HS 090111), which, in Thailand, face a 40 per cent tariff; (b) Malaysian sugar exports (HS 170199) which, in the Philippines, face a tariff of 29 per cent; and (c) Thai sugar, fowl and cassava exports, on which the Philippines impose high tariffs. The latter result explains why the tariff imposed by the Philippines on Thai agricultural products is 10.5 per cent , which far exceeds its simple average of 4.37 per cent.

4. Relative tariff ratio index

The relative tariff ratio (RTR) index, originally developed by Sandrey (2000), is a summary measure that helps evaluate the effects of trade liberalization in a bilateral negotiation. The index considers the bilateral protection between two countries where each tariff line of country A is weighted by country B's total exports to the world for the

Table 7. CEPT and MFN tariffs on top ASEAN agricultural exports

HS Code	Product description: Top 10 agricultural exports of ASEAN	Trade value	Share to agricultural exports	Malaysia		Philippines		Thailand	
				CEPT	MFN	CEPT	MFN	CEPT	MFN
	Indonesia								
151190	Palm oil and its fractions refined but not chemically modified	1 392 411	0.25	5	5	5	15	0	5
151110	Palm oil, crude	1 062 215	0.19	0	0	3	15	0	5
180100	Cocoa beans, whole or broken, raw or roasted	410 278	0.07	0	0	3	3	5	27.3
090111	**Coffee, not roasted, not decaffeinated**	**250 882**	**0.05**	**0**	**0**	**5**	**35**	**40**	**40**
151321	Palm kernel or babassu oil, crude	206 242	0.04	0	0	3	15	0	5
240220	Cigarettes containing tobacco	135 550	0.02	0	0	5	10	5	60
180400	Cocoa butter, fat and oil	118 340	0.02	0	25	0	3	5	10
151311	Coconut (copra) oil crude	99 368	0.02	0	5	3	10	0	5
090411	Pepper of the genus Piper, ex cubeb pepper, neither crushed nor ground	93 203	0.02	0	0	5	12	5	30
090240	Black tea (fermented) and partly fermented tea in packages exceeding 3 kg	90 509	0.02	5	25	0	3	5	60
	Malaysia			**Indonesia**		**Philippines**		**Thailand**	
151190	Palm oil and its fractions refined but not chemically modified	4 117 561	0.50	0	0	5	15	5	0
151620	Vegetable fats and oils and fractions, hydrogenated, inter/re-esterified,etc. ref	753 520	0.09	5	10	2.7	13.9	5	27.3
151110	Palm oil, crude	512 078	0.06	0	0	3	15	5	0
151329	Palm kernel/babassu oil their fract refined but not chemically modified	241 966	0.03	0	0	5	15	5	0
180400	Cocoa butter, fat and oil	147 808	0.02	5	5	0	3	5	10
151790	Edible mx/preparations of animal/vegetable fats and oils or fractions ex hd No. 15.16	121 936	0.01	1.8	5	3	15	5	30
240220	Cigarettes containing tobacco	111 143	0.01	5	15	5	10	5	60
170199	**Refined sugar, in solid form, nes**	**96 307**	**0.01**	**0**	**0**	**28.8**	**34.9**	**5**	**0**
210690	Food preparations nes	90 326	0.01	5	47.6	2.7	5.9	4.9	25.7
230660	Palm nut/kernel oil-cake and other solid residues, whether or/not ground or in pellet form	88 168	0.01	0	0	3	15	5	9.1

Table 7 *(continued)*

HS Code	Product description: Top 10 agricultural exports of ASEAN	Trade value	Share to agricultural exports	Malaysia		Philippines		Thailand	
				CEPT	MFN	CEPT	MFN	CEPT	MFN
	Philippines			**Indonesia**		**Malaysia**		**Thailand**	
151311	Coconut (copra) oil crude	399 436	0.22	0	0	0	5	5	0
080300	Bananas including plantains, fresh or dried	333 000	0.18	5	5	0	0	0	42
151319	Coconut (copra) oil and its fractions, refined but not chemically modified	105 424	0.06	0	0	0	5	5	0
080111	Coconuts, dessicated	95 745	0.05	0	5	5	20	0	54.6
200820	Pineapples nes, o/w preparation or preserved, sugared, sweetened, spirited or not	84 279	0.05	5	5	0	10	5	60
170111	Raw sugar, cane	62 023	0.03	0	0	0	0	5	0
040229	Milk and cream powder sweetened exceeding 1.5 per cent fat	57 160	0.03	0	5	0	0	0	5
130239	Mucilages and thickeners nes, modified or not, derived from vegetable products	47 167	0.03	0	5	0	0	5	20
200940	Pineapple juice, unfermented and not spirits, whether or not sugared or sweet	46 810	0.03	0	0	0	30	0	0
080450	Guavas, mangoes and mangosteens, fresh or dried	44 734	0.02	0	5	5	0	0	42

Code	Product description: Top 10 agricultural exports of ASEAN	Trade value	Share to agricultural exports	Indonesia		Malaysia		Philippines		Thailand	
	Singapore										
240220	Cigarettes containing tobacco	346 687	0.13	5	15	0	0	5	10	5	60
220820	Spirits obtained by distilling grape wine or grape marc Palm oil and its fractions refined but not chemically	161 788	0.06	0	170	0	0	5	10	5	60
151190	modified	126 150	0.05	0	0	5	5	5	15	5	0
210690	Food preparations nes	108 417	0.04	5	47.6	3.2	11	2.7	5.9	5	25.7
220410	Grape wines, sparkling	88 877	0.03	0	170	0	0	0	5	5	54.6
210111	Coffee extracts, essences, concentrates	82 359	0.03	5	5	0	5	5	37.5	5	49.6
240310	Smoking tobacco, whether or not containing tobacco substitutes in any proportion	73 602	0.03	5	15	0	0	5	7	5	60
220300	Beer made from malt	67 854	0.03	0	40	0	0	5	15	5	60

Table 7 *(continued)*

HS Code	Product description: Top 10 agricultural exports of ASEAN	Trade value	Share to agricultural exports	Indonesia		Malaysia		Philippines		Thailand	
190190	Malt extract and food preparation of Ch 19 <50% cocoa and hd 0401 to 0404 < 10% cocoa	64 866	0.02	4.7	5	2.8	5	3.1	4.3	4	18
220830	Whiskies	57 418	0.02	0	170	0	0	5	15	5	60
	Thailand			**Indonesia**		**Malaysia**		**Philippines**			
100630	Rice, semi-milled or wholly milled, whether or not polished or glazed	1 572 222	0.20	0	0	0	0	S	50		
020714	**Fowl (gallus domesticus), cuts and offal, frozen**	**597 883**	**0.07**	**0**	**5**	**0**	**0**	**40**	**40**		
170199	**Refined sugar, in solid form, nes**	**502 369**	**0.06**	**0**	**0**	**0**	**0**	**28.8**	**34.9**		
170111	**Raw sugar, cane**	**425 678**	**0.05**	**0**	**0**	**0**	**0**	**48**	**57.5**		
160232	Fowl (gallus domesticus) meat, prepared/preserved	379 281	0.05	0	5	0	0	5	40		
200820	Pineapples nes,o/w prep or preserved, sugared, sweetened, spirited or not	282 515	0.04	5	5	0	10	5	10		
230910	Dog or cat food put up for retail sale	273 948	0.03	0	0	0	0	0	5		
210690	Food preparations nes	257 536	0.03	5	47.6	0	11.4	2.7	5.9		
071410	**Manioc (cassava), fresh or dried, whether or not sliced or pelleted**	**252 468**	**0.03**	**2.5**	**5**	**5**	**5**	**35**	**40**		
100640	Rice, broken	225 428	0.03	0	0	0	0	0	50		

Sources: ASEAN Secretariat, UNCTAD – PC-TAS.

same tariff line, and vice versa. The index is the ratio of the tariffs faced by the country (in the numerator) and its imposed tariffs (in the denominator) (Jank and others, 2003). A ratio close to 1 means that countries compared have similar tariff protection or that the tariff barriers are comparable.[10]

[10] $RTR_{AB} = [\sum_i^n (X_i^B * Y_i^A)] / [\sum_i^n (X_i^A * Y_i^B)]$ where A and B are countries, X_i are the ad valorem tariffs for product *I*, Y_i is the share of exports of product i in total exports, and n is the number of tariff lines. For agriculture RTR, n considers only the number of tariff lines regarded as part of agriculture under the World Trade Organization definition. The value of the numerator is the faced tariff of country A from B while the denominator is the imposed tariff of country A on B. For agriculture RTR, the trade share Y_i is computed as the product share in total agriculture exports; for industry RTR, it is the share in total industrial exports.

The main RTR index advantage is that it summarizes a large amount of trade flow and tariff level data into a concise number that is easy to interpret. It can be an excellent instrument for measuring progress in PTAs. However, the index is mostly influenced by sensitive or major exported products and major trading partners.[11]

Table 8 presents the agriculture relative tariff ratio index of ASEAN agriculture exporting countries. The table does not reflect the level of tariffs but only their relative ratios. A ratio between, say, Indonesia and Malaysia, of 1.08 means that for every percentage point that Malaysia faces in Indonesia (or that Indonesia imposes on Malaysia), Indonesia faces 1.08 points in Malaysia. This ratio is close to one that indicates the bilateral protection between the two countries is comparable. The table also reveals that countries with a bigger percentage of high tariffs, such as the Philippines or Thailand, tend to have CEPT RTR that are less than 1 vis-à-vis their other ASEAN trading partners, whether agriculture or industry. Generally, this implies that those countries impose higher tariffs on agricultural products than tariffs they face in trading partners. Conversely, Malaysia and Indonesia (which have practically all their tariffs capped at 5 per cent) have RTR ratios greater than 1; that is, they face more protection than that which they impose.

In the MFN column, the general picture is that of relatively greater domestic protection in ASEAN markets vis-à-vis non-ASEAN countries. Almost all RTRs are less than 1, meaning that ASEAN countries face relatively less protection than they impose, except for China and the Republic of Korea in the agricultural market. Indonesia, Malaysia and Thailand face higher relative protection in China, while Malaysia, the Philippines and Thailand face relatively higher protection in the Republic of Korea. In industry, Indonesia and the Philippines face higher protection in Japan than that which they impose on Japanese industrial goods, while Thailand has a broadly comparable protection level.

C. Effect of AFTA on trade

This section first reviews the literature on the effect of PTAs on trade flows. Most of these types of studies use gravity models to assess empirically the importance of trade agreements on bilateral exports. Fortunately, some of these studies have applied the gravity equation to test the effectiveness of AFTA. The section then tackles intra- and extra-ASEAN trade in agriculture, and closes with a brief discussion of non-tariff measures.

1. Results of past studies

Academics have always been concerned about the trade diversion effects of preferential trading arrangements that, in some cases, can fully offset the positive benefits from trade creation. However, various empirical works using gravity models have, until

[11] M. Jank, I. Fuchsloch and G. Kutas, 2003, summarized the weaknesses of RTR as including the fact that it ignored elasticity effects and substitution possibilities when tariff barriers were decreased. The index does not account for many non-tariff measures and subsidies, and may be unrealistic for some least developed countries

Table 8. Relative tariff ratio index in ASEAN 4 by type of commodity

Relative Tariff Ratio Index								
	Indonesia		Malaysia		Philippines		Thailand	
	CEPT	MFN	CEPT	MFN	CEPT	MFN	CEPT	MFN
Agricultural commodities								
Indonesia			0.93	1.01	0.56	0.64	0.23	0.35
Malaysia	1.08	0.99			0.1	0.41	0.07	0.34
Philippines	1.78	1.56	10.52	2.44			3.29	1.04
Thailand	4.39	2.86	15.19	2.97	0.3	0.96		
Australia		0.02		0.34		0.15		0.04
China		3.63		6.13		0.87		1.13
Japan		0.26		0.69		1.07		0.22
Republic of Korea		0.69		1.14		2.26		1.99
United States		0.27		2.01		0.26		0.24
Industrial commodities								
Indonesia			1.6	0.44	0.33	0.49	1.51	0.68
Malaysia	0.63	2.28			0.33	1.43	0.96	1.51
Philippines	3.05	2.06	3.02	0.7			2.6	0.9
Thailand	0.66	1.47	1.04	0.66	0.38	1.11		
Australia		0.91		0.24		0.55		0.58
China		0.89		0.42		0.51		0.6
Japan		2.8		0.59		1.75		1
Republic of Korea		0.65		0.18		0.39		0.32
United States		0.38		0.1		0.29		0.23
All commodities								
Indonesia			1.52	0.47	0.35	0.48	1.07	0.62
Malaysia	0.66	2.14			0.29	1.16	0.73	1.34
Philippines	2.89	2.10	3.50	0.86			3.11	1.09
Thailand	0.93	1.61	1.37	0.75	0.32	0.92		
Australia		0.53		0.30		0.54		0.35
China		1.10		0.59		0.57		0.71
Japan		2.90		0.89		2.52		1.41
Republic of Korea		0.77		0.23		0.62		0.77
United States		0.38		0.14		0.28		0.24

Source: Author's calculation based on WITS data.

Note: The figures should be read as shown in the following example: Column under Indonesia – for every 1 percentage point protection that Malaysia faces in Indonesia, Indonesia faces 1.08 percentage points in Malaysia.

recently, found net trade creation from most PTAs. This means that the adverse impact on non-members of PTAs (trade diversion) is more than offset by the benefits created for members (trade creation). In fact, in AFTA, studies have not found any necessarily negative effect on countries outside the bloc, or where there is such an impact, trade diversion is small relative to trade creation.[12]

Table 9 shows various past estimates of trade diversion (normally the estimate of the Dummy 2 coefficient).[13] Unlike other PTAs such as NAFTA, which yield negative coefficients, AFTA shows positive coefficients. These results suggest that AFTA has not discriminated against imports from outside the ASEAN bloc; it is, therefore, considered a building bloc, not a stumbling bloc, to multilateral trade.

One of the reasons why AFTA has shown little trade diversion could be the fact that when AFTA was launched in 1993, the ASEAN member countries had already embarked on major unilateral non-discriminatory trade liberalization. As a result, the difference in import barriers against ASEAN and non-ASEAN products is low, as shown in the average margin of preference (table 10) for intra-ASEAN imports. Except for Thailand, the average margin of preference is in the single digit range for all countries. Thailand and the Philippines have a relatively high MFN-CEPT difference for agriculture, while Thailand and Malaysia have a high margin of preference for industrial products.

Another possible reason is that ASEAN countries, as a whole, have been the production base for multinational companies, with vertically integrated operations within the region, whose products were ultimately destined for outside the region, especially the United States and Japan. Hence, trade volumes with non-ASEAN countries were hardly affected after AFTA. If anything, it even facilitated trade outside the region by lowering the transaction costs of trade in industrial inputs within ASEAN and by making the vertical integration of MNCs seamless.

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[12] Past studies also support the hypothesis of a natural trading bloc within East Asia, which includes ASEAN plus China, Japan and the Republic of Korea. Simulation studies show that should ASEAN plus 3 (APT) integration take place, Australia would find itself on the losing side, thus it is intent on being included in a possible East Asian trading bloc.

[13] The gravity model is the key econometric technique used to examine the determinants of bilateral trade flows. In brief, trade between two countries is positively related to their size and inversely related to the distance between them. A number of other explanatory variables are added to this model. Critical for trade creation and trade diversion tests are the PTA-specific dummy variables. The first dummy variable takes the value of 1 when the two countries are members of the same PTA. The second dummy variable is 1 if either country in a particular pair belongs to a PTA. A positive coefficient on the first dummy variable indicates that the PTA enhances intra-bloc trade; thus, it is trade creating. A negative and significant coefficient for the second dummy variable suggests that the PTA leads to trade diversion. The sum of the two coefficients indicates whether there is a net trade creation or net trade diversion, or whether the PTA is a building bloc or a stumbling bloc. R. Adams, P. Dee, J. Gali and G. McGuire (2003) provide an incisive explanation of the gravity models as used in the trade literature. Note that trade creation and trade diversion here is understood only in terms of trade flows, not in terms of welfare changes.

Table 9. Past estimates of trade creation and diversion effects of ASEAN FTA

Authors	Year	Static estimates			
		Dummy 1 (trade creation)	Dummy 2 (trade diversion)	Dummy 3 (trade diversion)	Second wave[a]
Frankel, 1997	1970-1992	1.318[d]	0.767[d]		BB
Fink and Primo Braga, 1999	1989	2.476[d]			
Krueger, 1999	1986-1996	0.78[b]	0.16[b]		BB
Li, 2000	1970-1992	1.311[d]	0.653[d]		BB
Clark and Tavares, 2000	1995	1.673[b]	0.489[b]		BB
Gilbert, Scollay and Bora, 2001	1984-1998 (merch.)	0.65[d]	0.54[d]		BB
	1984-1998 (manf.)	0.63[d]	0.54[d]		BB
	1984-1998 (agr.)	0.32[d]	0.45[d]		BB
	1997 (services)	1.08[d]	1.01[d]		BB
I. Soloaga and L.A. Winters, 2001	1986-1988	0.18	0.15	0.70[d]	BB
	1989-1994	0.09	0.30[c]	0.67[d]	BB
	1995-1996	-1.06[d]	0.82[d]	0.99[d]	BB

Sources: J. Frankel, E. Stein and S. Wei (1995); J. Frankel (1997); A. Krueger (1999); Q. Li (2000); X. Clark and J. Tavares (2000); J. Gilbert, R. Scollay and B. Bora (2001); and I. Soloaga and L.A. Winters (2001). As cited in R. Adams and others (2003). I. Soloaga and L.A. Winters (2001) used a third dummy variable to indicate export diversion, i.e., while dummy 2 is 1 for imports from extra-bloc countries (country *i* is in the PTA), dummy 3 is 1 for exports from extra-bloc countries (country *j* is in the PTA).

Note: [a] Denotes whether a PTA is building block (BB) or stumbling block (SB) – the second wave issue – based on "net trade effects" of a PTA; that is, the sum of intra-bloc and extra-bloc effects.

[b] Denotes the significance at the 10 per cent level;

[c] Denotes the significance at the 5 per cent level; and

[d] Denotes the significance at the 1 per cent level.

Most of the gravity model results above, however, use total trade in the equation, not just agriculture trade. Of these, only Gilbert, Scollay and Bora (2001) disaggregated the AFTA effect on agricultural, manufacturing and services trade. Interestingly, their empirical work revealed that while there was a net positive effect on both agriculture and manufactures trade, the impact on agriculture declined after 1992 and is of lesser statistical significance. Hence, the authors concluded that ASEAN had only been successful in promoting manufactures trade, but not trade in agriculture. Moreover, within ASEAN, net benefits had not been uniform across countries. Higher-income ASEAN countries, especially Malaysia and Singapore, took the greatest gain in trade diverted towards the region and supplied the bulk of increased interregional demand for manufactures.

However, results more recently produced from gravity equations have shown a different conclusion. Adams and others (2003) employed a dynamic gravity model on panel data and found that, unlike many previous studies, trade diversion outweighed trade creation in most PTAs, including those that were initially found to be building blocks, such

Table 10. Margin of preference by type of commodities

	Margin of preference* (%)
Agricultural commodities	
Brunei Darussalam	0.00
Indonesia	1.53
Malaysia	1.99
Philippines	6.71
Singapore	0.00
Thailand	26.05
Industrial commodities	
Brunei Darussalam	3.00
Indonesia	3.80
Malaysia	7.08
Philippines	4.68
Singapore	0.00
Thailand	11.60
All commodities	
Brunei Darussalam	1.00
Indonesia	2.10
Malaysia	4.35
Philippines	5.68
Singapore	0.00
Thailand	14.20

Source: Author's calculation based on ASEAN Secretariat data.
* The average difference between the MFN and CEPT rate.
Note: For Malaysia and Thailand, 2003 MFN rates have been used.

as AFTA (table 11).[14] With this result, they underscored the fact that many PTAs had not truly been liberalizing because of the many provisions, such as rules of origin, that were needed to underpin and enforce the preferential agreement and were actually trade restricting. These non-tariff measures are discussed later in this section.

2. Growth in intra-ASEAN trade

While gravity models remain the better test for determining the effect of AFTA on trade in general and on agriculture trade in particular, an analytical evaluation of trade data

[14] R. Adams and others (2003), employed different gravity model specifications that addressed product differentiation and possible selectivity bias from exclusion of partners with zero trade. They also made use of so-called dynamic dummies, and estimated a Tobit model with fixed effects to account for unobserved heterogeneity. Previous empirical results did not used fixed effect models, which, they said, led to an omitted variable bias. Indeed, they found that the fixed effects model removed the upward bias in the estimate of net trade effect of PTAs.

Table 11. New evidence that PTAs are a cause of net trade creation or diversion

Past estimates			New estimates	
Net trade creation	**Inconclusive**	**Net trade diversion**	**Net trade creation**	**Net trade diversion**
Andean	LAIA	NAFTA	Andean	AFTA
CER	MERCOSUR		LAFTA/LAIA	EFTA
AFTA			United States-Israel	EC/EU
EEC/EU?			SPARTECA	MERCOSUR
EFTA?				NAFTA
				CER
				European Union-Switzerland
				Chile-Colombia
				Australia-Papua New Guinea
				Chile-MERCOSUR
				European Union-Egypt
				European Union-Poland

Source: R. Adams and others (2003), "Trade and investment effects of preferential trading arrangements", Productivity Commission Staff Working Paper, Canberra, Australia.

can supplement the models' results. This subsection attempts to make an analytical presentation of how AFTA has affected interregional trade.

One of the main issues to be overcome is the problem of attribution. Was the growth in intraregional trade, for example, due to the trade agreement or to other factors? At best, the answer can only be indicative. Table 12, for example, shows an increase in intra-ASEAN imports of those products for which tariffs were eliminated. The tariff elimination may not be the only factor that explains such growth nor is it certain that those imports took advantage of the PTA, considering the burden of satisfying rules of origin requirements, but such information provides a reason to pause and reflect on the potential role of PTAs.

Another caveat in analysing trade data is that a large percentage of products illegally traded across country borders is not reflected in official trade figures. The importance of this situation is evident in the fact that often trade flows do not exhibit significant change after tariffs have been lowered because many of them have already managed to enter the country, tariff-free. In addition, tariffs are not the only way by which countries protect their domestic markets. A whole gamut of non-tariff measures exist that can obviate the liberalization that tariff reductions are meant to accomplish. Therefore, a more apt indicator of liberalization would perhaps be the difference in border and home prices, i.e., the effect of liberalization is shown in a decrease in the price difference. However, data limitation precludes undertaking an analysis in this chapter, using this method.

Table 12. Intra-ASEAN imports by selected country (US$ '000)

	Number of tariff lines w/CEPT = 0 (HS 6-digit)	Imports from ASEAN	
		2003	1999
Philippines	72	180 027	136 481*
Thailand	43	20 323	16 019
Malaysia	539	1 188 935	629 868
Indonesia	223	497 258	878 654

Sources: ASEAN Secretariat and United Nations Conference on Trade and Development PC-TAS.
* Year 2000 figures have been used.

(a) Growth in intra-ASEAN trade due to industry trade

A descriptive analysis of trade creation and trade diversion can be gleaned from analysing shares of intra-ASEAN and extra-ASEAN trade in comparison with total trade. Table 13 shows that total intra-ASEAN trade share compared with total regional trade (ASEAN 6 to ASEAN 10) indeed increased by more than 10 percentage points from 1995 to 2003. However, judging from the share of intra-ASEAN agriculture trade, most of this increase had come, not from increased agriculture trade, but from industry trade. Intra-ASEAN agriculture trade share to total ASEAN trade increased from 1.4 per cent in 1995 to 1.9 per cent in 2003, approximately a 0.5 percentage point increase, even as total intra-ASEAN trade share had increased from 21.4 per cent in 1995 to 31.7 per cent in 2003, or by about 10 percentage points.

Total trade among the ASEAN 6 as a share of total trade averaged 21 per cent from 1993 to 2003 (figure VII) compared with 79 per cent for non-ASEAN 6.[15] Figure VII shows the share of agriculture and industry to total trade, as well as the share of intra- and extra-ASEAN trade. It indicates that more than 90 per cent of ASEAN trade is in industry, and only about 10 per cent in agriculture. In fact, the average growth of agriculture share to total trade from 1993-2003 is -2 per cent while growth of industry's share averaged 0.22 per cent. While this indicates that there was little change as far as the importance of industry to total trade was concerned, it implies that the importance of agriculture to ASEAN trade had dissipated even more.

Average growth of the intra-ASEAN trade share to total trade was roughly 1.5 per cent from 1993 to 2003 while growth of the extra-ASEAN share averaged -0.35 per cent. This possibly indicates some trade diversion effect of AFTA but it is relatively small compared with the growth effect on intra-ASEAN trade, again much of which was accounted for by industry trade rather than agriculture.

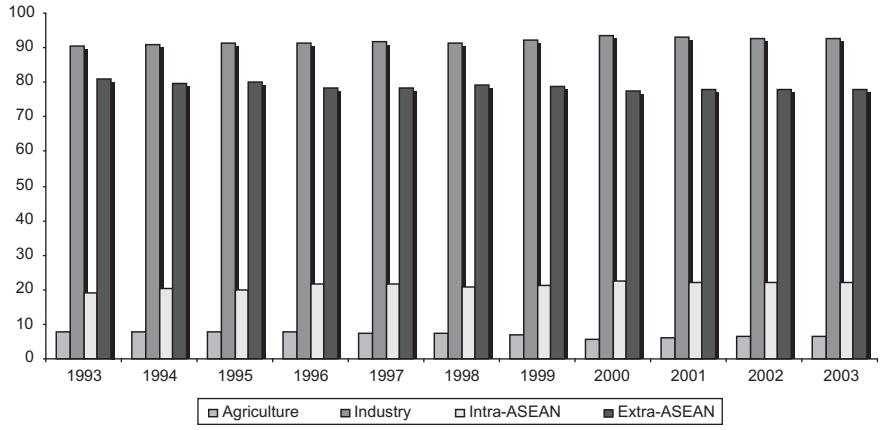
[15] Based on the computation of ASEAN 6 to ASEAN 6 trade from the *ASEAN Statistical Yearbook 2004*.

Table 13. Direction of ASEAN 6 trade in 1995, 2000 and 2003

	Imports			Exports			Percentage share to total trade		
	1995	2000	2003	1995	2000	2003	1995	2000	2003
A. ASEAN 6 trade (US$ million)									
ASEAN 6	53 244	72 511	75 393	69 518	87 634	88 476	20.23	29.25	29.61
ASEAN 10	54 900	75 237	79 140	74 994	94 047	96 504	21.41	30.92	31.74
Non-ASEAN	258 058	174 113	164 086	218 810	204 112	213 718	78.59	69.08	68.26
B. ASEAN 6 agricultural trade (US$ million)									
ASEAN 6	2 997	2 792	4 097	4 021	3 909	5 101	1.16	1.22	1.66
ASEAN 10	3 536	3 292	4 523	5 224	4 767	6 003	1.44	1.47	1.9
Non-ASEAN	11 237	7 481	7 242	18 147	6 970	10 334	4.84	2.64	3.18

Source: United Nations Conference on Trde and Development PC-TAS.

Figure VII. Per cent share of intra-ASEAN trade in total ASEAN Trade, 1993-2003



Source: ASEAN Secretariat.

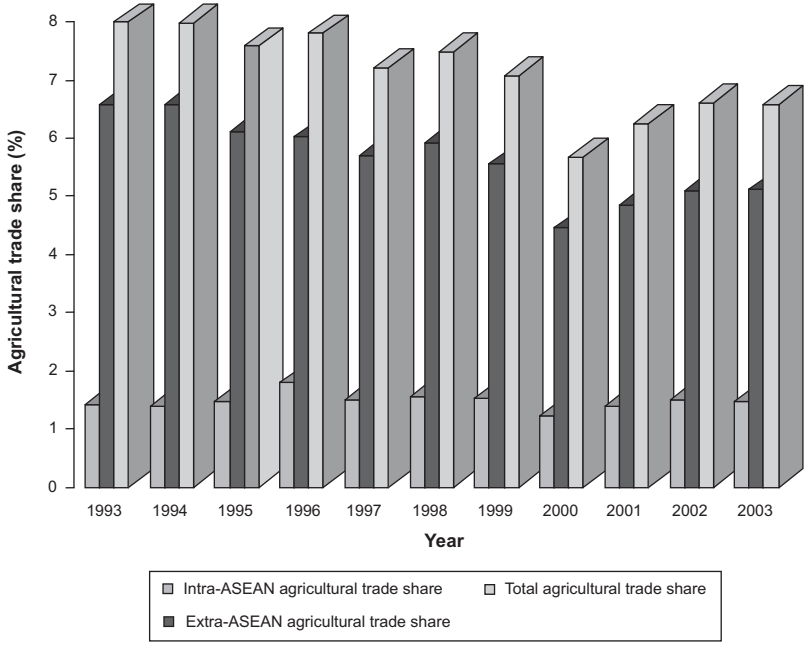
The fact that most of the growth of intra-ASEAN trade came from trade in industry is, to a certain extent, not surprising. First, as mentioned above, the ASEAN member countries produce agriculture products that are broadly similar, i.e., mostly tropical products, thus providing relatively little room for trade with one another. Second, AFTA itself was originally conceived not with the aim of fostering trade in agriculture but of facilitating the already burgeoning intra-industry trade in manufacturing that arose from the vertically linked operations of transnational corporations in ASEAN. The extension of AFTA to agricultural goods came almost as an afterthought. Being notified in WTO under the Enabling Clause, rather than under GATT Chapter XXIV, ASEAN was not under any

obligation to satisfy the "substantially all trade" requirement. It could, therefore, initially exclude the entire agricultural sector. It was only later that agriculture liberalization was appended in the agreement. Consequently, agriculture tariff reduction was one of those carried out more recently, unlike trade in some industrial goods that was opened up almost from day one of the FTA.

(b) Growth in total agriculture trade due to extra-ASEAN trade

Figure VIII shows that the share of total agriculture trade in total ASEAN trade[16] had been on the decline since 1993, and that this trend started to reverse in 2000. From 2000 to 2003, the total share of agricultural trade increased by almost 1 percentage point from 5.7 per cent in 2000 to 6.6 per cent in 2003. Much of this increase, however, came from extra-ASEAN agricultural trade, which increased its share of total trade by 0.6 percentage points (from 4.5 per cent in 2000 to 5.1 per cent in 2003). During the same period, the intra-ASEAN agriculture export share of total exports increased by a mere 0.3 percentage points (from 1.2 per cent in 2000 to 1.5 per cent in 2003). This implies that the ASEAN member countries do not trade much with one another in agricultural products, presumably

Figure VIII. Intra-, extra- and total agricultural trade share – ASEAN 6 to ASEAN 6



Sources: ASEAN Secretariat and WITS.

[16] Figures are from ASEAN 6 to ASEAN 6.

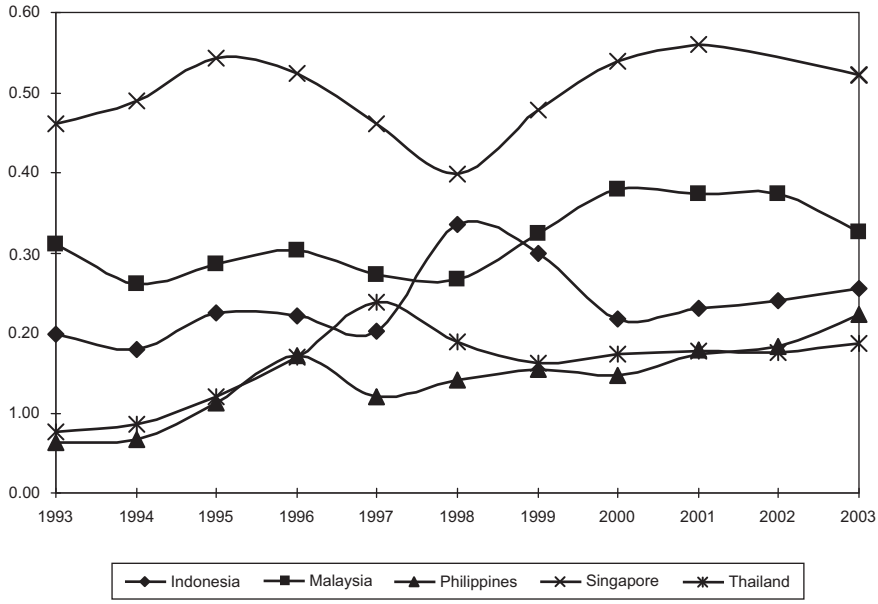
because they produce similar agricultural goods. Rather, as in industrial goods, their agricultural trade tends to be mostly with countries outside ASEAN.

(c) Individual country differences

The apparently sluggish growth of intra-ASEAN agricultural trade for ASEAN 6, however, masks individual country performance. While the intra-ASEAN share of agricultural trade in total trade has not been significant, its ratio to extra-ASEAN trade has actually grown, especially if observed at the individual country level. For example, figure IX shows an upward trend for the intra-/extra-ASEAN agricultural trade ratio, but the change has been more pronounced for the Philippines and Thailand. In 1995, the ratios of intra-/extra-ASEAN trade for those two countries were 0.11 and 0.12, respectively, while in 2003, the intra-ASEAN trade ratios expanded to 0.22 and 0.19.

Similarly, the intra-ASEAN agricultural trade share of total trade shows varied growth across ASEAN 6; however, the Philippines, Indonesia, Malaysia, and Thailand (ASEAN 4) appear to have reaped greater gains compared with Singapore. In terms of growth of values of agricultural intra-ASEAN trade, ASEAN 4 trade more than doubled from 1993 (figures X and XI).

Figure IX. Ratio of intra/extra-ASEAN agricultural trade



Sources: ASEAN Secretariat and WITS.

Figure X. Share of intra-ASEAN agricultural trade in total trade

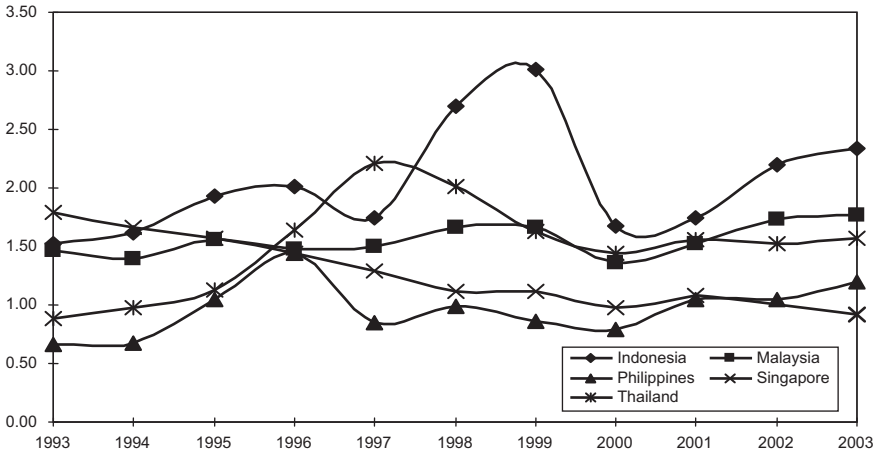
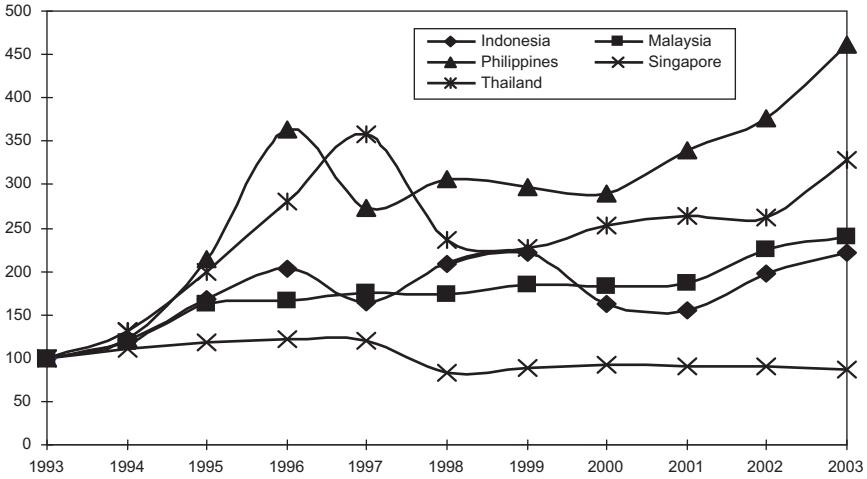


Figure XI. Total intra-ASEAN agricultural trade
(Index total value, 1993 = 100)



Sources: ASEAN Secretariat and WITS.

In summary, despite individual country differences in agriculture trade performance, the analysis above confirms the results of many gravity trade models indicating that AFTA is not trade diverting, particularly with regard to agriculture, as trade in intra-ASEAN agriculture products grew only marginally from 1.44 per cent share to total trade in 1995 to 1.9 per cent in 2003 (table 13). The analysis shows that most of the growth in agriculture trade was due to extra-ASEAN trade.[17] It also adds evidence to the conclusion by Gilbert and others (2001) that AFTA has benefited manufacturing much more than agriculture. However, recent dynamic gravity models have found that AFTA is among the PTAs that are stumbling blocks, i.e., where trade diversion exceeds trade creation. This underscores the non-liberalizing nature of PTAs due to stringent rules of origin and persisting non-tariff measures that are not sufficiently addressed in such agreements. This issue of non-tariff measures is discussed below.

3. Non-tariff measures

The pace of removing the tariff protection structure, as shown in section B, stands in stark contrast to the apparently sluggish progress in intra-ASEAN trade in agriculture. The question is whether the reason for such slowness is just because ASEAN products are competing with each other, therefore allowing little scope for intra-(product) trade (for example, two countries exporting and importing rice), or whether the problem lies not in tariffs but in other non-tariff measures. Table 14 indicates that the latter reason is highly plausible. A high percentage of the many non-tariff measures in ASEAN, especially technical measures or health and safety standards requirements, are applied to agricultural products. At least 70 per cent of tariff lines that involve technical measures are agricultural products. It appears that the more developed ASEAN countries (for example, Singapore and Malaysia) impose a greater number of tariff lines on agricultural products than is the case with other countries.

Another major non-tariff measure that affects agricultural trade in particular is that involving quantity control and licensing/monopolistic procedures. While ASEAN has done away with import quotas, import licensing for some products is only given to a government monopoly, as in the case of rice imports by the Philippines, or to registered importers.

Further corroboration of this result has been provided by Adams and others (2003) who attempted to develop a Member Liberalization Index (MLI) for different PTAs throughout the world. The objective was to assess how, in reality, these preferential arrangements (after taking many non-tariff measures and rules of origin requirements into account) had made economies freer. In essence, the higher their measure on the MLI, the more liberalizing the PTA is supposed to be.[18] Table 15 shows a portion of the index construction by Adams and others (2003), where AFTA achieved a total measure of only 0.035 out of

[17] A referee rightly notes that, based on previous discussions, this conclusion is true primarily because there has been less (slower) liberalization, so far, in the agriculture sector.

[18] The actual computation of the Members Liberalization Index, taken from Adams and others (2003), is shown in annex tables 3a and 3b.

Table 14. Non-tariff measures in ASEAN

	Number of tariff line	Number of agricultural tariff line	Percentage
	(1)	(2)	(2)/(1)
Brunei Darussalam (2004)			
Price control measure	34	18	52.9
Automatic licensing measure	3	3	100
Quantity control measure	205	118	57.6
Monopolistic measures	4	4	100
Technical measures	49	44	89.8
Indonesia (2003)			
Price control measure	35	1	2.9
Quantity control measure	259	81	31.3
Monopolistic measures	62	25	40.3
Technical measures	486	411	84.6
Malaysia (2003)			
Price control measure	8	0	0
Finance licensing	2	0	0
Automatic licensing measure	16	1	6.3
Quantity control measure	412	138	33.5
Monopolistic measures	6	6	100
Technical measures	215	167	77.7
Philippines (2001)			
Price control measure	18	0	0
Automatic licensing measure	26	18	69.2
Quantity control measure	264	168	63.6
Technical measures	339	284	83.8
Singapore (2001)			
Price control measure	16	0	0
Automatic licensing measure	24	18	75.0
Quantity control measure	212	97	45.8
Monopolistic measures	1	1	100
Technical measures	264	182	68.9
Thailand (2003)			
Price control measure	13	0	0
Finance licensing measure	1	0	0
Quantity control measure	127	66	52.0
Technical measures	600	449	74.8

Source: WITS.

Table 15. Ranking of preferential trading arrangements

	All trade	Agriculture	Industry
Singapore-New Zealand	1	1	1
European Union	2	6	2
ANZCERTA	3	2	4
Chile-MERCOSUR	4	4	3
Chile-Mexico	5	3	6
NAFTA	6	11	10
European Union-Poland	7	7	13
ANDEAN	8	5	5
MERCOSUR	9	8	7
Chile-Columbia	10	13	9
ASEAN-FTA	11	16	14
EFTA	12	9	8
PATCRA	13	10	12
Israel-United States	14	17	15
European Union-Switzerland	15	18	11
European Union-Egypt	16	14	17
SPARTECA	17	12	16
LAIA	18	15	18

Source: R. Adams and others (2003), "The trade and Investment effects of preferential trading arrangements: Old and new evidence", Productivity Commission Working Paper, Canberra, May 2003.

Note: A ranking of 1 means PTA provisions contain highly liberalizing elements.

a "perfect" score of 0.10 for agriculture. It is ranked sixteenth out of the 18 PTAs considered in the study. It ranked slightly better with fourteenth place for industry, and eleventh for overall trade (table 16). Admittedly, the index construction entails a certain amount of subjective judgment; nevertheless, the low ranking for agriculture is telling of the lack of the sector's actual liberalization within the region. This perhaps partly explains why intra-ASEAN agricultural trade has not significantly increased at a rate close to that of industrial trade.

D. Summary and conclusions

This paper shows that, in the case of AFTA, the PTA helped to accelerate the lowering of tariff barriers against other ASEAN countries. The average and median CEPT tariffs have been significantly reduced compared with MFN levels. The tariff distribution analysis shows that tariffs on a large proportion of agricultural products, and indeed on all commodities, have been capped within the zero to 5 per cent range, while in MFN a large portion of tariffs still lies between 5 per cent and 20 per cent. Therefore, the entry of major

Table 16. Trade in agriculture – Members liberalization index

Provisions	EU	EFTA	ANDEAN	EU-Switz	PATCRA	EU-Egypt	LAIA	SPARTECA	ANZCERTA	Israel-US	ASEAN-FTA	MERCOSUR	Chile-Colombia	NAFTA	EU-Poland	Chile-MERCOSUR	Chile-Mexico	Singapore-NZ
Measures covering trade in agriculture																		
Technical barriers to trade	0.0021	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0000	0.0003	0.0000	0.0021	0.0012	0.0021	0.0021	0.0000	0.0021
Export incentives	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0030	0.0000	0.0030	0.0060	0.0060
Safeguards	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0020	0.0000	0.0020
Safeguards – time limit	0.0020	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0005	0.0000	0.0005	0.0000	0.0020	0.0010	0.0020
Safeguards – type of measure	0.0020	0.0000	0.0000	0.0000	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0015	0.0015	0.0000	0.0015	0.0000	0.0020	0.0015	0.0020
Anti-dumping and countervailing	0.0000	0.0000	0.0030	0.0000	0.0030	0.0000	0.0000	0.0000	0.0030	0.0000	0.0000	0.0030	0.0000	0.0030	0.0000	0.0045	0.0000	0.0045
Years remaining in tariff reductions	0.0040	0.0040	0.0040	0.0000	0.0040	0.0040	0.0000	0.0040	0.0040	0.0040	0.0000	0.0040	0.0040	0.0004	0.0028	0.0004	0.0040	0.0040
Tariff quotas	0.0153	0.0153	0.0153	0.0000	0.0153	0.0153	0.0153	0.0153	0.0153	0.0043	0.0000	0.0153	0.0153	0.0085	0.0153	0.0153	0.0153	0.0153
Domestic support	0.0000	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0162	0.0000	0.0162	0.0162	0.0162
Tariff exceptions	0.0100	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	0.0100	0.0050	0.0050	0.0100
Number of different types of RoO	0.0020	0.0000	0.0010	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0000	0.0010	0.0005	0.0000
Coverage of RoO	0.0030	0.0000	0.0030	0.0030	0.0030	0.0000	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0000	0.0030	0.0030	0.0000	0.0030
Restrictiveness of RoO	0.0100	0.0020	0.0020	0.0010	0.0020	0.0020	0.0010	0.0060	0.0020	0.0050	0.0040	0.0020	0.0020	0.0020	0.0000	0.0000	0.0020	0.0040
SPS measures	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0150	0.0000	0.0000	0.0000	0.0000	0.0075	0.0150	0.0000	0.0150	0.0038
Total	0.0514	0.0456	0.0545	0.0207	0.0450	0.0380	0.0355	0.0445	0.0680	0.0325	0.0350	0.0465	0.0436	0.0448	0.0482	0.0565	0.0665	0.0749
Rank	**6**	**9**	**5**	**18**	**10**	**14**	**15**	**12**	**2**	**17**	**16**	**8**	**13**	**11**	**7**	**4**	**3**	**1**

Source: R. Adams and others (2003), "The trade and Investment effects of preferential trading arrangements: Old and new evidence", Productivity Commission Staff Working Paper, Canberra, May 2003.

ASEAN exports into the domestic markets of other ASEAN members are not prevented by high tariffs, except in the case of commodities such as rice, sugar and coffee.

The analysis of the relative tariff ratio index reveals that ASEAN agriculture tariff protection is relatively high with respect to those of developed countries, except China and the Republic of Korea. Developed countries, except Japan, are, likewise, relatively more open when it comes to industrial exports. While they may have very low tariff barriers in agriculture, various non-tariff measures not captured in the above tariff analysis work to the disadvantage of developing countries such as those in South-East Asia. Even among ASEAN members, many of the non-tariff measures – particularly health and safety standards, import licensing and quota measures – are applied more especially to agricultural products. This, perhaps, partly explains the relatively low growth of intra-ASEAN agriculture trade over total interregional trade. Nonetheless, the paper highlights individual country performances in improving trade with other ASEAN members.

The above discussion of specific PTA treatment of agricultural products also shows that while such products remain sensitive and continue to receive special consideration (for example, a prolonged liberalization timetable), the fact that PTAs manage to include many sensitive products in the schedule of liberalization should be considered an advance over multilateral negotiations. It is understandable that some countries, for political reasons, would have greater difficulty opening up certain parts of the agricultural sector. However, the flexibility afforded them in PTAs makes for a less painful transition process. At the same time, the fact that these countries have committed to the liberalization of even difficult sectors is a major improvement over the multilateral negotiations. The need now is for time and patience to ensure that those commitments are observed and not eventually withdrawn through policy reversals.

In the final analysis, the answer to the question of whether PTAs are a stumbling or building block in the multilateral liberalization process depends greatly on the design of the trade agreements, sector inclusiveness, timetables and flexibilities that are agreed on. In the case of AFTA, the answer remains that it is a building block as far as total trade is concerned. However, on the question whether AFTA is also a building block when it comes to agricultural trade, an affirmative answer may be less enthusiastic. Many tariffs on agricultural products were lowered later than tariffs on other goods, and a few more years may therefore be required before the real effect is revealed on agricultural trade within the region.

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Annex

Annex table 1. Foreign trade agreements in East and South-East Asia

In force	In negotiation	Under study
A. South-East Asia		
AFTA (1993)	ASEAN-Rep. of Korea	ASEAN-Japan
ASEAN-China (2003)	ASEAN-India	ASEAN-EU
Singapore-New Zealand (2001)	Japan-Philippines	ASEAN-United States
Singapore-Japan (2002)	Japan-Malaysia	ASEAN-CER
Singapore-EFTA (2002)	Japan-Thailand	Singapore-EU
Singapore-Australia (2003)	Japan-Indonesia	Singapore-Bahrain
Singapore-United States (2004)	Singapore-Kuwait	Singapore-Egypt
Singapore-Rep. of Korea (2005/6)	Singapore-Panama	Singapore-Islamic Rep. of Iran
Singapore-India (2005/6)	Singapore-South Africa	Thailand-Pakistan
Singapore-Chile-New Zealand-Brunei Darussalam 2005/6	Singapore-Pakistan	Thailand-Peru
Singapore-Jordan (2005/6)	Singapore-Qatar	Thailand-Chile
Thailand-Australia (2005)	Singapore-Canada	Philippines-United States
Thailand-New Zealand (2005)	Singapore-Mexico	Philippines-Australia
	Thailand-United States	
	Thailand-EFTA	
	Thailand-India	
	Malaysia-Australia	
	Malaysia-New Zealand	
	Malaysia-Pakistan	
B. East Asia		
China-Hong Kong, China (2004)	China-Malaysia	China-India
China-Macao, China (2004)	China-Australia	China-Singapore
China-Macao, China (2004)	China-New Zealand	
Japan-Mexico (2005)	Japan-Rep. of Korea	Japan-Australia
		Japan-Chile
		Japan-Canada
		Japan-Taiwan Province of China
Rep. of Korea-Chile (2004)	Rep. of Korea-Japan	Rep. of Korea-New Zealand
Rep. of Korea-Singapore (signed, 2005)	Rep. of Korea-Mexico	Rep. of Korea-China
Rep. of Korea-EFTA (signed, 2005)	Rep. of Korea-United States	Rep. of Korea-Thailand
		Rep. of Korea-India
		Rep. of Korea-Canada
		Rep. of Korea-EU
		Rep. of Korea-Brazil
		Rep. of Korea-Mercosur
		Rep. of Korea-Australia
		Rep. of Korea-China-Japan

Source: RTA-BTA Database, ESCAP Trade and Investment Division, Trade Policy Section.

Annex table 2. Highlights of FTAs in selected South-East Asian countries

Title	Approach to liberalization	Anti-dumping	Countervailing duties	Safeguards	Technical standards
South-East Asia					
ASEAN Free Trade Area (AFTA)	• Positive List: Common Effective Preferential Tariff (CEPT) Inclusion List • Tariff reduction (to 0-5 per cent level) implemented in ASEAN-6, under way in new ASEAN members • Further negotiation needed to include Highly Sensitive Products List under the agreement	n.a.	n.a.	n.a. (But there is an exclusions list)	Creates the ASEAN Consultative Committee for Standards and Quality
ASEAN-China Free Trade Area (ACFTA)	• Positive list • Tariff elimination by 2010 for ASEAN-6 and China; 2015 for New ASEAN members • Three tracks of tariff reduction: Early Harvest Programme (EHP), both for negative and positive list); and Normal Track and Sensitive	Follow WTO principles	Follow WTO principles	Follow WTO, allowed within five years of liberalization for up to three years (plus one-year extension)	n.a.

Annex table 2 *(continued)*

Title	Approach to liberalization	Anti-dumping	Countervailing duties	Safeguards	Technical standards
	Track, only for positive list • Calls for negotiations for further accelerating liberalization				
Singapore-Australia Free Trade Agreement (SAFTA)	• Negative list • Tariff elimination by entry in effect of the agreement	Within WTO rules. Detailed process to initiate measures	Within WTO rules.	Not allowed	Based on the previous Mutual Recognition Agreement on Conformity Assessment and calls for harmonization within APEC, WTO guidelines
Singapore-EFTA Free Trade Agreement	• Positive list of products covered, but with exceptions • The FTA covers only those products falling within Ch. 25 through 97 of HS Coding System; fish/other marine products; and processed agricultural goods • Tariff elimination by signing of the agreement	Not allowed, should be solved through consultation	n.a.	For one year only, extendable to three years	Subject to WTO Agreement on SPS

Annex table 2 *(continued)*

Title	Approach to liberalization	Anti-dumping	Countervailing duties	Safeguards	Technical standards
Singapore-India Comprehensive Economic Cooperation Agreement	• Positive list into India, all goods free into Singapore • Full tariff elimination or reduction by 2010 • Further liberalization through negotiation	Allowed	Following WTO	Allowed	Cooperation towards mutual recognition
Agreement between Singapore-Japan for a New-Age Economic Partnership (JSEPA)	• Positive list • Full tariff elimination • Foresees inclusion of more goods in the list	n.a.	Following the WTO Agreement on Safeguards	Following the WTO Agreement on Safeguards	Calls for mutual recognition, and sets out the standards to register new conformity assessment bodies in the Sectoral Annexes
Singapore-Jordan Free Trade Agreement	• Positive List • Tariff elimination in 10 years. • Possible acceleration through negotiation	WTO plus	According to WTO commitments	According to WTO plus some specifications on the process	n.a.
Agreement between Singapore and New Zealand on a Closer Economic Partnership (ANZSCEP)	• Tariff elimination by the signing of the agreement	WTO rules, with more strict requirements	Not allowed	Not Allowed	Mutual and unilateral recognition and harmonization of standards
Singapore-United States Free Trade Agreement (USSFTA)	• Positive list and schedule • Tariff elimination in 10 years at the most (depending on the staging category)	Allowed under domestic law principles	Allowed under domestic law principles	Allowed, linked to WTO Agreement on Safeguards requirements	Enhance cooperation in standards, certification and conformity assessments

Annex table 2 *(continued)*

Title	Approach to liberalization	Anti-dumping	Countervailing duties	Safeguards	Technical standards
	• New products/services can be included through negotiation				
Thailand-Australia Free Trade Agreement (TAFTA)	• Positive list and schedule • Tariff elimination by 2010 • Calls for consultations in order to accelerate the schedule	WTO Agreement on Implementation of WTO Art VI. Time frame: 12 months (Six months for seasonal products)	Accepted, following WTO principles.	Accepted, for up to two years. Special provisions for agricultural products	SPS: comply with WTO obligations, work towards harmonization and setting up a Experts Group. TBT: same
Thailand-India Framework Agreement for Establishing an FTA	• There is an early harvest scheme with products to be liberalized in 2004	n.a.	n.a.	n.a.	n.a.
Thailand-Lao People's Democratic Republic Preferential Agreement	• n.a.	n.a.	n.a.	n.a.	n.a.
Thailand-New Zealand Closer Economic Partnership Agreement	• Positive List • Upon entry into force, New Zealand will eliminate duties on 5,878 Thai products while Thailand will do the same for 2,978 export items	Following WTO commitments	Following WTO commitments	Specific requirements for bilateral safeguards	Calls for harmonization

Annex table 2 *(continued)*

Title	Approach to liberalization	Anti-dumping	Countervailing duties	Safeguards	Technical standards
	• New Zealand will scrap duties on another 697 items by 2010, and on 858 products on the sensitive list including textiles, clothing and shoes by 2015 • Tariff elimination by 2014 • Tariff elimination acceleration is encouraged				
Trans-Pacific Strategic Economic Partnership Agreement (Brunei Darussalam, Singapore, New Zealand and Chile)	• Negative approach	Following WTO	Following WTO	Following WTO	Calls for cooperation
China-Hong Kong, China Closer Economic Partnership Arrangement (CEPA)	• Positive List • Tariff elimination by 2005 • Every year, new products can be included in the no-tariff list (1 October every year)	Parties commit to not applying them on each other's goods	Parties commit to not applying them on each other's goods	n.a.	n.a.

Annex table 2 *(continued)*

Title	Approach to liberalization	Anti-dumping	Countervailing duties	Safeguards	Technical standards
China-Macao, China Closer Economic Partnership Arrangement (CEPA)	• Positive list, can be reviewed annually • Tariff elimination by 2006	n.a.	n.a.	n.a.	n.a.
Japan-Mexico Economic Partnership Agreement	• Positive List • Tariff elimination in five or seven years (particularly for tariff quotas) • Accelerated elimination possible through consultation	WTO commitments	WTO commitments	Allowed, maximum three years	Cooperation for harmonization
Republic of Korea-Chile Free Trade Agreement	• Positive List • Tariff elimination in zero, 5, or 10 years according to schedule (some exceptions up to 13 years) • Accelerated tariff elimination through consultation	Subject to GATT Art VI	Subject to GATT Art VI	Subject to GATT Art XIX	WTO plus

Annex table 2 *(continued)*

Title	Approach to liberalization	Anti-dumping	Countervailing duties	Safeguards	Technical standards
South-East Asia (under negotiation)					
Malaysia-Japan Economic Partnership Agreement	• Positive list • Tariff elimination schedule varies for every product group, maximum 10 years • There is an Early Harvest Schedule	n.a.	n.a.	n.a.	n.a.
Philippines-Japan Economic Partnership Agreement	• Positive list • Tariff reduction within 10 years of implementation	n.a.	n.a.	n.a.	Mutual recognition

Source: RTA-BTA Database, ESCAP Trade and Investment Division, Trade Policy Section.

Annex table 3a. Member Liberalization Index

Weight	Score	Category
Measures covering trade in agriculture		
0.003		**Technical barriers to trade**
	0.00	No provisions
	0.10	Initiatives to promote the harmonization of standards
	0.20	Provisions that require notification to a committee, review and/or examination
	0.40	National treatment of standards
	0.70	Voluntary recognition of test results
	1.00	Harmonization of standards
0.006		**Export incentives**
	0.00	No provisions
	0.50	Provisions to review and exam
	1.00	Provisions that prohibit export incentives
0.002		**Safeguards**
	0.00	Safeguard provisions
	0.50	No provisions
	1.00	Safeguard provisions are prohibited
0.002		**Safeguards conditions – time limit**
	0.00	Safeguard provisions specify no time limit for the measure
	0.25	Safeguard provisions that permit safeguards to be in place for two years or more
	0.50	Safeguard provisions that permit safeguards to be in place for one year
	0.75	Safeguard provisions that permit safeguards to be in place for less than one year
	1.00	No safeguard provisions
0.002		**Safeguards conditions – type of measure**
	0.00	Safeguard provisions permit any measure to be used
	0.75	Safeguard provisions specify the type of measure – quotas or suspension of preferences
	1.00	No safeguard provisions
0.006		**Anti-dumping and countervailing measures**
	0.00	No restriction on the use of anti-dumping and countervailing measures
	0.50	Requires consultations with other members before anti-dumping or countervailing measures can be imposed
	0.75	Anti-dumping and countervailing measures can be imposed provided they are consistent with WTO rules
	1.00	Anti-dumping and countervailing measures are prohibited between members

Annex table 3a *(continued)*

Weight	Score	Category
0.004		**Years remaining in tariff reduction schedules as at 1 January 2001 for agriculture**
	0.00	No provision to reduce tariffs
	0.10	Continuing reductions until 1 January 2008
	0.20	Continuing reductions until 1 January 2007
	0.30	Continuing reductions until 1 January 2006
	0.40	Continuing reductions until 1 January 2005
	0.50	Continuing reductions until 1 January 2004
	0.60	Continuing reductions until 1 January 2003
	0.70	Continuing reductions until 1 January 2002
	0.80	Continuing reductions until 1 January 2002
	1.00	Provisions that abolished tariffs on commencement or tariffs have been eliminated

Source: R. Adams and others (2003), "Trade and Investment effects of preferential trading arrangements: Old and new evidence", Productivity Commission Staff Working paper, Canberra, Australia.

Annex table 3b. Construction of Member Liberalization Index

Weight	Score	Category
Measures covering trade in agriculture		
0.003		**Technical barriers to trade**
	0.00	No provisions
	0.10	Initiatives to promote the harmonization of standards
	0.20	Provisions that require notification to a committee, review and/or examination
	0.40	National treatment of standards
	0.70	Voluntary recognition of test results
	1.00	Harmonization of standards
0.006		**Export incentives**
	0.00	No provisions
	0.50	Provisions to review and exam
	1.00	Provisions that prohibit export incentives
0.002		**Safeguards**
	0.00	Safeguard provisions
	0.50	No provisions
	1.00	Safeguard provisions are prohibited
0.002		**Safeguards conditions – time limit**
	0.00	Safeguard provisions specify no time limit for the measure
	0.25	Safeguard provisions that permit safeguards to be in place for two years or more
	0.50	Safeguard provisions that permit safeguards to be in place for one year
	0.75	Safeguard provisions that permit safeguards to be in place for less than one year
	1.00	No safeguard provisions
0.002		**Safeguards conditions – type of measure**
	0.00	Safeguard provisions permit any measure to be used
	0.75	Safeguard provisions specify the type of measure – quotas or suspension of preferences
	1.00	No safeguard provisions
0.006		**Anti-dumping and countervailing measures**
	0.00	No restriction on the use of anti-dumping and countervailing measures
	0.50	Requires consultations with other members before anti-dumping or countervailing measures can be imposed
	0.75	Anti-dumping and countervailing measures can be imposed provided they are consistent with WTO rules
	1.00	Anti-dumping and countervailing measures are prohibited between members

Annex table 3b *(continued)*

Weight	Score	Category
0.004		**Years remaining in tariff reduction schedules as at 1 January 2001 for agriculture**
	0.00	No provision to reduce tariffs
	0.10	Continuing reductions until 1 January 2008
	0.20	Continuing reductions until 1 January 2007
	0.30	Continuing reductions until 1 January 2006
	0.40	Continuing reductions until 1 January 2005
	0.50	Continuing reductions until 1 January 2004
	0.60	Continuing reductions until 1 January 2003
	0.70	Continuing reductions until 1 January 2002
	0.80	Continuing reductions until 1 January 2002
	1.00	Provisions that abolished tariffs on commencement or tariffs have been eliminated

Source: R. Adams and others (2003), "Trade and Investment effects of preferential trading arrangements: Old and new evidence", Productivity Commission Staff Working paper, Canberra, Australia.

Annex table 4. Early Harvest Programme – China and ASEAN

The Early Harvest Programme will be implemented no later than 1 January 2004 as follows:

(a) China and ASEAN 6

Product category	No later than 1 January 2004 (%)	No later than 1 January 2005 (%)	No later than 1 January 2006 (%)
1[a]	10	5	0
2[b]	5	0	0
3[c]	0	0	0

[a] For China and ASEAN 6, this refers to all products with applied MFN tariff rates higher than 15 per cent. For newer ASEAN member States, this refers to all products with applied MFN tariff rates of 30 per cent or higher.

[b] For China and ASEAN 6, this refers to all products with applied MFN tariff rates between 5 per cent (inclusive) and 15 per cent (inclusive). For the newer ASEAN member States, this refers to all products with applied MFN tariff rates between 15 per cent (inclusive) and 30 per cent (exclusive)

[c] For China and ASEAN 6, this refers to all products with applied MFN tariff rates lower than 5 per cent. For the newer ASEAN member States, this refers to all products with applied MFN tariff rates lower than 15 per cent

(b) Newer ASEAN member States

Product Category 1 (per cent)

Country	No later than 1 January 2004	No later than 1 January 2005	No later than 1 January 2006	No later than 1 January 2007	No later than 1 January 2008	No later than 1 January 2009	No later than 1 January 2010
Viet Nam	20	15	10	5	0	0	0
Lao PDR and Myanmar	–	–	20	14	8	0	0
Cambodia	–	–	20	15	10	5	0

Product Category 2 (per cent)

Country	No later than 1 January 2004	No later than 1 January 2005	No later than 1 January 2006	No later than 1 January 2007	No later than 1 January 2008	No later than 1 January 2009	No later than 1 January 2010
Viet Nam	10	10	5	5	0	0	0
Lao PDR and Myanmar	–	–	10	10	5	0	0
Cambodia	–	–	10	10	5	5	0

Product Category 3 (per cent)

Country	No later than 1 January 2004	No later than 1 January 2005	No later than 1 January 2006	No later than 1 January 2007	No later than 1 January 2008	No later than 1 January 2009	No later than 1 January 2010
Viet Nam	5	5	0-5	0-5	0	0	0
Lao PDR and Myanmar	–	–	5	5	0-5	0	0
Cambodia	–	–	5	5	0-5	0-5	0

Source: China-ASEAN Early Harvest Trade Agreement – Annex tables.

IV. AGRICULTURAL TRADE LIBERALIZATION IN THE ASIA-PACIFIC REGION WITH SPECIFIC REFERENCE TO PREFERENTIAL TRADE AGREEMENTS: SCENARIO AND IMPACT ANALYSIS

*By Jayatilleke S. Bandara and Wusheng Yu**

Introduction

As in many other regions in the world, agriculture has been the most protected and distorted sector in the Asian and Pacific region. Many countries in the region are currently following a combined approach to agricultural trade reform. Those countries have been making some progress towards multilateral trade liberalization through the World Trade Organization (WTO) trade negotiations and regional trade liberalization through regional trade agreements (RTAs). As surveyed in chapters II and III, they have also been successful in concluding a large number of bilateral trade agreements (BTAs). Following the global trend, regional integration is gaining momentum in the Asia-Pacific region. Countries in Asia and the Pacific have also taken the initiative in forming a mega-RTA similar to the North American Free Trade Agreement (NAFTA) or the European Union in recent years (Scollay and Gilbert, 2001). As Chandra and Pratap (2005) noted, "the emerging dinosauric aspirations within the Asian region have also been discussed". They cited the "Expert Group Meeting on the Regional Agreements in Asia and the Pacific" held in Bangkok in January 2003 under the auspices of ESCAP as well as the International Conference on "Building New Asia: Towards an Asian Economic Community" held in New Delhi in March 2003 under the auspices of the Research and Information System for Non-Aligned Countries (RIS), as examples of this trend.

The ideas of regional cooperation among the Association of South East Asian Nations plus China, Japan and the Republic of Korea (ASEAN plus 3) and ASEAN plus SARRC (South Asian Association for Regional Cooperation) were highlighted at the ESCAP meeting. Chapters II and III of this book have provided detailed discussions on agricultural trade liberalization in the South-East Asian and South Asian regions separately. The main objective of this chapter is to attempt to evaluate the impact of agricultural trade reform in the Asia-Pacific region, focusing on RTAs and BTAs using some examples such as ASEAN, SAARC, ASEAN plus 3, ASEAN plus 3 plus India, and the Indo-Lanka Free Trade Agreement (FTA).

* The authors wish to thank the reviewers of the first draft of this chapter and Dr. Mia Mikic (Trade and Investment Division, ESCAP) for their helpful comments.

The remainder of this chapter is organized as follows. Section A briefly summarizes the gains from the Doha agricultural trade reform with the focus on the Asia-Pacific region, using recent quantitative assessments. Section B briefly surveys the most popular technique, i.e., computable general equilibrium (CGE) modelling, used in evaluating the effects of RTAs. The global CGE model and the database used in this study are briefly outlined in section C. The effects of selected RTAs and BTAs are evaluated in section D. Limitations of the modelling technique used in this chapter are considered in section E while section F comprises concluding remarks and policy implications.

A. Effects of the Doha agricultural reform – a brief overview

As surveyed in another paper that is part of this study (Bandara, 2007), a number of studies have emerged on quantifying the possible effects of multilateral trade liberalization in agriculture on different regions in the world under the Doha Development Agenda (DDA). It is not intended to reproduce similar empirical studies in this chapter. Therefore, the results of previous studies are used to highlight the implications of multilateral trade liberalization for countries in the Asian and Pacific region. Table 1 provides a summary of the results of four main studies. Column one of the table shows the results of one policy simulation of the well-known World Bank study (Anderson and Martin, 2005a-2005g; Anderson and others, 2005). These results are relevant to agricultural trade liberalization (i.e., the welfare effects of tiered agricultural tariff cuts, elimination of export subsidies and cuts in actual domestic support, as of 2001, of 28 per cent in the United States, 18 per cent in the European Union and 16 per cent in Norway).

The most striking feature of these results is that countries in the Asia-Pacific region are the main winners of Doha agricultural trade liberalization. While the total global welfare gain from this policy scenario is some US$ 74.5 billion (2015), the total gain for the Asia-Pacific region is some US$ 32.6 billion (about 44 per cent of the total global gain). However, the big winners in the region are developed countries such as Australia, Japan, the Republic of Korea, Taiwan Province of China, New Zealand and Thailand. Only China as well as Hong Kong, China, Singapore and Viet Nam record small losses. Although many developing countries in South Asia and South-East Asia gain from agricultural trade liberalization, the gains are just moderate.

Hertel and Keeney (2005) also examined the effects of agricultural trade policy reforms under DDA, using their recently developed GTAP-AGR model. The results of that study are summarized in the second column of table 1. The results of Hertel and Keeney (2005) also indicate that agricultural trade reforms under DDA generate a substantial amount of global welfare (US$ 55.7 billion in 2001 value). Developing countries would gain around US$ 11.9 billion. Similar to the previous study, import market access for agricultural products has been the main source of welfare gains (93 per cent of total gains). The relative contribution of the abolition of export subsidies and domestic support has been minimal. According to the study, small countries such as Bangladesh, the Philippines and Viet Nam would lose while large countries such as China and India would gain from full agricultural trade liberalization under DDA.

Recently, Antimiani and others (2005) examined the effects of agricultural trade liberalization under alternative scenarios by incorporating the outcomes of interaction between the strategies of country groups in the negotiations. The main results of that examination are summarised in column three of table 1, with the focus on countries in the Asia-Pacific region. The gains from agricultural trade liberalization in the study are similar to those shown in the World Bank study. According to the Antimiani study, the total global welfare gain is some US$ 69.2 billion (2013) and the total Asia-Pacific gain is some US$ 31.6 billion (about 46 per cent). Once again, Japan, the Republic of Korea, Taiwan Province of China and Thailand are the biggest winners in the region while countries such as Bangladesh, China, Indonesia and Viet Nam would lose marginally from agricultural trade liberalization.

The above three studies are highly optimistic about agricultural trade liberalization. The last column of table 1 summarizes the results of another recent study carried out by a group of researchers who are also the main contributors in compiling of protection data systematically and the development of the MAcMap database (Bouet and others, 2004a and 2005). The researchers claimed that most of the global CGE studies on Doha agricultural trade liberalization were excessively optimistic due to several reasons (Bouet and others, 2004a). Their welfare results are shown in percentage change form rather than in absolute United States dollar terms compared with the other three studies. The welfare results of this study indicated that agricultural trade liberalization under DDA would lead to a very small percentage increase in global welfare (0.08 per cent). It is not clear how they calculated this change and it is therefore very difficult to compare the results with those of previous studies since they are in United States dollar terms. The results across countries and regions indicate that developing countries in the Asia-Pacific region would gain again from agricultural trade liberalization. However, agricultural trade liberalization results in welfare losses in country groups such as sub-Saharan Africa, the Mediterranean and the poorest countries of the world. In general, in contrast to many other CGE studies, this study suggests that the welfare gains from agricultural liberalization are just moderate.

All in all, the above quantitative assessments indicate that most countries in the Asia-Pacific region may experience welfare gains as a result of agricultural trade reform under DDA. However, some developing countries such as Bangladesh and Viet Nam may experience modest welfare losses and they are at risk. Section C of this chapter examines whether the countries in the region would gain further in undertaking agricultural trade reform within RTAs and BTAs on top of multilateral agricultural trade liberalization.

Table 1. Gains from Doha agricultural trade liberalization

Country/region	Anderson and others, 2005 (US$ billion)	Hertel and Keeney, 2005	Antimiani and others, 2005 (US$ billion)	Bouet and others, 2004b (% change)
Asia-Pacific				
Australia and New Zealand	2.0	n.a.	2.0	n.a.
Singapore and Hong Kong, China	-0.1	n.a.	n.a.	0.05
Japan	18.9	n.a.	23.5	0.05
Republic of Korea and Taiwan Province of China	10.9	n.a.	3.1	n.a.
Bangladesh	0.0	-0.050	-0.1	n.a.
China	-0.5	0.560	-1.4	0.15
India	0.2	1.275	1.8	n.a.
Indonesia	0.1	0.085	-0.2	n.a.
Malaysia	n.a.	n.a.	1.3	n.a.
Philippines	n.a.	-0.085	-0.1	n.a.
Sri Lanka	n.a.	n.a.	0.2	n.a.
Thailand	0.9	n.a.	1.0	n.a.
Viet Nam	-0.1	-0.007	-0.2	n.a.
Rest of South Asia	0.2	n.a.	0.7	n.a.
Rest of East Asia	0.1	n.a.	n.a.	n.a.
High-income countries	65.6	41.6	n.a.	n.a.
European Union 25 plus EFTA	29.5	n.a.	8.8	0.14 and 0.11
United States of America	3.0	n.a.	3.0	0.05
Canada	1.4	n.a.	1.1	n.a.
Developing countries	9.0	11.9	n.a.	n.a.
East Asia and the Pacific	0.5	n.a.	n.a.	n.a.
South Asia	0.4	n.a.	n.a.	0.17
Europe and Central Asia	0.1	n.a.	n.a.	n.a.
Middle East and North Africa	-0.8	n.a.	n.a.	n.a.
Sub-Saharan Africa	0.3	n.a.	n.a.	n.a.
Latin America and Caribbean	8.1	n.a.	n.a.	n.a.
Transition economies	n.a.	2.2		
World total	74.5	55.7	69.2	0.08

B. Use of CGE models in evaluating RTAs

With the surge of RTAs around the world in recent years, a growing body of literature has been developed that focuses on the empirical assessment of the effects of those RTAs due to the increasing demand for such assessments. The ambiguity of the welfare effects of RTAs at theoretical level has also been a main reason for such increase in the demand for empirical assessments (Harrison and others, 2003; Robinson and Thierfelder, 2002). Some of the quantitative assessments have been carried out by policy analysts at the request of governments participating in RTAs (see, for example, Harrison and others, 2003). All these empirical studies can be classified by using two approaches. The first approach is to categorize them based on the time perspective they adopt: ex ante or ex post (DeRosa, 1998). While the ex ante evaluation estimate likely effects an RTA prior to its implementation or predicts future outcomes of an existing RTA, the ex post evaluation estimates such effects after the implementation of an RTA. Adams and others (2003) also followed this approach in reviewing empirical studies of RTAs. The second approach is to categorize them based on the methodology used in the studies, such as analytical, residual imputation and survey methods. Analytical studies involve using analytical models or methods for both ex ante and ex post evaluations while residual imputation can be employed only in the case of ex post situations. Survey methods depend on surveying various actors, sectors or industries in the economy. Of the three, analytical models have proven to be most popular among policy analysts.

A number of analytical techniques have been used by different analysts in recent years to evaluate the effects of various RTAs around the world. They range from single equation regressions to large-scale, multi-country global CGE models such as the currently popular GTAP model. Baldwin and Venables (1995) classified all analytical models under two groups: econometric models and CGE models. While econometric evaluations typically involve a large amount of historical or contemporary data, the estimation of parameters and hypothesis testing is done without a proper theoretical structure. Adams and others (2003) categorized the econometric evaluations (almost all of which are gravity models) as ex post evaluations, and CGE applications as ex ante evaluations. CGE applications are conducted based on a clear economy-wide theoretical structure, but rely mainly on estimates of key parameters outside the model (Baldwin and Venables, 1995; DeRosa, 1998). Both types of techniques have strengths and weaknesses (see Adams and others, 2003 and Neilsen, 2003 for detailed reviews).

Srinivasan and others (1993) surveyed several econometric studies from the 1960s and 1970s that attempted to evaluate the degree of trade diversion or trade creation as a result of the formation of RTAs in Europe and Latin America. However, none of those studies was able to present the welfare effects of RTAs because they lacked a proper microeconomic foundation. CGE models with a strong microeconomic foundation offer a systematic way of analysing welfare changes. Baldwin and Venables (1995) provided a systematic approach to welfare decomposition by grouping a number of possible mechanisms for welfare changes into seven components, as detailed below:

(a) In a setting of competitive world markets, an RTA may affect welfare through:

  (i) Trade volumes, and hence changes in tariff revenue or quota rents;

  (ii) Trade costs, and hence changes in import/export margins;

  (iii) The terms of trade, through the large-country effects;

(b) In a setting of imperfectly competitive markets, an RTA may affect welfare through:

  (i) Output effects, and hence changes in producer rents;

  (ii) Scale effects, and hence changes in production costs;

  (iii) Variety effects where consumers value diversity itself;

(c) In the long term, an RTA may affect welfare through accumulation effects that arise from changes in the rate of investment in those cases where the social rate of return diverges from the social discount rate.

In many recent CGE studies of RTAs, group (a) above has been taken into consideration, particularly after the introduction of the welfare decomposition method by Huff and Hertel (1996) into the GTAP framework. This has been one of the main strengths of using CGE models in analysing the effects of RTAs. There are CGE models that include the extensions of GTAP capable of capturing the welfare effects of groups (b) and (c) above. In addition to the ability of global CGE models to capture economy-wide as well as multiregional effects of RTAs, these models provide consistent and rigorously specified theoretical frameworks for performing a range of policy simulations. For this reason as well as other strengths, CGE modelling is currently the most popular technique in assessing RTAs.

As noted above, the increasing demand for quantitative assessments of PTAs such as the European Union, NAFTA and the ASEAN Free Trade Area (AFTA) has given rise to the extensive use of global modelling by policy analysts. Multiregional, multisector CGE models have been used as a tool for better understanding of the effects of an RTA. The trade literature show many CGE modelling applications deal with issues related to RTAs. These applications were surveyed by Flam (1992), Baldwin and Venables (1995), Francois and Sheills (1994), De Rosa (1998), and Robinson and Thierfelder (2002). Despite the criticism levelled at CGE evaluations of PTAs (Panagariya, 2000; Panagariya and Dattagupta, 1999), however, Baldwin and Venables (1995), De Rosa (1998), Robinson and Thierfelder (2002), Adams and others (2003) and Nielsen (2003) clearly recognized the contributions made by CGE models in evaluating PTAs. More recently, Harrison and others (2003) summarized the conclusions of many CGE studies they had undertaken to evaluate the effects of different RTAs, usually at the request of the client governments of the World Bank.

The evaluation of RTAs in the Asia-Pacific region by using CGE models has also been popular over the past decade or so. Many CGE studies have focusing on single RTAs as well as a number of RTAs and BTAs in the region. Some of the early CGE

studies of RTAs in the Asia-Pacific region were carried out by Lewis and others (1995), Brown and others (1996), and Ballard and Cheong (1997). Those studies examined the effects of possible RTA initiatives in the region. Following those early studies, there has been a surge of CGE studies of RTAs in recent years (for example, Robinson and Thierfelder, 2002, Nielsen, 2003, and Adams and others, 2003). Of all these studies, it is worth mentioning at least three studies that focused on a number of RTA initiatives similar to the ones considered in chapter III. The three studies are Ballard and Cheong (1997), Scollay and Gilbert (2001) and Ma and Wang (2002).

1. Ballard and Cheong, 1997

This study used perfectly competitive and imperfectly competitive versions of a global CGE model based on a GTAP database. It focused on the following policy scenarios under different combinations of model assumptions:

(a) The regional initiative of Asia-Pacific Economic Cooperation (APEC);

(b) A Pacific FTA with 11 member nations;

(c) An East-Asia FTA;

(d) Global liberalization.

Three main conclusions of this study were:

(a) “Every member of a proposed new free trade area would reap welfare gains”;

(b) “The imperfectly-competitive model simulates substantially larger welfare gains than does the perfectly-competitive model”;

(c) “Welfare gains will be larger when the proposed FTA is larger”.

2. Scollay and Gilbert, 2001

This is the most comprehensive CGE study of RTAs and BTAs in the Asia-Pacific region in terms of coverage. It used the standard GTAP model and database, and focused on a large number of RTAs and BTAs under four different headings:

(a) New bilateral and plurilateral subregional trade agreements (SRTAs) such as the trans-Pacific initiatives and intra-Western Pacific initiatives;

(b) Potential steps towards the formation of an East Asian trade bloc;

(c) APEC liberalization on a nondiscriminatory basis and preferential basis;

(d) The formation of the Asia-Pacific trade bloc and global contexts.

The main conclusions of this comprehensive study were:

(a) The effects of many proposed and new small RTAs and BTAs (known as SRTAs) were likely to be small;

(b) The recent proliferation of bilateral and plurilateral SRTAs could create trade conflicts and tension in the region;

(c) The welfare gains would be large in the case of SRTAs involving countries such as Japan and the United States.

3. Ma and Wang (2002)

This study used a recursive dynamic global CGE model and the GTAP database. It covered the four FTA scenarios in the region:

(a) ASEAN plus China;

(b) ASEAN plus Japan;

(c) ASEAN plus 3 (Japan, China and the Republic of Korea);

(d) ASEAN plus China, Japan, the Republic of Korea and the United States.

The main conclusions of the study were:

(a) ASEAN plus China is the main winner among the four scenarios;

(b) Japan gains from the ASEAN plus Japan FTA at the expense of China;

(c) All countries gain from the ASEAN plus three FTA and it offers substantially larger markets for its members.

While CGE models have been widely used to evaluate the effects of RTAs in the Asia-Pacific region, in general, less attention has been paid to RTAs in South Asia. However, a number of GTAP-based CGE studies have focused on South Asian RTAs (see Bandara, 2004 for a survey). For example, Pigato and others (1997) briefly assessed the effects of the South Asia Preferential Trading Arrangement (SAPTA) using the GTAP model; this can be considered as the first CGE study on SAPTA. This study found that SAPTA would create some welfare gains for its member countries, and that small countries would benefit more. However, unilateral trade liberalization would create larger gains for the region, and India would benefit from unilateral trade liberalization to a greater extent than the rest of South Asia.

Following the above study, Siriwardana (2001) used the GTAP model to investigate several trade liberalization options for Sri Lanka beyond preferential trade liberalization within SAARC. The study conducted a series of 12 policy experiments with the GTAP model, ranging from bilateral trade liberalization between Sri Lanka, other SAARC countries, ASEAN countries and other Asian countries. The results of this study indicated that bilateral trade liberalization with other SAARC countries would be beneficial to the Sri Lankan economy.

One of the most recent studies using GTAP to evaluate gains from a South Asian Free Trade Agreement (SAFTA) is that of Bandara and Yu (2003). This study investigated the question of "how desirable is the South Asian Free Trade Area?" To address this

question, a series of policy experiments were carried out with the GTAP model. Two opposite policy simulations were performed: (a) a unilateral trade liberalization scenario (South Asian countries liberalizing trade unilaterally); and (b) a preferential trade liberalization scenario (trade liberalization among trading partners in the region). The results of the two policy simulations demonstrated that the impact of preferential trade liberalization would be very small and that the impact of unilateral trade liberalization was significant for South Asia. Under preferential liberalization, small countries would lose or gain marginally while the biggest country in the region, India, would likely be the sole significant winner.

The results of other extra policy simulations (preferential trade liberalization between South Asia and ASEAN, the European Union and NAFTA) were also analysed in this study. While preferential trade between South Asia and ASEAN was expected to create adverse effects on South Asia, preferential trade between South Asia and European Union or NAFTA was expected to be beneficial to South Asia. More recently, Chandha and Pratap (2005) used a global CGE model based on the GTAP database to investigate a series of RTA scenarios involving South Asia.

The brief survey above indicates that a large number of attempts have been made to evaluate the effects of RTAs in the Asia-Pacific region in recent years. Many of these studies have attempted to evaluate the overall effects of different RTAs. Less attention has been paid to the agricultural trade liberalization under RTAs in this region. The purpose of this chapter is to undertake a similar quantitative study, but with the focus on agricultural trade liberalization. Similar to many previous studies, the standard GTAP model and its latest database (version 6) have been used for this purpose. Section C provides a brief description of the GTAP model and database used in this chapter.

C. GTAP model and database

The GTAP database has been used in all of these studies within CGE modelling frameworks. However, the models differ from study to study. It was decided to use the standard GTAP model and the database (version 6) in the present study. In this section the main features of the GTAP model and the database are briefly outlined.[1]

1. Overview of the GTAP model

As noted in the introduction, the GTAP model and the database have been widely used to explore the economic effects of global and regional trade liberalization around the world in recent years. Since the establishment of GTAP in 1992, many analysts have used either the standard GTAP model or the GTAP database to quantify the economic effects of RTAs around the world. In fact, this has been one of the most researched areas using GTAP. The structure of the “standard” GTAP model is well documented in chapter 2 of Hertel (1997). Although there are new extensions of this core model, only the standard GTAP model is used in this study together with the GTAP database. The core of GTAP is

[1] See the GTAP website at http://www.gtap.agecon.purdue.edu for more details.

its database that comprises a fully articulate record of transactions as well as export and import duties between different regions for a wide range of commodities. Since 1992, a number of versions of the GTAP database have been released. With each updated version, the quality of data has increased. The number of regions and commodities has also increased. Since the early versions, countries in the Asia-Pacific region have been well represented in GTAP. This present analysis uses the GTAP version 6 database as it represents a more disaggregated Asia-Pacific regional classification as well as improved quality of protection data.

There are some advantages of using the GTAP model to analyse the effects of agricultural trade liberalization on Asia and the Pacific. First, the GTAP model links different individual countries and regions with detailed specifications that describe the economic activities of firms, households and governments. Second, the model is based on the input-output structures of each region or country that link industries together in a value-added chain, starting from primary goods and moving into continuously higher stages of intermediate processing, to the final assembling of consumption goods for households and governments. Third, all individual regions or countries are linked through international trade flows to form a single global general equilibrium model in which prices and quantities supplied and demanded are determined simultaneously in all primary factor markets in domestic and international commodity markets. Finally, the GTAP model structure reflects the fact that all parts of the economy are connected in a network of direct and indirect linkages. This means that any changes in any part of the system will have repercussions throughout the global economy.

The standard GTAP model is a comparative static global general equilibrium model based on neo-classical economic theory. Neo-classical utility maximization and cost minimization assumptions are used to derive demand functions for household consumption and inputs. Each region contains a representative household that maximizes regional utility. The private household demand is specified as a Constant Difference Elasticity (CDE) demand system. In all markets (both output and factor markets), perfect competition is assumed while the constant returns scale technology is assumed in production. Firms are all assumed to maximize profits. Market clearing conditions are enforced for all the markets. The production of each commodity employs a composite of primary factors called value-added (a Constant Elasticity of Substitution [CES] of various primary factors) and an intermediate input composite (a CES composite of domestically produced goods and imported goods). The value-added component is combined with the composite intermediate input in a Leontief fashion to form the final product. Technical changes are incorporated into the value-added nest and the final output nest. Further, the production system has been incorporated into the GTAP model in order to distinguish production sectors by their intensities in factors of production. Five factors of production have been identified: (a) agricultural land; (b) other natural resources; (c) unskilled labour; (d) skilled labour; and (e) physical capital.

International trade is modelled as a nested Armington structure (Armington, 1969), which not only differentiates imported goods from domestically produced ones but also

differentiates imported products by regions. This structure is useful in tracking the existing trade pattern, especially the "cross hauling" of similar products. In the first net of this structure, imports of a given good are sourced by origins and then combined by a CES function as a composite at the border of the importing country. Once the composite product is imported into the region, it is considered a homogeneous product and cannot be distinguished by origin. This composite imported good is further divided into intermediate input, private consumption and government consumption. However, composite imported goods are differentiated from domestically produced goods when consumers/producers are making a decision on the optimal mix of domestic and imported goods.

In order to carry out policy simulations with the model, it is necessary to close it by declaring some variables as exogenous since there are more variables than equations in the model. This is known as the "closure" of the model in CGE modelling literature. In the standard closure, regional savings are assumed to be homogeneous and contribute to a pool of savings, which is then allocated among regions for investment in response to change in regional expected rates of return. These changes are assumed to be equalized across regions, thus giving rise to capital mobility across regions. These assumptions allow greater changes in the balance of trade balance as a result of trade liberalization, and tend to dampen the terms of trade effects. Both labour and capital stocks are assumed to be mobile within a region and immobile across regions. However, land and natural resources are industry-specific. All factors of production are assumed constant and, hence, factor prices adjust to clear factor markets.

2. Main features of GTAP database, version 6

The standard GTAP model based on the GTAP version 6 database has been used to perform various simulations for this study. The GTAP version 6 database covers up to a maximum of 87 regions and countries, 57 industries and 5 primary factor endowments. It gives a "snapshot" of the world economy in 2001. The GTAP database distinguishes trade transactions between commodities and services based on their regions of origin and destination as well as agents such as intermediate users, households and governments that absorb the commodities in the importing country. Trade taxes have been recorded for every trade transaction. The database consists of regional input-output tables that take detailed account of the inter-industrial linkages within regions, detailed bilateral trade, transport and protection data that describe the interregional economic linkages and macroeconomic data. All these data sources are combined in a consistent manner. Often in a research application, the sectors and regions are aggregated to a smaller size that suits specific needs of the research. Although the scope of GTAP has far exceeded the boundary of "trade analysis", bilateral trade data and the protection instruments remain two key components in its database, the quality of which has improved continuously. The quality of the data and the solid structure of the model provide insurance of quality analysis on trade liberalization, as the correct representation of the initial trade structure and the protection situation determine whether the starting point is accurate.

According to Martin and Anderson (2005), the new version of the GTAP database (version 6) contains a number of additional features compared with the previous versions:

- New protection data are included for a recent year (2001) compared with the previous version (1997);
- Using systematically developed new protection data from the MAcMap database, this version has incorporated much detail on different items of protection such as bound and applied tariffs, non-reciprocal as well as reciprocal tariff preferences, and the ad valorem equivalents of specific tariffs for the first time;
- Also included are main trade policy reforms occurring outside the Doha negotiations such as the commitments associated with accession to WTO by such economies as China and Taiwan Province of China;
- The implementation of the last Uruguay Round commitments such as the abolition of quotas on trade in textiles and clothing at the end of 2004 and final agricultural tariff reductions in developing countries; and
- The incorporation of the European Union expansion from 15 to 25 members in April 2004. This new database contains all new member countries, so an EU 25 region can be aggregated.

In order to undertake any sensible policy simulation with the GTAP version 6 database, it is necessary to aggregate regions or countries (with maximum possible disaggregation of the Asia-Pacific region) and sectors (with maximum disaggregation of agricultural sectors) since it is difficult to use the full disaggregated version of the database (with 87 countries and regions, and 57 industries) in this study. As table 2 shows, the aggregated database of this study contains 24 regions, with many Asia-Pacific countries featured separately, and 26 sectors, keeping all agricultural sectors separately.

D. Effects of agricultural trade liberalization in Asia-Pacific RTAs and BTAs

This section provides estimates of potential welfare gains as a result of agricultural trade liberalization under different RTA and BTA initiatives. The main intention is not to attempt to quantify the effects of all RTAs and BTAs similar to Scollay and Gilbert (2001), due to time and resource constraints; instead, an attempt is made to evaluate the effects of agricultural liberalization related to selected RTAs and BTAs.

1. Experiments

The impact of RTAs within the Asia-Pacific region and the hypothetical gigantic Asia-Pacific RTA would be analysed through the use of the GTAP model by simulating possible agricultural trade liberalization (elimination of all import tariffs within member countries). Many CGE studies related to the Asia-Pacific region, including those surveyed in section B of this chapter, did not focus on:

Table 2. Aggregation of GTAP regions and industries

Number	Code	Description	Number	Code	Description
1	**AUS**	Australia	1	**PDR**	Paddy rice
2	**NZL**	New Zealand	2	**WHT**	Wheat
3	**XOC**	Rest of Oceania	3	**GRO**	Cereal grains nec
4	**CHN**	China	4	**V_F**	Vegetables, fruit, nuts
5	**HKG**	Hong Kong, China	5	**OSDs**	Oil seeds
6	**JPN**	Japan	6	**C_B**	Sugar cane, sugar beet
7	**KOR**	Republic of Korea	7	**PFB**	Plant-based fibres
8	**TWN**	Taiwan Province of China	8	**OCR**	Crops nec
9	**XEA**	Rest of East Asia	9	**CTL**	Bovine cattle, sheep and goats, horses
10	**IDN**	Indonesia	10	**OAP**	Animal products nec
11	**MYS**	Malaysia	11	**RMK**	Raw milk
12	**PHL**	Philippines	12	**WOL**	Wool, silkworm cocoons
13	**SGP**	Singapore	13	**FRS**	Forestry
14	**THA**	Thailand	14	**FSH**	Fishing
15	**VNM**	Viet Nam	15	**OIL**	Oil, coal, gas and minerals nec
16	**XSE**	Rest of South-East Asia	16	**CMT**	Bovine meat products
17	**BGD**	Bangladesh	17	**OMT**	Meat products nec
18	**IND**	India	18	**VOL**	Vegetable oils and fats
19	**LKA**	Sri Lanka	19	**MIL**	Dairy products
20	**XSA**	Rest of South Asia	20	**PCR**	Processed rice
21	**USA**	United States	21	**SGR**	Sugar
22	**CNA**	Canada	22	**OFD**	Food products nec
23	**EU**	EU 25	23	**B_T**	Beverages and tobacco products
24	**ROW**	Rest of the World	24	**TEX**	Textiles and wearing apparel
			25	**MNFCS**	Other manufacturing
			26	**SVCES**	All services

Note: nec = Not elsewhere classified.

(a) The effects of agricultural trade liberalization within RTAs;

(b) The link between multilateral agricultural trade liberalization under DDA and possible agricultural trade liberalization within RTAs.

Therefore, it was decided to focus on the above two aspects in this study. First, it was decided to run all simulations to focus on agricultural trade liberalization within RTAs. As reviewed in chapters II and III, many of the current and proposed RTAs and BTAs exclude a wide range of agricultural products. This study attempts to evaluate the effects

of agricultural trade liberalization if the members of RTAs and BTAs are also willing to extend preferences towards agricultural trade. Second, an attempt is made to establish the link between multilateral trade liberalization and agricultural trade liberalization within RTAs.

Although there are a number of approaches to establishing this link, the approach used in this chapter is the introduction of RTAs and BTAs as post-DDA scenarios. As the starting point, a basic simulation is run to capture the DDA trade liberalization reform. Similar to previous studies reviewed in section A, the proposed tariff cuts and elimination of subsidies for DDA trade liberalization are used in this simulation to create an updated database using the GTAP model and the adjusted database described in the previous section. This updated database takes into account the effects of multilateral trade liberalization. After creating this updated database, simulations related selected RTAs and BTAs were carried out to evaluate how countries' gains or losses from multilateral trade liberalization would alter with the agricultural trade reforms within RTAs and BTAs if the member countries agreed to extend preferences to cover agricultural products. A number of simulations were carried out using the selected scenarios listed below in relation to selected RTAs and BTAs in the region.

(a) Selected experiments related to RTAs

Experiment 1 – SAFTA: SAARC countries eliminating agricultural tariffs with one another while maintaining existing agricultural barriers on trade with other countries.

Experiment 2 – AFTA: ASEAN countries eliminating agricultural tariffs with one another while maintaining existing agricultural barriers on trade with other countries.

Experiment 3 – ASEAN plus 3: ASEAN plus 3 countries eliminating agricultural tariffs with one another while maintaining existing agricultural barriers on trade with other countries.

Experiment 4 – ASEAN plus 3 plus India: ASEAN plus 3 countries and India eliminating agricultural tariffs with one another while maintaining existing agricultural barriers on trade with other countries.

Experiment 5 – Gigantic Asia-Pacific RTA: ESCAP member countries (excluding North American and South American countries) eliminating agricultural tariffs with one another while maintaining existing agricultural barriers on trade with other countries.

(b) Selected experiments related to BTAs

Experiment 6 – Indo-Lanka Trade Agreement: India and Sri Lanka eliminating agricultural tariffs with one another while maintaining existing agricultural barriers on trade with other countries.

Experiment 7 – Thailand-Japan Trade Agreement: Thailand and Japan eliminating agricultural tariffs with one another while maintaining existing agricultural barriers on trade with other countries.

It is important to note here that all the experiments mentioned above focused on the removal of all agricultural tariffs within RTAs and BTAs. This is not exactly what is happening in actual trade negotiations related to these agreements. As reviewed in chapters II and III, there are "sensitive" agricultural sectors such as sugar, tea and rice. Many member countries are reluctant to include these sectors in trade agreements. However, the incorporation of actual tariff cuts in these agreements and the exclusion of sensitive products was a very difficult and complex task in this study. For example, the GTAP commodity classification was not sufficient to accommodate some of the "sensitive" agricultural sectors in this region. Therefore, an attempt was made to evaluate the effects of full removal of agricultural tariffs within RTAs and BTAs to produce some benchmarks.

(c) Results of the experiments

In this section, the results of the different simulations related to the above experiments are discussed. Only the welfare results have been used to indicate "winners" and "losers". Analysing the welfare effects of trade liberalization under different scenarios is a complex task. Similar to any other GTAP application, the measure of change in welfare reported in this chapter is the equivalent variation in income, which can be defined as the money matrix equivalent of the utility change bought about by the price change. The standard GTAP model provides the results with a number of welfare decomposition components, in order to trace major factors that course welfare changes. There are two main factors or components among these components. The first important welfare component is the allocation efficiency. Countries are achieving efficiency gains when they remove trade distortion. This is the well-known allocation efficiency. The second important welfare component is the terms of trade (TOT) effect. In general, trade liberalization in agriculture will lead to a rise in food prices, particularly in the case of products that are highly protected in developed countries. This will lead to a TOT improvement in countries that are net exporters of protected commodities. On the other hand, net food importing countries expect to lose through TOT deterioration. This study focuses on these two factors when presenting results in this section.

It is important to caution readers about the welfare results of this study before carrying out the simulations and analysing the results. As summarised in section B, Baldwin and Venables (1995) grouped the possible mechanisms for welfare changes as a result of forming an RTA under three groups. In common with many CGE studies, the simulations carried out with the standard GTAP model in this study only identify the welfare mechanisms in the first group. Therefore, it is obvious that the results underestimate the welfare gains or loss. To capture other mechanisms, a dynamic CGE model based on imperfect competition is necessary. However, this study only uses the standard static GTAP model, based on the perfect competition assumption since dynamic and imperfect competitive variants of global CGE models are not freely available to users.

(i) Agricultural trade liberalization under SAFTA

Some of the main findings of the review of South Asian regional integration and agricultural trade liberalization in chapter II are that:

- South Asian economies remain the most protective region for agriculture;
- The South Asia interregional trade negotiations have given fewer preferences for agricultural trade;
- The number of agricultural products covered in these negotiations is very limited;
- The RTR and REST indices indicate potential for improving agricultural trade in the region;
- India can provide more opportunities to promote agricultural trade in the region.

The above findings indicate that agricultural trade liberalization is limited under the current preferential trading arrangements in South Asia. This allows a simulation to be run to examine the effects of full agricultural trade liberalization within the region if the member countries are willing to extend preferences toward agriculture with the implementation of multilateral trade liberalization under DDA. This will help in answering the question of "is it worthwhile for South Asian countries to move towards an FTA rather than focusing on multilateral trade liberalization?" This question has been raised by several experts in recent years in relation to SAFTA (Panagariya, 1999 and 2003). As stated at the beginning of this chapter, this simulation was run using the updated database after running the DDA simulation. The welfare results of this experiment are presented in table 3. The last column of table 3 shows the effects of multilateral trade liberalization for comparison purposes.

As table 3 shows, while major South Asian countries (India and the rest of South Asia including Pakistan) would benefit moderately from agricultural trade liberalization among the South Asian countries under SAFTA, small countries such as Bangladesh and Sri Lanka might experience moderate welfare losses. This is not surprising considering the relative share of South Asian trade in total world trade, as welfare results depend to a large extend on trade shares. As expected, India and Pakistan are winners. The results of revealed comparative advantage (RCA) calculations in chapter II indicated that India has RCA in a wide variety of agricultural goods and a higher potential to benefit from agricultural trade liberalization within the region. The results of our simulation support this finding. Bangladesh and Sri Lanka are likely to lose because they are net food importers. Bangladesh would be the biggest loser of welfare as a result of TOT effects. The low complementarity of trade within the region and low intraregional trade as indicated in chapter II have been reasons for marginal gains from agricultural trade liberalization in the region. South Asian countries, particularly India, would gain more under multilateral trade liberalization. These results are consistent with the previous study by Bandara and Yu (2003). The results show that the potential gains from agricultural trade liberalization

Table 3. Welfare effects of trade liberalization under SAFTA
(Equivalent variation in income, in 2001 US$ million)

Welfare	Allocative efficiency	Terms of trade effects	Total welfare changes under SAFTA	Total welfare changes under DDA agricultural scenario
1. Australia	0.2	-9.8	-9.6	452.30
2. New Zealand	-0.1	-1.2	-1.2	385.58
3. Rest of Oceania	0.0	0.0	0.0	69.93
4. China	4.9	2.9	6.8	-49.21
5. Hong Kong, China	0.0	1.7	2.0	-21.6
6. Japan	0.2	4.5	4.6	4 809.76
7. Republic of Korea	-1.8	1.8	-0.3	1 581.01
8. Taiwan Province of China	-0.1	1.7	1.5	9.78
9. Rest of East Asia	0.1	0.2	0.3	37.98
10. Indonesia	0.7	-12.0	-8.5	-10.68
11. Malaysia	-0.4	-4.0	-4.0	273.16
12. Philippines	0.3	0.0	0.2	-2.13
13. Singapore	0.1	0.2	0.3	10.22
14. Thailand	0.3	-4.1	-3.6	240.54
15. Viet Nam	0.3	-0.9	-0.7	3.12
16. Rest of South-East Asia	0.1	-2.6	-2.3	15.71
17. Bangladesh	3.2	-9.1	-8.2	-7.08
18. India	3.8	9.5	12.9	466.29
19. Sri Lanka	-3.9	3.1	-0.8	16.09
20. Rest of South Asia	-4.3	61.8	58.9	27.35
21. United States	-3.3	-10	-15.3	773.5
22. Canada	-0.4	-7.2	-7.1	429.22
23. European Union	7.7	-2.2	5.5	6 685.68
24. Rest of the world	2.5	-24.4	-21.3	357.90
Total	**10.2**	**-0.2**	**10.1**	**16 554.46**

Note: The sum of allocation efficiency and terms of trade does not equal the "total column" as total welfare also includes other components. See Huff and Hertel (1996) for welfare decomposition in the GTAP model.

would be moderate under SAFTA and it is therefore important for South Asian countries to pursue multilateral trade liberalization. This was emphasised by Panagariya (1999 and 2003) on a number of occasions using a simple analytical model.

(ii) Agricultural trade liberalization under AFTA

Once again, before analysing the quantitative results of this experiment, it is also important to note some findings of the descriptive analysis of agricultural trade between ASEAN countries in chapter III:

- The average share of intra-ASEAN agricultural exports (imports) in total ASEAN exports (imports) between 1993 and 2003 was low at 1.6 (1.4) per cent, while that of extra-ASEAN was slightly higher at 6 (5) per cent;
- In general, there is product similarity in agricultural trade or trade competitiveness rather than trade complementarity;
- The tariffs on a large proportion of intra-ASEAN agricultural trade are much lower compared to the most favoured nation (MFN) tariffs on extra-ASEAN agricultural trade.

Table 4 shows the potential welfare gains of agricultural under AFTA. The gains from agricultural trade liberalization are not large. These results are not surprising and, in fact, are consistent with the findings in chapter III. Even individual country welfare results related to ASEAN members are consistent with the descriptive analysis in chapter III. Agricultural trade liberalization within the ASEAN region results in welfare gains for member countries except the Philippines. However, the gains are not large. Members such as Thailand and Viet Nam perform well. As shown in chapter III, both Thailand and Viet Nam have a comparative advantage in a wide variety of agricultural products. The results suggest that the Philippines could suffer a very small loss as a result of agricultural trade liberalization within ASEAN. The welfare loss as a result of TOT deterioration is much bigger for the Philippines than for other countries. Agricultural trade liberalization within ASEAN member countries could result in welfare loses in non-partner countries, including small Asia-Pacific and South Asian countries, because of the well-known trade diversion effect.

(iii) Trade liberalization under ASEAN plus three countries

The results of the previous experiment demonstrate that agricultural trade liberalization within the ASEAN region would not result in substantial welfare gains for member countries. In this experiment, an attempt is made to show how ASEAN countries would benefit from an RTA of ASEAN plus three big economies in the region (China, the Republic of Korea and Japan). As noted in chapter III:

(a) Inter-ASEAN agricultural trade is higher than intra-ASEAN agricultural trade;

Table 4. Welfare effects of agricultural trade liberalization under AFTA
(Equivalent variation in income, in 2001 US$ million)

Welfare	Allocative efficiency	Terms of trade effects	Total welfare changes
1. Australia	0.6	-2.0	-0.7
2. New Zealand	-0.4	-7.7	-7.4
3. Rest of Oceania	-1.3	-4.2	-6.5
4. China	-9.4	-33.2	-31.8
5. Hong Kong, China	-0.1	-11.7	-12.2
6. Japan	-20.9	-10.6	-23.1
7. Republic of Korea	-5.6	-6.9	-10.7
8. Taiwan Province of China	-0.3	-5.5	-4.8
9. Rest of East Asia	-1.4	-1.3	-3.5
10. Indonesia	17.3	6.1	19.2
11. Malaysia	64.7	-7.4	20.8
12. Philippines	51.2	-50.5	-6.4
13. Singapore	8.8	87.0	101.1
14. Thailand	-14.7	109.3	90.7
15. Viet Nam	0.7	26.0	20.6
16. Rest of South-East Asia	-3.6	-9.7	-9.1
17. Bangladesh	-0.1	-1.3	-1.6
18. India	-0.6	-6.7	-6.2
19. Sri Lanka	-0.2	-0.1	-0.3
20. Rest of South Asia	-0.7	-1.5	-2.1
21. United States	9.7	-20.4	-8.4
22. Canada	2.0	2.5	6.4
23. European Union	2.1	-14.6	0.1
24. Rest of the world	-10.2	-35.6	-36.8
Total	**87.5**	**-0.1**	**87.4**

Note: The sum of allocation efficiency and terms of trade does not equal the "total column" as total welfare also includes other components. See Huff and Hertel (1996) for welfare decomposition in the GTAP model.

(b) Agricultural trade between ASEAN member countries, Japan and the Republic of Korea is more complementary than competitive, and there is a large degree of trade complementarity;

(c) Protection of the agricultural sector in Japan and the Republic of Korea is higher than in ASEAN member countries.

This experiment simulated the effects of agricultural trade liberalization within an enlarged AFTA covering ASEAN member countries plus China, the Republic of Korea and Japan. This simulation was run on the updated database after running the AFTA simulation

to examine the marginal benefits of adding the big three economies to ASEAN. Table 5 shows the welfare effects that emerged from this simulation. In this case, all participating countries in the RTA would benefit and the welfare gains would be much higher than those of AFTA. Japan would be the biggest winner from agricultural trade liberalization in an ASEAN plus 3 RTA (more than US$ 13 billion). The Republic of Korea would be the second biggest winner from this RTA. In fact, these countries would gain more than multilateral trade liberalization since full liberalization of agricultural trade within ASEAN plus 3 is assumed, rather than the reduction of tariffs by certain percentages under multilateral trade liberalization.

Table 5. Welfare effects of trade liberalization under ASEAN plus 3
(Equivalent variation in income, in 2001 US$ million)

Welfare	Allocative efficiency	Terms of trade effects	Total welfare changes
1. Australia	8.0	-166.6	-155
2. New Zealand	-1.7	-47.4	-44.1
3. Rest of Oceania	-3.3	-6.7	-12.2
4. China	-1 049.6	2 721.3	1 382.0
5. Hong Kong, China	-0.2	-139.5	-133.8
6. Japan	13 768.5	-601.9	1 3418.2
7. Republic of Korea	6 186.2	-3 328.2	2824.1
8. Taiwan Province of China	2.7	77.6	80.6
9. Rest of East Asia	5.9	107.2	138.7
10. Indonesia	17.1	23.0	15.7
11. Malaysia	0.0	68.4	25.0
12. Philippines	11.1	-86.2	-86.1
13. Singapore	65.9	603.9	704.6
14. Thailand	-169.6	785.4	578.2
15. Viet Nam	-111.3	84.0	-17.9
16. Rest of South-East Asia	-205.9	-4.7	-203.8
17. Bangladesh	-6.2	-2.6	-6.5
18. India	17.8	-24.0	-2.9
19. Sri Lanka	0.2	-2.5	-2.2
20. Rest of South Asia	7.9	-1.5	7.0
21. United States	160.4	-311.4	-112.8
22. Canada	9.1	-39.7	-24.7
23. European Union	95.4	424.8	554.4
24. Rest of the world	-19.0	-169.6	-172.4
Total	**18 789.8**	**-37.0**	**18 754.2**

Note: The sum of allocation efficiency and terms of trade does not equal the "total column" as total welfare also includes other components. See Huff and Hertel (1996) for welfare decomposition in the GTAP model.

These results once again confirm one of the main conclusions of the previous comprehensive CGE study by Scollay and Gilbert (2001) on RTAs and BTAs in the Asia-Pacific region. According to them, the welfare gains from RTAs would be much larger in the case of RTAs and BTAs involving developed countries such as Japan. However, our results demonstrate that while developed and large developing countries would gain from an ASEAN plus 3, small countries such as the Philippines and Viet Nam would be at risk of moderate welfare losses. This could be due to competition from a country such as China. For example, Viet Nam was found to be a main winner under the AFTA scenario. However, the results of this simulation show that Viet Nam could experience a welfare loss from an ASEAN plus 3. This might be due to competition from China in agricultural trade.

Excluded countries, such as those in South Asia, are likely to suffer under this scenario due to possible trade diversion effects.

(iv) Trade liberalization under ASEAN plus 3 plus India

In this experiment India was added to the ASEAN plus 3 RTA. Once again, the updated database was used to eliminate tariffs between ASEAN plus 3 plus India in order to evaluate the marginal effect of adding India to ASEAN plus 3. Table 6 presents the welfare gains under this scenario. Again, all participating countries would gain under this RTA. The results suggest that India would gain much more in participating in an ASEAN plus 3 plus India RTA than in a South Asian RTA. Our results are consistent with recent efforts by India in joining an ASEAN RTA. The marginal benefits of adding India to ASEAN plus 3 would not be as large as adding Japan, the Republic of Korea and China to ASEAN. However, all member countries would benefit from adding India to ASEAN plus 3.

(v) Trade liberalization under a gigantic Asia-Pacific RTA

Under this scenario it is assumed that all countries in the Asia-Pacific region, with the exception of the United States, are participating in a gigantic Asia-Pacific RTA similar to the European Union and NAFTA. The database, updated after running the DDA agricultural scenario, was also used in this experiment. The welfare results, shown in table 7, are very interesting. Overall, many countries in the region could gain more from the gigantic RTA than by participating in small RTAs. The total gains are higher than even the total welfare gains from the DDA agricultural scenario because full liberalization of agriculture was assumed in this experiment. However, the results suggest that two small South Asian countries (Bangladesh and Sri Lanka) and the Philippines could suffer welfare losses as a result of agricultural trade liberalization under a gigantic Asia-Pacific RTA. This is because of the competition from other developing countries in the regions.

The Indo-Lanka FTA has been one of the most popular BTAs in the South Asian region and an example for small BTAs. The results of agricultural trade liberalization between India and Sri Lanka are shown in table 8.

Table 6. Welfare effects of trade liberalization under ASEAN plus 3 plus India
(Equivalent variation in income, in 2001 US$ million)

Welfare	Allocative efficiency	Terms of trade effects	Total welfare changes
1. Australia	9.5	-214.5	-199.7
2. New Zealand	-2.0	-50.7	-47.1
3. Rest of Oceania	-3.3	-6.4	-11.8
4. China	-1 010.7	2 635.0	1 353.7
5. Hong Kong, China	-0.2	-138.8	-132.2
6. Japan	13 495.6	-644.6	13 121.4
7. Republic of Korea	6 293.5	-3 303.3	2 954.1
8. Taiwan Province of China	3.6	77.5	81.6
9. Rest of East Asia	5.5	107.7	138.7
10. Indonesia	-10.0	201.7	111.1
11. Malaysia	125.5	262.4	295.5
12. Philippines	61.5	-33.5	21.0
13. Singapore	62.5	560.1	658.0
14. Thailand	-34.3	859.0	783.7
15. Viet Nam	2.4	47.1	56.3
16. Rest of South-East Asia	-7.4	59.7	50.7
17. Bangladesh	-6.7	-4.6	-8.9
18. India	408.4	-118.4	296
19. Sri Lanka	0.0	-3.7	-3.5
20. Rest of South Asia	7.9	-22.3	-14.1
21. United States	197.5	-423.9	-166.7
22. Canada	13.5	-77.8	-53.3
23. European Union	123.8	440.3	624.3
24. Rest of the world	-8.4	-245.3	-216.9
Total	**19 727.7**	**-37.0**	**19 692.2**

Note: The sum of allocation efficiency and terms of trade does not equal the "total column" as total welfare also includes other components. See Huff and Hertel (1996) for welfare decomposition in the GTAP model.

(vi) Indo-Lanka Free Trade Agreement

As pointed out in Scollay and Gilbert (2001), our results suggest that forming a BTA between small developing countries would not result in big welfare gains for the participating countries. In fact, some small countries may lose from these BTAs. Sri Lanka tends to lose from agricultural trade liberalization under the Indo-Lanka FTA. This is the reason why Sri Lanka is reluctant to open its market to agricultural exports from India. As shown in chapter II, India has a comparative advantage in a wide variety of agricultural commodities and has become a major food supplier to Sri Lanka. Therefore, agricultural trade liberalization under the Indo-Lanka FTA will lead to further benefits for India. Other countries in the

Table 7. Welfare effects of trade liberalization within the ESCAP region
(Equivalent variation in income, in 2001 US$ million)

Welfare	Allocative efficiency	Terms of trade effects	Total welfare changes
1. Australia	28.4	1 642.1	1 666.4
2. New Zealand	20.7	151.4	154.6
3. Rest of Oceania	43.9	44.9	108.6
4. China	-928.1	2 235.6	1 089.6
5. Hong Kong, China	-1.0	-89.6	-82.1
6. Japan	14 399.8	-1 171.9	13 529.6
7. Republic of Korea	6 334.5	-3 294.3	3 011.2
8. Taiwan Province of China	57.1	-19.3	45.8
9. Rest of East Asia	5.3	125.7	161.3
10. Indonesia	-14.9	157.5	72
11. Malaysia	124.8	284.3	313.6
12. Philippines	67.8	-56.5	2.0
13. Singapore	53.8	474.1	558.3
14. Thailand	-2.3	572.6	547.8
15. Viet Nam	22.1	36.1	59.0
16. Rest of South-East Asia	-6.8	50.9	43.9
17. Bangladesh	17.4	-33.9	-21.0
18. India	563.3	-328.5	242.2
19. Sri Lanka	-2.4	-4.3	-6.5
20. Rest of South Asia	52.0	11.5	64.4
21. United States	222.3	-681.2	-535.8
22. Canada	-1.3	-127.9	-108.1
23. European Union	75.0	302.4	444.8
24. Rest of the world	-27.2	-331.4	-305.6
Total	**21 104.2**	**-49.6**	**21 055.9**

Note: The sum of allocation efficiency and terms of trade does not equal the "total column" as total welfare also includes other components. See Huff and Hertel (1996) for welfare decomposition in the GTAP model.

South Asian region may moderately suffer as a result of this agreement due to the trade diversion effect.

(vii) Agricultural trade liberalization under a Japan-Thailand FTA

In contrast to the Indo-Lanka FTA, the proposed FTA between Japan and Thailand is a very interesting case. This is between a developed and a rapidly developing country in the region. There is a trade complementarity between Japan and Thailand. However, Japan's agricultural sector is highly protected compared to Thailand. As reviewed in chapter III, Thailand is the biggest exporter of agricultural and fisheries products to Japan

Table 8. Welfare effects of trade liberalization under the Indo-Lanka Trade Agreement

(Equivalent variation in income, in 2001 US$ million)

Welfare	Allocative efficiency	Terms of trade effects	Total welfare changes
1. Australia	0.0	-1.1	-1.2
2. New Zealand	0.0	-0.2	-0.2
3. Rest of Oceania	0.0	0.0	0.0
4. China	0.3	-0.1	0.2
5. Hong Kong, China	0.0	0.1	0.1
6. Japan	0.3	0.8	1.2
7. Republic of Korea	0.0	0.3	0.3
8. Taiwan Province of China	0.0	0.1	0.1
9. Rest of East Asia	0.0	0.0	0.0
10. Indonesia	0.0	-1.2	-1.0
11. Malaysia	-0.1	-0.2	-0.3
12. Philippines	0.0	0.0	0.0
13. Singapore	0.0	-0.2	-0.2
14. Thailand	0.1	-1.4	-1.3
15. Viet Nam	0.0	-0.2	-0.2
16. Rest of South-East Asia	0.0	-0.1	-0.1
17. Bangladesh	0.0	-0.1	-0.2
18. India	-2.7	8.3	5.5
19. Sri Lanka	-5.0	-0.4	-5.4
20. Rest of South Asia	0.2	-1.2	-1.1
21. United States	0.2	-0.2	-0.1
22. Canada	0.0	-0.1	-0.1
23. European Union	0.3	0.1	0.4
24. Rest of the world	-0.6	-2.9	-3.4
Total	**-6.9**	**0.0**	**-6.9**

Note: The sum of allocation efficiency and terms of trade does not equal the "total column" as total welfare also includes other components. See Huff and Hertel (1996) for welfare decomposition in the GTAP model.

and nearly half of its current exports to Japan face market access restrictions. Japan has already agreed to cut tariffs on more than 500 agricultural products from Thailand. However, they have excluded rice and sugar from the preference list. This experiment was carried out to show how Thailand would benefit if Japan removed all barriers to Thai agricultural exports, even after multilateral trade reform under DDA.

Table 9 presents the results of this experiment. The results indicate that both countries would gain from agricultural trade liberalization under this FTA, unlike the case of the Indo-Lanka FTA. Thailand is the biggest winner in this case because it is assumed

that Japan is ready to remove its high trade barriers to Thai agricultural exports. As Thailand is a net agricultural exporter to Japan, it would enjoy a huge welfare gain through TOT. Japan would also benefit from this FTA, as shown in table 9. These gains are through allocation efficiency. However, the results also show that there is a trade diversion problem because of discriminatory trade. Some other countries in the region, such as Malaysia, Indonesia, the Philippines and the rest of South-East Asia, might lose due to the Thai-Japan FTA.

Table 9. Welfare effects of trade liberalization under Japan-Thailand Trade Agreement

(Equivalent variation in income, in 2001 US$ million)

Welfare	Allocative efficiency	Terms of trade effects	Total welfare changes
1. Australia	5.6	-22.0	-17.3
2. New Zealand	0.9	5.7	7.4
3. Rest of Oceania	-1.8	-5.1	-9.2
4. China	-25.0	-68.5	-52.5
5. Hong Kong, China	0.6	-67.8	-72.2
6. Japan	5 805.2	-3 440.1	2 545.2
7. Republic of Korea	-16.3	-3.5	-6.4
8. Taiwan Province of China	-4.1	-2.7	6.3
9. Rest of East Asia	2.7	57.0	70.9
10. Indonesia	-17.7	-32.4	-41.9
11. Malaysia	-17.1	-75.9	-60.9
12. Philippines	-21.1	5.9	-16.0
13. Singapore	-5.0	-55.9	-66.1
14. Thailand	-109.2	3 672.5	3 477.4
15. Viet Nam	1.0	35.2	40.2
16. Rest of South-East Asia	-4.7	-17.4	-22.7
17. Bangladesh	-2.2	-3.0	-5.8
18. India	-25.9	50.5	22.1
19. Sri Lanka	0.0	1.3	1.2
20. Rest of South Asia	-6.1	22.4	16.4
21. United States	9.7	236	58.7
22. Canada	0.9	-27.0	-18.0
23. European Union	-172.7	-24.3	-219.1
24. Rest of the world	-251.8	-283.8	-534.0
Total	**5 145.7**	**-43**	**5 103.6**

Note: The sum of allocation efficiency and terms of trade does not equal the “total column” as total welfare also includes other components. See Huff and Hertel (1996) for welfare decomposition in the GTAP model.

E. Limitations of the above quantitative analysis

The main tool used in the quantitative analysis in this chapter was the standard GTAP model based on the version 6 database, which has become the most popular global CGE model in the world. As noted in section B, the CGE modelling technique has also become the most popular analytical technique for evaluating the effects of RTAs. However, these models have been criticized on various grounds such as problems in interpreting the results, questions regarding the general equilibrium theory itself, poor performance of these models, the assumptions used in these models and weak econometric foundations (Dhar, 2006; Kehoe, 2002; Panagariya, 2000; Panagariya and Duttagupta, 2001; Ackerman, 1999; McKitrick, 1998; and Jorgenson, 1984). This section briefly outlines some of the limitations highlighted in the literature in order to show that the results presented in the previous section are subject to limitations.

First, Dhar (2006) noted the limitations of the theoretical framework of the general equilibrium model, citing Ackerman (1999). According to these critics, CGE models are based on the assumptions of neo-classical microeconomics. They question the idealistic behaviour of producers and consumers of equilibrium models as well as the existence of equilibrium. In addition, they criticize some assumptions such as perfect competition and market clearing prices.

Second, CGE models have been criticized on the basis of their sizes using standard labelling of “black boxes”. This is the same old argument used by opponents of CGE modelling, who claim it is difficult to understand what is driving the results because these models are large and complex. The critics add that the modellers are unable to interpret the results due to the complexities of these big models. In recent years, CGE modellers have been able to respond to this criticism by making their models more transparent and by developing methods to explain where the results come from. Welfare decomposition is a good example.

Third, the critics (Panagariya 2000; Panagariya and Duttagupta, 2001) argue that the CGE models generate benefits for a country from its own preferential trade liberalization due to erroneous reasons, such as:

(a) CGE models are based on internally inconsistent assumptions (wrong models);

(b) The gains are generated by choosing questionable values of some key parameters (wrong parameters).

With regard to the first point, critics argue that the CGE models covered by the survey of Robinson and Thierfelder (2002) are fundamentally flawed because they combine the Armington assumption (i.e., goods are differentiated by the country of origin) and fixed terms of trade. Further, they argue that the product differentiation associated with the Armington assumption is incompatible with fixed terms of trade. Using the partial equilibrium analysis, they argue that the introduction of terms of trade changes (flexibility) leads to a deterioration of welfare in member countries. On the second point, they believe that

CGE models generate benefits from RTAs because modellers are using the wrong model with the wrong parameter values. According to them, if a theoretically correct conventional model is selected, the CGE models are unlikely to generate benefits for a PTA member from its own preferential trade liberalization.

In their study, Panagariya and Duttagupta (2001) developed a partial equilibrium model and a stylized CGE model. Then, they argued, the results obtained from the stylized model based on the Armington assumption and their "correct" closure were consistent with their partial equilibrium story, i.e., a member of a PTA hurts itself and benefits the recipient of the preference.

Finally, the base year of databases and the level of aggregation of the sectors of CGE models have also been subjected to criticism.

The CGE modellers should take these limitations seriously and attempt to respond to their critics in a convincing way. In fact, they have already responded to these criticisms and attempted to improve the modelling techniques and the quality of results (Bandara and Yu, 2002; Hertel and others, 2003).

Although CGE models have been subjected to various criticisms such as those discussed above, they are the most popular analytical technique available to policy analysts of RTAs because of their ability to capture region-wide and country-wide effects. They have also allowed policy analysts to conduct a range of policy simulations, such as this study, within a consistent and rigorously specified theoretical framework. To date, the critics have not been able to produce an alternative empirical analytical technique to evaluate RTAs. This has been the main reason for the emergence of hundreds of CGE applications in analysing RTAs in recent years.

F. Conclusions

In this chapter, we have discussed the results of the simulations related to agricultural trade liberalization within selected RTAs and BTAs. The modelling was carried out using the standard GTAP model, which is a static model based on the assumption of perfect competition and its version 6 database. The starting point was the agricultural trade liberalization under DDA. The standard GTAP model was used to create an updated database with the DDA agricultural reform. The DDA agricultural reform simulation was carried out in a similar manner to those in previous studies. The different policy simulations were carried out based on the updated database except for the ASEAN plus 3 and ASEAN plus 3 plus India experiments. (The updated database from the ASEAN experiment was used for the ASEAN plus 3 and the updated database from ASEAN plus 3 was used for the ASEAN plus 3 plus India experiment, in order to observe the marginal benefits of adding members to an existing PTA). The main findings of this chapter can be summarized as follows.

The simulation results given in this chapter show that the welfare effects of agricultural trade liberalization on member countries within small RTAs such as SAFTA, the Indo-Lanka FTA and even AFTA are negligible. These results, however, suggest that the welfare gains will be larger when the proposed RTA is larger. At the same time, however, non-member countries will experience widespread negative welfare effects as a result of these large RTAs. In general, countries that are excluded from a particular RTA are much more likely to suffer welfare losses than are the included countries in the region. A gigantic RTA for the Asia-Pacific region is more suitable than overlapping small RTAs and BTAs, as discussed in the recent forums mentioned in the introduction. Japan may gain much higher welfare benefits when it participates in an ASEAN RTA and it may suffer when it does not participate in an ASEAN RTA. Some South Asian countries may suffer from a gigantic Asia-Pacific RTA. One point that stands out from many of our simulations is that Bangladesh and the Philippines are at risk of losing from agricultural trade liberalization in RTAs. This can be observed in the quantitative studies related to DDA agricultural trade liberalization surveyed in section A of this chapter.

It should be noted that the simulation results presented in this chapter are subject to the limitations highlighted otherwise in this publication.

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V. MODELLING THE DOHA ROUND OUTCOME: A CRITICAL VIEW

By Biswajit Dhar

Introduction

In a series of studies published during the past few years, World Bank economists have provided detailed projections by simulating the possible outcomes of the Doha Round negotiations.[1] The projections were obtained by using the LINKAGE Model, which is considered to be a global dynamic computable general equilibrium (CGE) model. The studies relied on the latest version of the LINKAGE Model, LINK6, which uses the Global Trade Analysis Program (GTAP). LINK6 incorporates 87 countries/regions and 57 sectors, and uses a dataset that has been updated up to 2001. This latter feature of the model, according to the authors of the studies, has helped to generate far more realistic results than those that used the earlier versions, which had incorporated data only up to 1997.

This chapter attempts a critical assessment of the above-mentioned studies. Section A presents an analysis of the results by looking at their implications for the developing countries in general and India in particular. Section B broadly alludes to some of the methodological problems that are associated with CGE models of the LINKAGE genre. The contention of the author is that the limitations of these models, especially in terms of the assumptions on which they are based, deserve close scrutiny and that this dimension needs to be kept in view as the results obtained from studies are read.

Section C comments on an important facet of this genre of studies, which is their emphasis on unbridled trade liberalization involving agricultural products. This facet ignores the fact that the developing countries have been arguing that they need to address their critical concerns regarding food security and livelihood while agreeing to the eventual Doha Round package. Most of the major developing countries are in agreement that products that meet their food security needs, and which support sizeable numbers of agricultural producers, should be granted higher levels of protection. The so-called Special Products (SPs), along with a Special Safeguard Mechanism (SSM), are the essential elements of the proposals tabled by these countries.[2] Section D presents a summary of the points highlighted by this chapter.

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[1] The most quoted of these papers are by Kym Anderson, Will Martin and Dominique van der Mensbrugghe (2005 and 2006).

[2] The G33 group of developing countries took the lead in proposing that SPs and an SSM should be included in the new agriculture deal. Subsequently, the G20 group also lent its support to the G33 proposal.

A. Analysis of the results

The LINKAGE model provides a baseline projection of the world economy, first up to 2005 and then up to 2015, assuming there are no other policy changes. Deviations from that baseline in 2015, due to total liberalization from 2005, are then examined.[3] The simulations for 2015 are based on alternative scenarios of trade liberalization emerging from the current round of multilateral trade negotiations. The results have been presented based on two sets of assumptions. The first assumes full liberalization of global merchandise trade. The projections relying on this assumption are worked out on the basis of a new source for protection data, which integrates trade preferences, specific tariffs and a partial evaluation of non-tariff barriers (NTBs).

Inclusion of NTBs in the CGE models has been one of the less satisfactory aspects. This stems from the fact that attempts made thus far to quantify the impact of NTBs has not been fully satisfactory. While the database on non-tariff measures that has been developed by UNCTAD, viz. the TRAINS database, is fraught with limitations ranging from incomplete coverage[4] to problems related to the measurement of their differential impacts on countries,[5] the Market Access Map (MAcMap) database that has been developed by ITC together with CEPII (Paris) includes only tariff quotas in its database. Considering that NTBs (i.e., standards and others) are assuming increasing importance in a world where tariffs are steadily declining, this limitation of LINK6 needs to be highlighted.

The second set of results is based on some of the key proposals for agricultural trade reforms that are being actively discussed in the ongoing negotiations. The simulations take into consideration the proposals for tariff cuts together with those for treating some of the tariff lines as “sensitive” or “special products”. What needs particular mention here is that none of the results of the two sets takes cognizance of the subsidy dimension, which, without doubt, holds the key to realizing the objective of a distortion-free market for agricultural commodities.

1. Full liberalization of global merchandise trade

The first major set of results that is reported in the above-mentioned papers pertains to the effect of the ongoing trade liberalization efforts on the real income up until 2015. These estimates have been made against the benchmark that assumes a complete freeing of merchandise trade during 2005-2010. It has been reported that real income gains by 2015 for the global economy as a whole would be US$ 287.3 billion per year. Of this

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3 Anderson and others (2005).

4 For most countries, the TRAINS database covers NTBs until the end of the 1990s. In the case of India, the NTB data are provided up to 1997, which is even before the removal of quantitative restrictions (QRs) that India was maintaining for balance of payments purposes.

5 For instance, exporters from LDCs and developing countries endowed with a relatively low level of technical skills would find it very difficult to conform to a technical barrier imposed by a developed country. However, the same may not be true for other countries.

increase, the share of the developed countries would be US$ 201.6 billion while for the developing countries the gains would be US$ 85.7 billion. In other words, the share of the developing countries in the total gains would be a third of the total global gains. More importantly, real income gains reported for the developing countries would be 0.8 per cent of the baseline income in 2015, which is marginally higher than the corresponding figure for the developed countries (0.6 per cent). Among the developing countries, the relatively prosperous Latin American region is expected to register real income of 1 per cent of the baseline income in 2015 while for the South Asian region the corresponding figure is only 0.4 per cent.

These broad results lend themselves to two varying interpretations. The first, which has been provided in the studies, is that the results are significantly favourable for the developing countries since their expected real income gains are considerably larger than their existing share in global production. Thus, while the developing countries as a whole account for a quarter of global production at present, they would be able to enjoy a third of the global gains in real income that is expected annually until 2015. An alternate view is that what the results are pointing to is the increasing gulf between the relatively prosperous and poorer countries. In overall terms, it can be said that the disproportionately large gains for the developed countries that the studies under discussion have predicted would reinforce the status of the lesser players in the global economy as "developing" even after the so-called "development round" has been implemented. What is more, the results point to increasing differentiation between the developing countries, as the more prosperous regions are slated to record relatively larger increases in real income.

The disaggregated results provided for a small set of countries broadly reinforce the above-mentioned conclusions. India is expected to register a real income gain of only US$ 3.4 billion a year, which is 0.4 per cent of the baseline income in 2015. In the case of China, the corresponding figures are US$ 5.6 billion and 0.2 per cent, respectively. On the other hand, countries such as Thailand are expected to gain US$ 7.7 billion while for Argentina, the real income gain could be nearly US$ 5 billion (see annex table 1 for details).

From the point of view of developing countries, the expected movements in the terms of trade provide the most disquieting numbers for this set of results. In what are considered as pioneering studies, Raul Prebisch (1960) and Hans Singer (1950) pointed out that developing countries, as exporters of primary commodities, faced deteriorating terms of trade while trading with the exporters of manufactured goods, viz., the industrialized countries.[6] Subsequently, many studies have argued that for most of the past six decades, the terms of trade deterioration has been a major malaise for the developing countries. In fact, past studies had indicated that the developing countries would not have suffered the ignominy of the debt crisis if they had not experienced deterioration in their terms of trade. In their attempt to maintain their past levels of United States dollar earnings in the face of

[6] For a more recent rendering of the issues involved, see United Nations Conference on Trade and Development (2005).

the deteriorating terms of trade, developing countries have only encouraged the development of unsustainable production structures that could have serious medium- to long-term implications for their non-tradeables, particularly labour and the environment.

The results provided by the LINKAGE Model show that the developing countries as a whole would suffer significant losses as a result of the changes in the terms of trade. The total loss that those countries are expected to suffer is expected to be nearly US$ 30 billion per year. This sharply contrasts with the projection for the high-income countries, which should expect more than US$ 30 billion gains annually from the terms of trade changes alone.

Among the developing country groupings, the projected changes in the terms of trade bring benefit only to the Latin American region. The South Asian region would suffer the largest losses on this account, amounting to more than US$ 11 billion per year, and most of those losses would be because of the US$ 9.4 billion losses that India is projected to suffer annually.[7] The results show that India and China would suffer the largest losses arising from the movements in the terms of trade. This implies that for the two emerging economies the projected gains in real income would come at a considerable price in terms of domestic resource use.

The gains from full liberalization of global merchandise trade, as estimated by the LINKAGE Model, occur largely due to the liberalization of the agriculture and food sectors. Almost two-thirds of the global gains are due to agricultural trade liberalization and are expected mainly because high-income countries would liberalize their agriculture sector. While these results are more along the expected lines, the disaggregated results that capture the impact of full global trade liberalization on agricultural and food output as well as trade, should raise plenty of heckles in many low-income developing countries, including India.

According to the results provided by the LINKAGE Model, global trade liberalization would significantly squeeze global agricultural output by 2015. Agricultural output should decrease by almost US$ 138 billion per year relative to the baseline. The members of the European Union would experience a sharp downturn in their output, as would also be the case for Japan. From among the group of developing countries, India and China are expected to face declines in agricultural output; in the case of the former country, the decline is expected to be much larger in absolute terms. However, the group of agricultural exporters (the Cairns group countries) are likely to have a vastly different experience. Two of the major countries in this group, i.e., Brazil and Argentina, are expected to find their agricultural output increasing annually by US$ 66 billion and US$ 12 billion, respectively. Some of the South-East Asian countries are also expected to register gains, albeit relatively small amounts. However, while Brazil and Argentina are projected to make a collective gain of more than US$ 76 billion a year, the gains for the developing countries as a whole

[7] The losses that India would suffer because of adverse terms of trade would be nearly three times its real income gains following from the full liberalization of global merchandise trade.

are put at US$ 67 billion. Quite obviously, therefore, some countries in the developing world are expected to suffer significant losses, and this group of countries is headed by India. The projected annual losses for India a projected to be of the order of US$ 24 billion per year, which is a 4 per cent decline in relation to the baseline. Together with India, China is also expected to be a loser, but of a much smaller magnitude (US$ 10 billion per year).

The projections made by LINK6 about the winners and losers in the agriculture sector following from the global trade liberalization have yet another significant dimension, in that the distribution of gains within the developing world is expected to be highly skewed. Thus, while the middle-income countries are expected to register annual increases of more than US$ 88 billion a year, the low-income countries are expected to suffer annual losses of more than US$ 21 billion. These results have serious longer-term implications since the projected losers in the developing world will be those countries that are significantly dependent on the agricultural sector as a source of livelihood for a majority of their populations. What the World Bank is therefore trying to tell us is that the agricultural sector in developing countries such as India, which is already feeling a tremendous squeeze, could suffer further as full global trade liberalization takes effect.

In regard to trade in agricultural products, the projections provided by LINK6 have a few surprises. China is shown to be emerging as a major exporter of agricultural products, with a likely export growth of nearly 146 per cent over the baseline. In comparison, China's import growth is expected to be a modest 27 per cent. India is expected to register a tremendous increase in agricultural imports – in excess of 165 per cent over the baseline. However, India's exports of agricultural commodities would increase by a relatively modest 53 per cent. These figures do not bode well for a country that is expecting to improve its presence in the global market for agricultural commodities once the prevailing policy distortions are substantially eliminated at the end of the current round of negotiations.

An interesting facet of the results on the emerging scenario in agricultural trade is that some of the agricultural exporters in the South-East Asian countries are not expected to do as well. For example, Thailand should expect a large import surge but only modest gains in exports by 2015.

For most developing countries, the objectives of food security and protection of livelihoods remains of paramount importance in the current round of multilateral trade negotiations. Food security, as is commonly understood, is the access to food at all times and at prices that are affordable. Thus, individual countries can ensure realization of the objective of food security by removing uncertainties in supplies and by having a reasonable control over the prices of the commodities forming the food basket. It may be argued that these twin objectives can at once be realized primarily by promoting local production of foodgrains. Furthermore, encouragement of the local production systems in developing countries would be the *sine qua non* for addressing the issue of livelihood security in the rural areas.

The question of whether or not developing countries would be able to address their food security concerns by promoting their domestic production systems has been addressed in the studies under discussion here. However, these results suffer from at least two sets of limitations. First, the results have been presented in terms of the broad groups of countries, with the exception of China. Second, the results for developing countries have been captured via regional groups, but not all regional groups have been included in the tables.

The results indicate that while the developing countries as a whole would be fully self-sufficient[8] in respect of food and agricultural products following full global liberalization of merchandise trade, the developed countries would increase their dependence on the global markets for these products. As for the regional groups of developing countries, the Latin American countries would improve their position as net suppliers to the global market, as would the countries of sub-Saharan Africa. At the same time, however, the South Asian countries would face deterioration in their self-sufficiency ratio and, in case of China, full liberalization of global merchandise trade leaves the self-sufficiency ratio unaltered.[9] It should be pointed out that the projected deterioration in the self-sufficiency ratio in food and agriculture products for the South Asian region is a result of the large imbalance between the growth of imports and exports that has been estimated for India. As indicated above, LINK6 has estimated a large increase in India's import volumes together with a relatively modest increase in exports in the aftermath of full trade liberalization.

The foregoing discussion shows quite clearly that the claims of a win-win situation arising from the full liberalization of merchandise trade, which the World Bank has never ceased to make, have been challenged by World Bank-supported studies. The results indicate that liberalization of merchandise trade would lead to greater inequities in the global economy, much of which would be reflected in the realm of trade. The inequities would not just be between the developed and the developing countries, but even between developing countries. Thus, while the relatively advanced countries in the Latin American, East Asian and South-East Asian regions are expected to perform much better, the low-income countries, particularly those in the South Asian region, would be confirmed as the laggards. The studies also point to a sharp deterioration in the terms of trade of a large majority of developing countries, which could take place in the aftermath of the liberalization episode. Changes in the terms of trade faced by the developing countries and their implications have not been given much importance in the current discourse, but it is the author's view that countries suffering from the adverse terms of trade movements need to remember the seminal contributions of Prebisch, Singer and other scholars to making us understand the inimical consequences of this phenomenon.

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8 Defined as domestic production as a percentage of domestic consumption.

9 The results predict a 91 per cent self-sufficiency ratio for China. This conclusion needs to be seen in the context of an earlier World Bank study that predicted China could attain a self-sufficiency ratio of 90 per cent in cereals, but only if it made substantial investments in bolstering agricultural productivity. See World Bank (1997).

What is particularly significant is the fact that the liberalization of merchandise trade is likely to have deleterious consequences for the agricultural sector of the South Asian region. In this context, results provided for India stand out. The results indicate a decline in India's agricultural output; as a logical corollary, India is expected to end up increasing its imports by a wide margin. The results thus portend a major crisis that India, and some of the other low-income countries, would face should full liberalization of merchandise trade take place.

The second set of results provides simulations using various proposals in the realm of market access that are currently being discussed as a part of the Doha Round of multilateral trade negotiations. The following discussion brings out the key features of the results.

2. Doha Round scenarios

Based on the proposals that are on the negotiating table, eight scenarios have been provided for working out the possible outcome the Doha Round:

(a) Scenario 1 – Tariff reduction using the tiered formula with three rates of reduction for developed countries (45, 70 and 75 per cent), four for developing countries (35, 40, 50 and 60 per cent) and no reduction for least developed countries (LDCs).

(b) Scenario 2 – Inclusion of "sensitive" products in scenario 1 with developed countries being allowed to treat 2 per cent of their HS six-digit tariff lines as "sensitive", which would be subjected to tariff reduction of 15 per cent. Developing countries and LDCs allowed 4 per cent of HS six-digit tariff lines as "special" products.

(c) Scenario 3 – Inclusion of "sensitive" products in scenario 1 with developed countries being allowed to treat 5 per cent of their HS six-digit tariff lines as "sensitive", which would be subject to tariff reduction of 15 per cent. Developing countries and LDCs allowed 10 per cent of HS six- digit tariff lines as "special" products.

(d) Scenario 4 – A proportional cut in tariffs that brings about the same reduction in average agricultural tariffs in developed countries as a group (44 per cent) and developing countries as a group (21 per cent), as would be the case by using the tiered formula.

(e) Scenario 5 – Includes in scenario 4, 2 per cent "sensitive" products for developed countries and 4 per cent "sensitive" and "special" products for developing countries. As a result, the average tariff reduction would be 16 per cent for developed countries and 9 per cent for developing countries.

(f) Scenario 6 – Adds to scenario 5 a tariff cap of 200 per cent – resultant average cuts in agricultural tariffs, 18 per cent

(g) Scenario 7 – Includes in scenario 1 cuts in non-agricultural tariff bindings of 50 per cent to be effected by developed countries, 33 per cent by developing countries and none by LDCs.

(h) Scenario 8 – Developing countries and LDCs take the same level of cuts in bound tariffs on non-agricultural products as do the developed countries in scenario 7.

The results obtained under each of these scenarios have some interesting dimensions. The largest gains in real income for all countries and country groupings would be made only when the parallelism between tariff reductions in agricultural and non-agricultural products becomes a reality.[10] At the other extreme, are the results obtained under scenario 3, which provides for the inclusion of "sensitive" and "special" in the mode. The results show a decline in the real income for developing countries as a whole, with only gains for the developed countries. Therefore, the studies under discussion are predicting that developing countries would be worse off by taking recourse to the special and differential treatment.

The major results presented for the various Doha Round scenarios need to be critically evaluated as they appear to be militating against the position that the developing countries have taken during the negotiations. Based on their assessment of the impact of trade liberalization on their economies, developing countries have argued that gradualism must be accepted as the universal basis for liberalization efforts that are under way in the current Round. This principle has been emphasized particularly in the area of agriculture, where concerns for the small and marginal farmers and their lack of staying power in the market, in the face of competition from agro-business, have been raised. What has lent strength to their arguments is the fact that in several developing countries, the "big bang" liberalization episodes involving the agriculture sector have had inimical consequences for production and employment in the sector.[11]

It may be pointed out that the results presented in the studies do not capture the objective reality because of the inherent limitations of the methodology of the model employed. In the past few years, critics have pointed to the methodological shortcomings of the CGE framework upon which the LINKAGE Model is based. As is briefly indicated in the next section, the assumptions upon which the LINKAGE Model is based are either unrealistic in nature or are far removed from the conditions that exist in the developing world. It must be mentioned that the limitations alluded to here are intrinsic to the

[10] The implications of this finding should be considered carefully in the light of the Hong Kong Ministerial Declaration, which, in paragraph 24, instructed the "negotiators to ensure that there is a comparably high level of ambition in market access for agriculture and NAMA". Although the Declaration added that "[t]his ambition is to be achieved in a balanced and proportionate manner consistent with the principle of special and differential treatment", the findings of the studies in question suggest that developing countries would be better off by foregoing their S&D options.

[11] Dhar (2005) gives an account of the experiences of some of the South-East Asian countries in this regard.

LINKAGE Model; in other words, whatever "improved" versions of the present studies that the authors may subsequently present to us, the results would still remain debatable.

B. Methodological limitations of the LINKAGE Model

In a persuasive article, Ackerman (1999) has given us plenty to think about with regard to the structural limitations of the CGE framework. The general equilibrium theory bases itself on the two Arrow-Debreu theorems developed in the 1950s. The first postulates that assuming the existence of a competitive market economy, any market equilibrium would be Pareto optimum. The second theorem stipulates that under certain conditions, every Pareto optimum is a market equilibrium given some initial conditions. There has been considerable debate centring on the Arrow-Debreu framework, the nub of which is the realism of some of the assumptions. Ackerman, for example, points out that the assumptions such as increasing returns to scale are a common occurrence, but if this fact is incorporated in the theory, the existence of equilibrium is no longer certain. This would, in other words, imply that a Pareto optimum need not be market equilibrium.

The major problem with the CGE models, as has been commented upon by several of its critics, stems from the rather limited set of assumptions on which they are based. These models are primarily market simulation models incorporating idealistic behaviour of producers and consumers across markets and determining equilibrium, market-clearing prices and quantities. The limitation of considering the ideal types could lead to problems of aggregation, as aggregate demand, for example, may not be as well-behaved as individual demand. Micro-foundations of macroeconomics can, therefore, be fraught with imponderables.

This general discussion sets the stage for looking at some of the specifications that have been used to define the LINKAGE Model. As indicated briefly, some of the assumptions on which the model is based do not even remotely capture the reality, particularly in the developing countries. Some of the assumptions made in the model are that:

(a) "All sectors are assumed to operate under cost optimization". This assumption assumes away market imperfections that may not allow producers to manage their operations for ensuring "cost optimization".

(b) "Three different production archetypes are defined in the model – crops, livestock and all other goods and services. Sectors are differentiated by different input combinations and substitution elasticities within each one of the main production archetypes". Clearly, the problem of aggregation, as was alluded to above, would occur because of this assumption. This problem would appear in a more acute manner in the case of a country such as India, which has an extremely diversified agricultural sector.

(c) "The key feature of the crop production structure is the substitution between intensive cropping versus extensive cropping, i.e., between fertilizer and land". This assumption assumes away the production rigidities that exist in the agricultural sector of the developing countries. An overwhelmingly large

proportion of the farm population has virtually no choice, in so far as changing the nature of crop production. Change in the relative prices of fertilizers and land could not, therefore, lead to any change in the production structure.

(d) "Land is assumed to be partially mobile across agricultural sectors". Refer to the comment made in respect of assumption (c).

(e) "Each national economy is divided into two distinct geographic zones [that] define potentially separate labour markets. A single elasticity … determines the nature of the labour market". Labour markets are far from the ideal type that is assumed for the purposes of the model in question. In particular, the assumption of "a single elasticity" does not at all capture the complexities of the labour market as it exists in developing countries.

The above-mentioned examples of assumptions made in the LINKAGE Model unerringly point to the need for interpreting the results with some degree of caution.

It does appear that some of the leading advocates of the CGE models are quite aware of the limitations when they suggest that the results of the models should be undergo the test of validation with observations from the real world, which they have tried to capture. It has been argued that such cross-checking "has to allow for the fact that the projections from an AGE (applied general equilibrium) are conditional in that they are based on particular assumptions about values of variables exogenous to the model, and, as such, the projections could deviate from the actual outcomes if the realized values of exogenous variables differed from the assumed values". It has been further surmised that in "actual implementation, aspects of policy could differ from their assumed values".[12] Thus, while some of the foremost protagonists of the CGE models have suggested that the results of the models should be considered after examining their validity with the real world, the authors of the studies under discussion have presented their results in such a manner that the decision makers should treat them as absolute benchmarks. In this context, it needs to be pointed out that even during the Uruguay Round negotiations, a plethora of studies, again using the CGE models, projected significant gains for the developing countries that turned out to be no more than a chimera.[13] Several developing countries had, in fact, made extensive commitments hoping for the gains that the studies had projected; however, only two years after the implementation of the Uruguay Round package had begun, they were forced to bring to the fore the fact that the anticipated gains had not materialized.[14]

Further corroboration was provided recently of the point that the recommendations made by the genre of studies referred to above are unlikely to benefit the developing countries. A study by Maros Ivanic and Will Martin (2006) on "Potential implications of

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12 Kehoe, Srinivasan and Whalley (2005).

13 See, for example, Goldin and Mensbrugghe (1993).

14 These issues were first raised by developing countries as the so-called "implementation issues" in the Second Ministerial Conference held in Geneva in 1998.

agricultural special products for poverty in low-income countries"[15] provided an expansive analysis of how poverty in developing countries would increase if those countries relied on the instrument of SPs, which, according to the G20 and the G33 countries, must form a central pillar of the outcome of the Doha Round negotiations on agriculture. However, as indicated in the following section, the exposition of Ivanic and Martin is based on a flawed understanding of the bases on which the G20 and G33 countries have argued for the recognition of SPs.

C. Inadequate understanding of the critical concerns of developing countries

Although from the title of the paper it would appear that they are addressing the problems of poverty at the economy-wide level, the authors are effectively focusing on urban poverty for arriving at most of their conclusions. Thus, the authors surmise that poverty would increase because protection granted to the SPs would increase prices of staples and would hence affect the marginalised sections of the urban population. This conclusion is based on an inappropriate methodology for selecting the SPs. The authors use only a few elements of the criteria proposed by the G33, which helps them to assume that SPs would only comprise staples. They fail to recognize that list of SPs would also include non-food commodities that are significant from the point of view of safeguarding livelihoods, besides contributing to rural development. These two criteria are extremely important, as they could provide the much needed policy space for the developing countries to improve the fortunes of their rural economy.

In putting forth their strong arguments against the use of SPs, the authors seem to be unaware that one of the major causes of growing urban poverty in most developing countries is the fact that the rural sector in those countries has faced relative neglect; in other words, there has been a bias against this sector in the overall development priorities. With the rural sector failing to create increased employment opportunities due to this policy bias, the urban centres appear to have provided the much needed window of opportunities for the rural population. However, the resultant large-scale migration has eventually swelled the ranks of the marginalized sections in the urban areas. For the developing countries, therefore, development of the rural economy – which includes above all the improvement in the income-generating capacities of agriculture – is of utmost priority. Many of these countries have argued in the ongoing negotiations on agriculture that the "development dimension" must be recognized by granting the much needed policy space for the developing countries to pursue the right set of policies, one that removes the policy bias against the agricultural sector. The key to the pursuit of this objective, in the view of the G20 and the G33, is the mechanism of SPs.

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[15] The comments are based on a version of the paper dated 16 October 2006. Subsequently, however, the World Bank withdrew the paper in the face of critical comments. On 24 January 2007, Francois J. Bourguignon, World Bank Chief Economist, issued a statement saying that the final paper would be posted on the World Bank's research page "when the research is complete and it has gone through the standard review processes".

The inadequate understanding of the authors is also reflected in their comments that increased protection from the use of SPs "effect poverty through three broad channels". The first is the "effect of commodity prices and wages on incomes in the short term". While the authors are concerned about the detrimental effect of commodity price rise on the urban consumers, most developing counties would like to use the SPs to influence commodity prices and wages so as to benefit the farm households. It may be argued that the main reason for using the instrument of SPs is to ensure reversal of the secular decline in commodity prices, in particular prices of commodities that are critical for providing livelihood security for farm households. In the past decades, low commodity prices have reduced the farmers in developing countries to marginalized existence and this situation can get far worse if the subsidized commodities are allowed to enter the developing country markets for "promoting" trade.

According to Ivanic and Martin (2006), the second adverse effect of protecting SPs would be that resources would be "diverted away from the activities that yield the highest social returns into those that generate the highest market returns at distorted prices". It is argued here that the purpose of the SPs is precisely to divert resources into the agriculture, since this would yield the highest social return in the medium to the long term. As indicated earlier, the policy bias against agriculture had militated against the flow of resources into the sector that supports around two-thirds of the workforce in India. This policy bias can be set right by providing adequate protection to the products that are sensitive in nature by using the mechanism of SPs. There is absolutely no case for lowering protection to products that are identified as SPs by promoting inefficient producers who can take advantage of the distorted prices in the markets for agricultural commodities.

The third concern of the authors that SPs would result in diverting resources away from "export-oriented activities towards import replacement", causing productivity to fall, again exposes their limited understanding of economic realities. Contrary to their understanding that the SPs are to be viewed from the trade perspective, developing countries have argued that this instrument would ensure the realization of food security and protection of livelihoods, which stand out among the major objectives of development policy. These countries have frequently argued that that the twin objectives of food security and livelihoods protection should be viewed as non-trade concerns.

The issue of food security has been identified as a major objective to be pursued by the global community by the Rome Declaration on World Food Security and the World Food Summit Plan of Action in 1996. The Summit emphasized that food security exists when "all people at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". The Rome Declaration took into consideration the multifaceted character of food security, and emphasized that "concerted national action and effective international efforts" were needed to "supplement and reinforce national action."[16] The Plan of Action adopted

[16] Food and Agriculture Organization of the United Nations, Report of the World Food Summit, 13-17 November 1996 (WFS 96/REP), part one, appendix.

by the World Food Summit proposed that “each nation must adopt a strategy consistent with its resources and capacities to achieve its individual goals and, at the same time, cooperate regionally and internationally in order to organize collective solutions to global issues of food security.” Besides emphasizing the importance of national policies, the Rome Declaration and the Plan of Action presented an interesting perspective on the role of trade in the pursuit of food security. The participating countries expressed their commitment to “strive to ensure that food, agricultural trade and overall trade policies are conducive to fostering food security for all through a fair and market-oriented world trade system.” Thus, quite contrary to the view that imperatives of trade should be given primacy, as is the underlying theme of the Ivanic and Martin paper, the World Food Summit had emphasized that food security should be the primary concern of the global community.

D. Conclusions

This chapter provides a critical view of the studies based on the LINKAGE Model, a variant of the CGE models, which have projected the possible outcomes of the Doha Round of multilateral trade negotiations. These studies have provided detailed estimates of the likely gains/losses for individual countries/groups of countries in 2015, and the projected end-date for the implementation of the commitments that WTO member States would take at the end of the current round of negotiations.

The aggregative results presented in the studies indicate that of the annual gains in real income that would result from full liberalization of merchandise trade in all WTO member States, the share of the developing countries would be one-third. According to the authors of the studies in question, developing countries should consider the projected gains as a favourable outcome, since their current share in global production is around 25 per cent of the total. However, what these results also imply is that the wedge between the developed and the developing countries would get wider following a disproportionately large increase in the gains for the former.

The detailed results for individual countries/groups of countries only provide more evidence of a widening gap between the more prosperous and the less prosperous regions of the world. In the developing world, the likely gainers are the more advanced middle-income countries, while the low-income countries, including India, would not fare well. The more disturbing of the results is the projected deterioration of the terms of trade, particularly in countries such as India and China, in the aftermath of full liberalization of global merchandise trade. This chapter has attempted to argue that it is these detailed results, rather than the aggregative numbers, that need to looked at carefully.

An attempt has also been made to indicate that there is a more fundamental problem with these studies. The CGE models are based on assumptions whose veracity is questionable, particularly in the case of developing countries. In addition, as expected, the models are considerably at odds with the reality in the developing countries.

It is pertinent to note here that some of the leading advocates for the CGE models have opined that the results obtained from the models must be cross-checked with real-life conditions in order to ascertain their reliability. Such an exercise is, of course, impossible in respect of the results that the studies in question have provided. However, what should be pointed out is that CGE models of an earlier generation projected substantial gains for the developing countries following on from the implementation of the Uruguay Round package. It would have been more appropriate if the authors of the papers under discussion had presented their results against the backdrop of the past frailties of their models.

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Annex

Annex table 1. Impacts on real income from full liberalization of global merchandise trade, by country/region, 2015

(Relative to the baseline, in 2001 US$)			
Country/region	**Real income gain (US$ billion)**	**Gain due just to change in terms of trade (US$ billion)**	**As percentage of baseline income in 2015**
Australia and New Zealand	6.1	3.5	1.0
EU25 and EFTA	65.2	0.5	0.6
United States of America	16.2	10.7	0.1
Canada	3.8	-0.3	0.4
Japan	54.6	7.5	1.1
Republic of Korea and Taiwan Province of China	44.6	0.4	3.5
Singapore and Hong Kong, China	11.2	7.9	2.6
Argentina	4.9	1.2	1.2
Bangladesh	0.1	-1.1	0.2
Brazil	9.9	4.6	1.5
China	5.6	-8.3	0.2
India	3.4	-9.4	0.4
Indonesia	1.9	0.2	0.7
Thailand	7.7	0.7	3.8
Viet Nam	3.0	-0.2	5.2
Russian Federation	2.7	-2.7	0.6
Mexico	3.6	-3.6	0.4
South Africa	1.3	0.0	0.9
Turkey	3.3	0.2	1.3
Rest of South Asia	1.0	-0.8	0.5
Rest of East Asia	5.3	-0.9	1.9
Rest of Latin America and Caribbean	10.3	0.0	1.2
Rest of ECA	1.0	-1.6	0.3
Middle East and North Africa	14.0	-6.4	1.2
Selected sub-Saharan Africa	1.0	0.5	1.5
Rest of sub-Saharan Africa	2.5	-2.3	1.1
Rest of world	3.4	0.1	1.5
High-income countries	**201.6**	**30.3**	**0.6**
Developing countries – WTO definition	**141.5**	**-21.4**	**1.2**
Developing countries	**85.7**	**-29.7**	**0.8**

Annex table 1 *(continued)*

(Relative to the baseline, in 2001 US$)			
Country/region	**Real income gain (US$ billion)**	**Gain due just to change in terms of trade (US$ billion)**	**As percentage of baseline income in 2015**
Middle-income countries	69.5	-16.7	0.8
Low-income countries	16.2	-12.9	0.8
East Asia and the Pacific	23.5	-8.5	0.7
South Asia	4.5	-11.2	0.4
Europe and Central Asia	7.0	-4.0	0.7
Middle East and North Africa	14.0	-6.4	1.2
Sub-Saharan Africa	4.8	-1.8	1.1
Latin America and the Caribbean	28.7	2.2	1.0
World total	**287.3**	**0.6**	**0.7**

Source: Anderson and others (2006).

Annex table 2. Regional and sectoral source of gains from full liberalization of global merchandise trade, developing and high-income countries, 2015

(Relative to baseline scenario)*						
Countries/regions	**Gains by region in US$ billion**			**Percentage of global gain**		
	Developing	**High income**	**World**	**Developing**	**High income**	**World**
Developing countries						
Agriculture, food	28	19	47	33	9	17
Textiles, clothing	9	14	23	10	7	8
Other merchandise	6	52	58	7	26	20
All sectors	43	85	128	50	42	45
High-income countries						
Agriculture, food	26	109	135	30	54	47
Textiles, clothing	13	2	15	15	1	5
Other merchandise	4	5	9	5	2	3
All sectors	43	116	159	50	57	55
All countries liberalize						
Agriculture, food	54	128	182	63	64	63
Textiles, clothing	22	16	38	25	8	14
Other merchandise	10	57	67	12	28	23
All sectors	86	201	287	100	100	100

Source: Anderson and others (2006).
* Small interaction effects are distributed proportionately and numbers are rounded to sum to 100 per cent.

Annex table 3. Impacts of full global trade liberalization on agricultural and food output and trade, by country/region, 2015

(Relative to the baseline)						
Country/region	**US$ billion**			**Percentage change relative to baseline**		
	Exports	**Imports**	**Output**	**Exports**	**Imports**	**Output**
Australia and New Zealand	18.0	1.4	27.9	38.0	23.0	20.5
EU25 and EFTA	21.7	103.5	-185.8	-10.8	39.3	-12.3
United States	18.4	16.5	30.7	11.6	25.6	0.0
Canada	14.6	6.9	7.2	40.2	54.3	4.8
Japan	2.8	34.7	-91.7	60.4	169.7	-18.4
Republic of Korea and Taiwan Province of China	33.2	12.3	-0.4	600.2	189.8	20.2
Singapore and Hong Kong, China	7.0	1.5	7.4	115.2	7.6	35.4
Argentina	10.4	0.7	12.2	44.2	36.9	11.5
Bangladesh	0.8	0.4	-2.5	60.9	15.6	0.8
Brazil	38.0	2.8	66.4	120.6	48.4	34.0
China	15.1	24.1	-9.9	145.6	27.3	-0.9
India	5.1	13.4	-23.8	53.2	165.4	-3.7
Indonesia	3.6	1.9	4.5	32.2	23.5	2.4
Thailand	5.6	5.2	5.3	29.2	57.2	4.7
Viet Nam	1.2	3.3	-2.1	13.9	170.4	-13.3
Russian Federation	0.7	4.4	-7.8	15.4	22.3	-5.4
Mexico	11.9	6.7	6.2	66.0	52.9	2.2
South Africa	2.4	1.1	1.4	55.9	40.2	4.9
Turkey	4.3	4.3	-0.1	109.4	140.3	0.5
Rest of South Asia	2.9	3.7	-1.5	57.1	83.3	-1.8
Rest of East Asia and the Pacific	9.4	5.8	7.4	61.7	50.7	6.8
Rest of Latin America and Caribbean	36.0	9.6	37.0	68.1	42.3	11.7
Rest of ECA	9.2	10.9	-22.2	106	90.5	-1.6
Middle East and North Africa	13.2	17.5	-7.8	64.1	43.1	-1.2
Selected sub-Saharan African countries	4.5	1.3	5.3	50.0	74.4	9.2
Rest of sub-Saharan Africa	9.5	8.1	-4.1	45.4	79.2	-0.6
Rest of world	8.2	5.8	2.9	168.3	123.3	4.4
High-income countries	**115.8**	**176.7**	**-204.7**	**15.7**	**65.5**	**-5.3**
Developing countries	**191.9**	**131**	**66.8**	**67.4**	**51.5**	**2.2**

Annex table 3 *(continued)*

(Relative to the baseline)						
Country/region	**US$ billion**			**Percentage change relative to baseline**		
	Exports	**Imports**	**Output**	**Exports**	**Imports**	**Output**
Middle-income countries	156.1	93.1	88.2	72.7	41.9	3.2
Low-income countries	35.8	37.9	-21.4	52.3	99.3	-1.0
East Asia and the Pacific	34.8	40.4	5.2	54.4	35.5	0.1
South Asia	8.9	17.5	-27.8	55.1	122.9	-3.0
Europe and Central Asia	14.2	19.6	-30.0	79.7	62.6	-1.9
Middle East and North Africa	13.2	17.5	-7.8	64.1	43.1	-1.2
Sub-Saharan Africa	16.4	10.5	2.6	47.7	71.6	2.1
Latin America and the Caribbean	96.3	19.8	121.8	75.7	46.1	13.8
World total (excluding intra-European Union trade)	**307.7**	**307.7**	**-137.8**	**36.3**	**59.8**	**-1.3**

Source: Anderson and others (2006).

Annex table 4. Impact of global liberalization on self-sufficiency in food and agricultural products, selected regions, 2015*

Product	High-income countries		Developing countries		Sub-Saharan Africa		Latin America and Caribbean		South Asia		China	
	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization
Rice	97	49	99	101	91	78	97	98	102	102	100	108
Wheat	137	118	89	91	53	35	90	119	98	98	90	92
Other grains	103	99	90	84	101	102	104	103	99	99	76	32
Oilseeds	119	55	75	90	158	279	184	247	100	102	1	1
Sugar	92	47	100	113	109	116	126	173	99	99	45	27
Plant-based fibres	117	78	95	104	385	694	94	109	87	92	93	95
Vegetables and fruit	83	72	103	105	137	141	146	183	95	88	97	97
Other crops	83	85	110	106	167	174	140	132	104	104	11	10
Livestock	103	104	98	98	103	103	103	102	99	99	94	94
Other natural resources	91	91	102	102	125	125	128	127	95	95	92	92
Fossil fuels	81	81	119	120	147	154	116	115	66	57	85	82
Processed meats	99	89	98	109	96	136	105	132	98	101	89	85
Vegetable oils, fats	96	91	98	99	85	72	111	106	65	25	96	90
Dairy products	103	100	88	92	74	78	92	94	97	97	60	57
Other food, beverages and tobacco	97	99	101	96	100	93	106	106	111	108	97	96
Textiles	91	91	99	98	75	62	85	79	130	134	99	98
Wearing apparel	63	55	153	162	78	62	92	80	513	765	225	255
Leather products	58	53	136	138	85	59	107	87	170	186	156	164
Chemicals, rubber, plastics	103	104	89	87	70	66	79	74	91	89	92	89
Iron, steel	99	100	97	96	94	93	100	92	95	92	93	92
Motor vehicles, parts	101	102	87	82	58	68	101	99	94	84	88	79
Capital goods	101	100	93	93	45	45	81	79	79	79	104	106
Other manufacturing	95	95	105	104	115	108	98	92	97	94	111	112

Annex table 4 *(continued)*

Product	High-income countries		Developing countries		Sub-Saharan Africa		Latin America and Caribbean		South Asia		China	
	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization	Baseline	Global liberalization
Agriculture and food	98	93	99	100	108	111	111	120	99	96	91	91
Agriculture	97	84	98	100	118	123	121	134	99	98	88	88
Processed foods	98	97	99	98	98	97	105	111	98	87	96	94
Textile and wearing apparel	74	70	114	116	77	61	92	81	149	163	125	129
Other manufactures	98	98	98	97	92	91	93	89	88	85	101	101

Source: Anderson and others (2006).

* Self-sufficiency is defined as domestic production as a percentage of domestic consumption.

Annex table 5. Change in real income in alternative Doha scenarios, 2015
(In 2001 US$ billion compared with baseline scenario)

Country/region	Scen. 1	Scen. 2	Scen. 3	Scen. 4	Scen. 5	Scen. 6	Scen. 7	Scen. 8
Australia and New Zealand	2.0	1.1	1.1	2.2	1.2	1.2	2.4	2.8
EU25 and EFTA	29.5	10.7	9.1	28.2	10.7	10.9	31.4	35.7
United States	3.0	2.3	2	3.4	2.5	2.1	4.9	6.6
Canada	1.4	0.5	0.3	1.2	0.4	0.4	0.9	1.0
Japan	18.9	1.8	1.3	15.1	1.4	12.9	23.7	25.4
Republic of Korea and Taiwan Province of China	10.9	1.7	1.6	7.3	1.7	15.9	15	22.6
Singapore and Hong Kong, China	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	1.5	2.2
Argentina	1.3	1.0	1.0	1.4	1.1	1.0	1.3	1.6
Bangladesh	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
Brazil	3.3	1.1	0.9	3.2	1.1	1.1	3.6	3.9
China	-0.5	-1.5	-1.6	-0.4	-1.4	-1.1	1.7	1.6
India	0.2	0.2	0.2	0.1	0.2	0.2	2.2	3.5
Indonesia	0.1	0.2	0.2	0.2	0.2	0.0	1.0	1.2
Thailand	0.9	0.6	0.3	1.0	0.8	0.8	2.0	2.7
Viet Nam	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.5	-0.6
Russian Federation	-0.3	-0.7	-0.8	-0.1	-0.7	-0.7	0.8	1.5
Mexico	-0.2	-0.3	-0.3	-0.2	-0.3	-0.3	-0.9	-0.2
South Africa	0.1	0.3	0.1	0.1	0.2	0.3	0.4	0.7
Turkey	0.6	0.0	0.0	0.5	0.1	0.0	0.7	1.4
Rest of South Asia	0.2	0.1	0.1	0.2	0.1	0.2	0.3	0.7
Rest of East Asia	0.1	0.0	0.0	0.1	0.1	1.0	0.3	0.6
Rest of Latin America and Caribbean	3.7	0.5	0.5	3.7	0.5	0.4	3.9	4.0
Rest of ECA	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	-0.6	-0.7
Middle East and North Africa	-0.8	-1.2	-1.5	-0.9	-1.2	-1.2	-0.6	0.1
Selected sub-Sahara African Countries	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.2
Rest of sub-Saharan Africa	0.0	-0.3	-0.3	0.0	-0.3	-0.3	-0.1	0.3
Rest of world	0.4	0.0	0.0	0.3	0.0	0.0	0.6	0.6
High-income countries	**65.6**	**18.1**	**15.2**	**57.2**	**17.8**	**43.2**	**79.9**	**96.4**
Developing countries	**9.0**	**-0.4**	**-1.7**	**9.1**	**0.1**	**1.1**	**16.1**	**22.9**
Middle-income countries	8.0	-0.5	-1.9	8.3	0.0	1.0	12.5	17.1
Low-income countries	1.0	0.1	0.1	0.8	0.2	0.0	3.6	5.9
East Asia and the Pacific	0.5	-0.8	-1.2	0.9	-0.4	0.6	4.5	5.5
South Asia	0.4	0.3	0.3	0.3	0.3	0.4	2.5	4.2
Europe and Central Asia	0.1	-0.9	-1.1	0.2	-0.9	-0.9	0.8	2.1
Middle East and North Africa	-0.8	-1.2	-1.5	-0.9	-1.2	-1.2	-0.6	0.1
Sub-Saharan Africa	0.3	0.0	-0.2	0.3	-0.2	-0.1	0.4	1.2
Latin America and the Caribbean	8.1	2.3	2.0	8.0	2.5	2.1	7.9	9.2
World total	**74.5**	**17.7**	**13.4**	**66.3**	**17.9**	**44.3**	**96.1**	**119.3**

Source: Anderson and others (2006).

Annex table 6. Change in real income in alternative Doha scenarios, 2015 percentage change

(In 2001 US$ billion compared with baseline scenario)

Country/region	Scen. 1	Scen. 2	Scen. 3	Scen. 4	Scen. 5	Scen. 6	Scen. 7	Scen. 8
Australia and New Zealand	0.35	0.20	0.18	0.38	0.22	0.20	0.42	0.48
EU25 and EFTA	0.29	0.11	0.09	0.28	0.11	0.11	0.31	0.36
United States	0.02	0.02	0.01	0.02	0.02	0.01	0.03	0.05
Canada	0.15	0.05	0.03	0.13	0.05	0.05	0.10	0.11
Japan	0.38	0.04	0.03	0.30	0.03	0.26	0.48	0.51
Republic of Korea and Taiwan Province of China	0.86	0.13	0.13	0.58	0.14	1.26	1.19	1.79
Singapore and Hong Kong, China	-0.02	-0.03	-0.03	-0.02	-0.04	-0.04	0.35	0.52
Argentina	0.32	0.26	0.25	0.34	0.27	0.26	0.34	0.39
Bangladesh	-0.06	-0.03	-0.02	-0.06	-0.03	-0.04	-0.10	-0.09
Brazil	0.50	0.16	0.13	0.49	0.17	0.17	0.55	0.59
China	-0.02	-0.06	-0.06	-0.01	-0.05	-0.04	0.07	0.06
India	0.02	0.03	0.02	0.02	0.03	0.02	0.25	0.40
Indonesia	0.05	0.07	0.07	0.08	0.09	0.01	0.37	0.44
Thailand	0.43	0.29	0.15	0.49	0.38	0.38	0.99	1.33
Viet Nam	-0.20	-0.09	-0.06	-0.22	-0.11	-0.16	-0.83	-0.97
Russian Federation	-0.06	-0.16	-0.17	-0.03	-0.15	-0.15	0.16	0.31
Mexico	-0.02	-0.04	-0.04	-0.02	-0.04	-0.04	-0.11	-0.02
South Africa	0.06	0.17	0.05	0.09	0.11	0.17	0.25	0.49
Rest of South Asia	0.13	0.05	0.05	0.11	0.06	0.14	0.17	0.39
Rest of East Asia	0.02	0.01	0.01	0.05	0.04	0.36	0.09	0.22
Rest of Latin America and Caribbean	0.44	0.06	0.06	0.43	0.06	0.04	0.46	0.47
Rest of ECA	-0.06	-0.09	-0.09	-0.06	-0.09	-0.08	-0.22	-0.26
Middle East and North Africa	-0.07	-0.10	-0.13	-0.07	-0.10	-0.10	-0.05	0.01
Rest of sub-Saharan Africa	0.02	-0.13	-0.13	0.01	-0.14	-0.14	-0.02	0.13
Rest of world	0.19	0.0	0.0	0.14	0.0	0.02	0.26	0.28
High-income countries	**0.20**	**0.06**	**0.05**	**0.18**	**0.05**	**0.13**	**0.25**	**0.30**
Developing countries	**0.09**	**0.0**	**-0.02**	**0.09**	**0.0**	**0.01**	**0.16**	**0.22**
Middle-income countries	0.10	-0.01	-0.02	0.10	0.0	0.01	0.15	0.21
Low-income countries	0.05	0.01	0.01	0.04	0.01	0.0	0.18	0.30
East Asia and the Pacific	0.01	-0.02	-0.03	0.03	-0.01	0.02	0.13	0.16
South Asia	0.03	0.03	0.02	0.02	0.03	0.03	0.21	0.36
Europe and Central Asia	0.01	-0.09	-0.11	0.02	-0.09	-0.09	0.08	0.21
Middle East and North Africa	-0.07	-0.10	-0.13	-0.07	-0.10	-0.1	-0.05	0.01
Sub-Saharan Africa	0.06	-0.01	-0.05	0.06	-0.04	-0.02	0.10	0.27
Latin America and the Caribbean	0.29	0.08	0.07	0.29	0.09	0.08	0.29	0.33
World total	**0.18**	**0.04**	**0.03**	**0.16**	**0.04**	**0.10**	**0.23**	**0.28**

Source: Anderson and others (2006).

Annex table 7. Share of agricultural and food production exported under different scenarios, 2001 and 2015

(Unit: per cent)

Countries/regions	Baseline 2001	Baseline	Full global liberalization, 2015	Scenario 7
Australia and New Zealand	33.3	37.2	42.7	39.5
EU25 and EFTA	16.7	17.3	17.6	16.6
EU25 and EFTA (excluding intra-EU25)	4.0	5.1	7.7	5.0
United States	6.3	7.9	9.2	8.1
Canada	24.5	29.5	40.0	32.5
Japan	0.9	1.2	2.3	1.5
Republic of Korea and Taiwan Province of China	4.4	4.8	26.5	8.6
Singapore and Hong Kong, China	26.0	30.0	47.8	30.8
Argentina	21.6	25.2	32.5	26.9
Bangladesh	1.7	3.6	5.7	3.5
Brazil	15.3	17.3	28.9	21.7
China	3.3	0.9	2.2	1.0
India	3.5	3.0	4.7	3.3
Indonesia	11.9	10.0	12.9	9.9
Thailand	30.2	28.2	34.6	30.1
Viet Nam	23.9	26.9	35.3	26.7
Russian Federation	6.1	5.5	6.7	6.0
Mexico	5.6	7.8	13.2	8.5
South Africa	16.0	12.7	18.8	13.5
Turkey	9.6	6.0	12.4	7.0
Rest of South Asia	6.0	6.2	9.9	6.6
Rest of East Asia	16.1	14.6	22.1	14.9
Rest of Latin America and Caribbean	13.9	18.1	27.1	20.7
Rest of ECA	2.4	1.7	3.7	1.9
Middle East and North Africa	5.2	6.7	11.2	7.2
Selected SSA countries	13.2	18.1	25.4	19.2
Rest of sub-Saharan Africa	11.2	15.8	23.3	16.5
Rest of world	6.6	7.0	17.7	8.7
High-income countries	**5.8**	**7.5**	**11.6**	**8.2**
Developing countries	**7.5**	**6.9**	**11.6**	**7.8**
Middle-income countries	7.6	6.6	11.4	7.6
Low-income countries	7.3	7.9	12.4	8.4
East Asia and the Pacific	7.2	4.1	6.5	4.3
South Asia	3.8	3.6	5.7	3.9
Europe and Central Asia	3.7	2.7	5.0	3.0
Middle East and North Africa	5.2	6.7	11.2	7.2
Sub-Saharan Africa	12.5	15.8	23.1	16.6
Latin America and the Caribbean	12.7	15.9	24.8	18.5
World total	**9.5**	**9.5**	**13.2**	**10.0**
World total (excluding intra-EU25)	6.6	7.2	11.6	8.0

Source: Anderson and others (2006).

VI. CHINESE AGRICULTURAL REFORM, THE WORLD TRADE ORGANIZATION AND PREFERENTIAL TRADE NEGOTIATIONS

*By Shunli Yao**

Introduction

China,[1] as a member of WTO, has become part of the multilateral trade negotiations. At the regional level, China has also entered into negotiations with ASEAN, Australia, New Zealand and Chile on FTAs. Agriculture is a contentious issue in all those talks. China is the largest developing member country of WTO and a key trader in agricultural products; thus, its positions on, and their implications for WTO agriculture negotiations and regional FTA talks have received much attention.

To understand all those issues, it is also necessary to have a clear understanding of the role of Chinese agriculture in the country's national economic development as well as the economic and political factors that help shape Chinese agricultural trade policy. Section A reviews the Chinese industrialization process and identifies major distortions created under central planning. Section B compares Chinese agricultural and industrial reforms with the focus on agricultural trade. Section C discusses the political economy of Chinese agricultural trade policy and speculates about its future development. Section D explains Chinese negotiation positions on agricultural issues in WTO and evaluates the China-ASEAN FTA. Section E provides the conclusion.

A. Distortions in the pre-reform Chinese economy

During the mid-twentieth century, when the People's Republic of China was founded, China was an agrarian economy with an underdeveloped industrial sector. Eager to catch up with the Western powers, like most developing countries at that time, China adopted

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[1] Throughout this chapter, China refers to mainland China (excluding Hong Kong, China and Macao, China) as a customs entity. Hong Kong, China as well as Macao, China and Taiwan Province of China are identified as independent customs entities.

a strategy that emphasized the development of the industrial sector.[2] Agriculture, as in many countries pursuing fast industrialization, was given a role to support this development strategy. Nationalization of the fledging industrial and commercial enterprises, together with collectivization of the rural economy, made it possible for the Government to carry out that strategy effectively, following the Soviet model of central planning in its management of the national economy.

Except for the early 1950s, when the country received aid from the former Soviet Union, China was isolated from rest of the world until 1979. As a result, China's early industrialization had to be internally financed. In addition to budget outlay, the bulk of which went to industrial investment, the Government set low wage levels for industrial workers, high prices for industrial products and low prices for agricultural products as an implicit tax aimed at diverting agricultural revenues and private savings into the industrial sector. As a result, the agricultural sector became disadvantaged.

To develop the industrial infrastructure at the expense of agriculture was a common practice in most post-Second World War developing countries. However, in China, it was not just a matter of economic policy or development strategy. At play was also the way political status was granted to various social groups. According to the Constitution of China, it was not peasants but workers in the mostly state-owned industrial sector who were given the leading class status in the Chinese political establishment. It was customary for communist countries to regard proletariat workers as the vanguard of the regimes, because most revolutions took place in cities and industrial workers formed the backbone of the communist military forces. Therefore, orthodox communist ideology commends proletariat workers. In China, however, the rural-based Chinese Communist Party was supported by the peasants in the civil war against the city-based Nationalists. Yet, surprisingly, the Constitution of China put proletariat workers above peasants in Chinese political life. This can be seen as being a convenient way for the Government to lend its political support to the industrialization campaign while, at the same time, aligning itself with orthodox communist ideology.

At that time, wages for Chinese workers were low by international standards, yet enviable in the eyes of the peasants. Workers in state-owned enterprises (SOEs) also enjoyed free housing and health care as well as guaranteed job security. Later in the reform era, when laid-off workers lost those benefits, there was a widespread outcry and the pace of SOE reform had to be slowed. In contrast, the under-represented Chinese peasants have never received the same treatment, a situation for which there is ample anecdotal evidence. In one incident, a rural housewife resorted to seeking the personal intervention of the Chinese prime minister (through an accidental encounter) to help her husband, who was a migrant worker at an urban construction site, to get his (and a million others) long overdue wages. The Chinese legal system itself should have been able to

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[2] See Yifu Lin, Cai Fang and Li Zhou (2003), *China's Miracle: Development Strategy and Economic Reform*, for a thorough analysis of this "catch-up" strategy.

handle such a case, but obviously it did not live up to the expectations of "justice for all", including the under-represented.

Biased resource allocation between agriculture and manufacturing at the national level was only one of many pervasive distortions in China's central planning system at that time. Within the manufacturing sector, priority was given to heavy industries that produced investment goods at the expense of light industries that produced consumer goods. Within the agricultural sector, grain production was emphasized to ensure an adequate food supply for the country.

Normally, a catch-up strategy also requires an import-substitution trade policy that effectively prevents a country from engaging in international trade to its fullest potential. In China's case, the United Nations embargo led by the United States of America against the then-new communist regime in the 1950s forced the country to make "self-reliance and self-sufficiency" the cornerstone of its foreign trade policy. In agriculture, a policy-induced 1958-1960 famine further reinforced the conviction of the Chinese leadership that "grain self-sufficiency" should become the principle of utmost importance in agricultural trade policy-making.

In order to build up an industrial infrastructure in a short period, this development strategy had its own merit. However, given China's scarce capital and land resources but abundant supply of labour, the strategy was not in line with that country's comparative advantages and was only viable when foreign trade was restricted.

Emphasis on heavy industries and grain production did help boost production, although apparently at levels that were far below potential.[3] However, intrinsic flaws in central planning also created severe problems, such as a structural imbalance in the national economy and a lack of incentives for producers. By the end of the 1970s, the economy was such a shambles that it prompted the Government to embark on reforms that profoundly transformed the Chinese economy.

B. Chinese reform and agricultural trade

Chinese reform has been a gradual process. At the beginning, the reform was aimed at improving the efficiency of the system within the central planning framework, and market elements were introduced as supplements. Since the early 1990s, the market economy approach has been increasingly gaining legitimacy in the official reform blueprint and bold initiatives have been introduced to correct various distortions. The result has been economic growth both in the agricultural and industrial sectors.

Agricultural reform in China has resembled industrial reform in many aspects. The "household responsibility system" was introduced in the early 1980s to boost farmers'

[3] The high growth rate under central planning was mainly due to greater inputs but often with low productivity gains, a point that was made popular by Paul Krugman, in his article, "The myth of Asia's miracle" in *Foreign Affairs*, November 1994.

incentives in agricultural production, and a similar responsibility system was later applied to enterprises. As a quasi-privatization measure, the land tenure system was instituted to ensure the rights of farmers to keep their land for 20 years; in enterprise reform, the shareholding system gave workers a stake in production performance. Most commodity prices were freed up, subject only to market forces. Grain production was still the priority in agriculture. But instead of mandatory production quotas to be sold to the Government at lower than market prices (the procurement practice during most of the reform years), a price support programme has been put in place to encourage grain production even though market prices are often higher than the minimal procurement prices. For Chinese peasants, this change in procurement policy has helped to transfer grain revenue from grain marketing bureaus to grain growers, and is a positive move as far as peasants' income is concerned.

Liberalization has unleashed the potential of labour-intensive production in both agriculture and industry. In agriculture, the development of the horticulture, poultry, dairy and animal husbandry subsectors has helped to diversify the diet of the population, and has increased peasants' income. In industry, the development of the consumer goods sector and integration with the international production chain through foreign trade, particularly under the processing trade regime, has changed the Chinese industrial makeup. As a result, within both agriculture and industry, distortions due to overemphasis of grain production and heavy industry during the pre-reform era have been substantially reduced; however, more needs to be done to the factor markets.

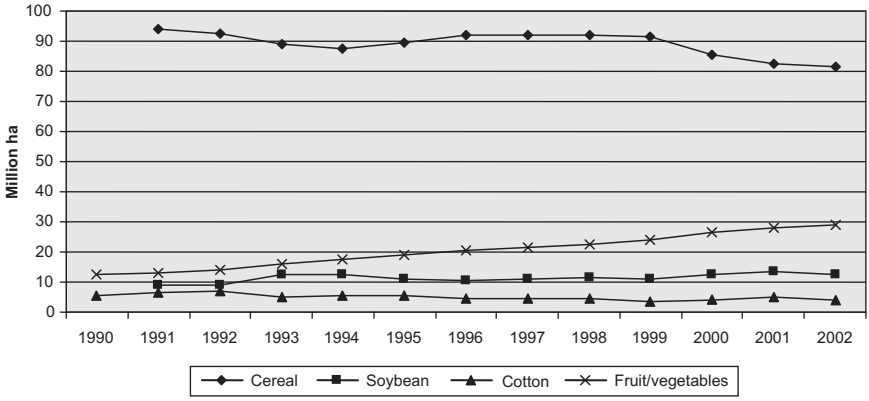
Yet, despite extensive liberalization of the Chinese economy throughout the reform era, the practice of taxing agriculture to subsidize industry did not change until 2006. Notwithstanding the overall economic growth, the rural-urban divide has further increased (the urban-rural per capita income ratio increased to more than 3:1 in 2005). To correct this disparity, China's eleventh Five-Year Plan includes the New Rural Development (NRD) programme in its platform, which is aimed at giving rural development a higher priority.

One immediate policy reform has been the abolition of all fees and taxes associated with agricultural production. This is a highly significant move because, for the first time in several thousand years of Chinese history, no taxes and fees are being imposed on peasants. This reflects the determination of the Chinese leadership to deal with rural backwardness, which is a long overdue task. However, it remains to be seen how far the NRD campaign can go, as it is a top-down approach. It is not initiated, monitored or run by rural residents, who are the potential beneficiaries, and it may therefore deviate from its original objectives during the course of its implementation. After all, NRD supporters have to compete for resources with other more politically powerful constituencies.

In China, arable land and capital are scarce. However, unlike arable land, capital can be borrowed from abroad. This simple fact explains the different ways in which structural adjustment has been achieved in both agriculture and industry. In agriculture, with a slight increase in total sown area, additional land use for horticulture has been met mainly by a smaller sown area for grain (figure I). This is a reflection of China's changing policy on "grain self-sufficiency" (down from 100 per cent to 95 per cent). The declining

grain acreage has been met by simultaneous gains in productivity. The household responsibility system gave a boost to grain production in the early 1980s. Agricultural research and development investment, mostly in the grain sector (some of which was during the pre-reform era), started to show its impact in the reform years. However, since the 1990s, grain yield has been mainly fuelled by more inputs rather than by productivity improvement, a reflection of the grain sector's fatigue.

Figure I. Sown area of major crops in China, 1990-2002



Sources: *China Statistics Yearbook* and the Food and Agriculture Organization of the United Nations database, various years.

The correction of distortions within Chinese industry has taken a different route. While many small SOEs have been privatized, medium and large-sized SOEs are mostly intact and continue to receive generous state subsidies. Without substantial reform of SOEs, the makeup of Chinese industry has been transformed by the emergence of a vibrant non-state sector that includes private, collective and foreign-funded industrial enterprises. While the private and collective enterprises are struggling to raise money for their operations, foreign-funded enterprises have brought in huge amounts of capital in the form of foreign direct investment. Today, China is the world's top recipient of foreign direct investment. Of course, the release of rural surplus labour has also contributed to the development of labour-intensive industries. As a result, in 2005, SOEs contributed only one third of the total industrial gross domestic product in China. In contrast, because agricultural production solely relies on local factors (such as land and labour), its structural makeup has not changed very much compared to industrial production. The share of grain and other land-intensive crops (soya and cotton) in China still made up as much as 70 per cent of sown areas in 2002.[4]

[4] If measured in terms of actual arable area, this number will be smaller as sown areas shown in Chinese statistics are based on single cropping for horticulture and multiple cropping for grains.

How far has the correctional process progressed in Chinese agriculture? To answer this question, an international comparison can be made with Brazil, a country of similar size but a quite different labour/land endowment ratio. As discussed by Jales and others (2005), in the past 30 years, the reduction of state intervention, market deregulation and trade liberalization, combined with research and development investment and macro stabilization, have helped modernize Brazilian agriculture and agribusiness. Brazil now has one of the most liberalized agricultural trade regimes in the world (table 1). China is also quite liberalized as far as tariffs are concerned, but its agricultural trade patterns are also determined by other factors, as will be discussed below.

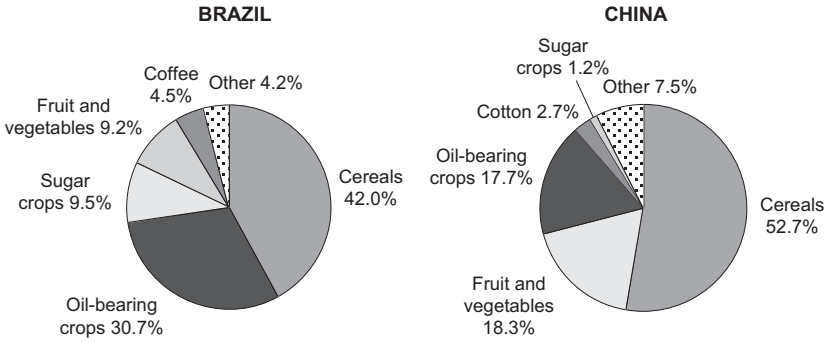
Table 1. Applied tariff structures for Brazil, China and other countries

	Brazil 2003	China 2002	United States 2003	EU 2003	India 2002
Mean	10.2	15.3	12.3	29.3	36.9
Median	10.0	13.0	4.4	14.4	30.0
Standard deviation	6.0	11.5	29.6	40.2	25.8
Variation coefficient	0.58	0.75	2.40	1.37	0.70
Maximum tariff	55.0	71.0	350.0	277.2	182.0
No. of tariff lines	959	1 044	1 829	2 091	690
No. of tariff lines = 0	79	80	388	403	17
No. of tariff lines > 30%	4	130	167	633	108

Sources: Ministério do Desenvolvimento, Indústria e Comércio Exterior-Brazil, United States International Trade Commission, integrated tariff of the European Communities-European Union and the World Trade Organization, cited in Jales and others, 2006, p. 7.

China has 154.6 million hectares of arable land compared to 54.5 million ha in Brazil. At the same time, China's total employment is 737.1 million while that of Brazil is 66.2 million (Jales and others, 2006). These numbers suggest that if Chinese agriculture were sufficiently open to international trade, production of its labour-intensive versus land-intensive agricultural products should have exhibited a pattern that is in sharp contrast to that of Brazil. In fact, figure II, which depicts the composition of total Brazilian and Chinese planted area in 2002, shows striking similarities in farmland composition for land-intensive versus labour-intensive crops (7:3 for cereals and oil-bearing crops versus horticulture etc.) in the two countries. This simple comparison suggests that Chinese agriculture has not been fully integrated into the world economy. Barriers to trade in various forms, either policy-induced or natural, are to blame. Chinese agriculture mainly consists of smallholders on subsistence farms who have not been brought into the domestic market. Obviously, there is still a long way to go to complete the integration of Chinese agriculture into the domestic and international markets.

Figure II. Composition of planted area in Brazil and China, 2002



Sources: Brazilian Institute of Geography and Statistics, China Statistics Yearbook, and the Food and Agriculture Organization of the United Nations as cited in Jales and others, 2006, p. 15.

The various ways in which the Government supports the grain sector and SOEs have ramifications for trade reform. With a broad tax base including non-state sectors (and until recently, agriculture) and the dwindling share of SOEs in the national economy, subsidizing SOEs through easy loans and enabling them to survive competition from non-state sectors as well as imports is financially manageable for the Government. Trade liberalization in the manufacturing sector can make the life of SOEs miserable but does not necessarily threaten their existence. In contrast, the viability of the price support programme instituted to ensure grain self-sufficiency as well as the grain self-sufficiency target itself requires a grain-trade protectionist policy. The economic logic is that liberalizing border measures (improved market access, in China's case) would make it financially infeasible to maintain the price support programme, given the large size of the Chinese grain sector and very limited budget for agricultural domestic support. (This is especially true when the inefficient SOEs keep siphoning off financial resources from banks and the state budget).

It is true that, as far as tariffs are concerned, Chinese agricultural trade is also quite liberalized as illustrated by table 1. However, key Chinese agricultural imports, including grains, are also subject to tariff rate quota (TRQ) restriction (table 2). While TRQs have been expanding over the years, Jales and others (2005), citing Bryan Lohmar and David Skully (2003), observed that:

> "The implementation of China's TRQ commitments, however, has proved to be rather problematic. Those who export to China express concerns as to the lack of transparency in the quota allocation process, since no information on the quantities and destinies of the TRQs is provided. Another problem reported is that TRQs allocated to some commodities are too small to be commercially viable. A potential importer holding a quota for a few thousand metric tons of grains has to pool the quota with other shipments in order to

fill a large grain cargo ship (which generally holds between 10,000 and 55,000 mt). Such practice adds transaction costs and could be further complicated if the Government imposes restrictions on pooling."

Obviously, Chinese TRQs are more binding on imports than they are meant to be.

Table 2. China's tariff rate quota commitments for agricultural products

Agricultural product	Initial quota quantity (million mt)	Final quota quantity (million mt)	Date reaching quantity	In-quota tariff (%)	Out-of-quota tariff (%)	Schedule for increasing TRQ quantity (million mt)
Wheat (6 products)	7.884	9.636	2004	1-10 (depending on product)	74 (accession); 65 (final)	2002:8.468 2003:9.052 2004:9.636
Corn (5 products)	5.175	7.2	2004	1-10 (depending on product)	64 (accession); 51 (final)	2002:5.85 2003:6.525 2004:7.2
Rice-short and medium grain (7 products)	1.6625	2.66	2004	1-9 (depending on product)	57 (accession); 46 (final)	2002:1.995 2003:2.3275 2004:2.66
Rice, long grain (7 products)	1.6625	2.66	2004	1-9 (depending on product)	57 (accession); 46 (final)	2002:1.995 2003:2.3275 2004:2.66
Soybean oil (2 products)	2.118	3.5871	2005	9	63.3 (accession); 9 (final by 2006)	2002:2.518 2003:2.818 2004:3.118 2005:3.5871
Palm oil (2 products)	2.1	3.168	2005	9	63.3 (accession); 9 (final by 2006)	2002:2.4 2003:2.6 2004:2.7 2005:3.168
Rapeseed oil (2 products)	0.7392	1.243	2005	9	63.3 (accession); 9 (final by 2006)	2002:0.8789 2003:1.0186 2004:1.1266 2005:1.243
Sugar (6 products)	1.68	1.945	2004	20 (initial);	68.6 (accession); 15 (final) 50 (final)	2002:1.764 2003:1.852 2004:1.945

Table 2 *(continued)*

Agricultural product	Initial quota quantity (million mt)	Final quota quantity (million mt)	Date reaching quantity	In-quota tariff (%)	Out-of-quota tariff (%)	Schedule for increasing TRQ quantity (million mt)
Wool (6 products)	0.25325	0.287	2004	1	38 (accession); 38 (final)	2002:0.2645 2003:0.27575 2004:0.287
Cotton (2 products)	0.78075	0.894	2004	1	61.6 (accession); 40 (final)	2002:0.8185 2003:0.85625 2004:0.894

Source: United States General Accounting Office, "Report to Congressional Committees: Analysis of China's commitments to other members," GAO-03-04, October 2002, in Jales and others (2006), p. 8.

Note: Elimination of TRQs on soybean oil, palm oil and rapeseed oil were planned for 1 January 2006.

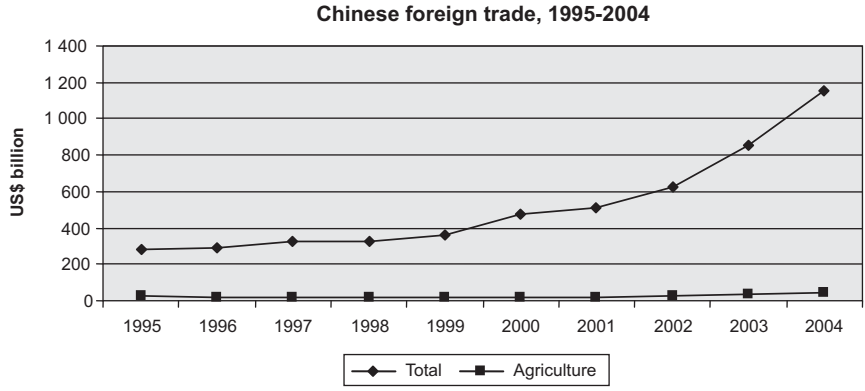
Thanks in part to its protectionist grain trade policy, different patterns exist in Chinese foreign trade in agriculture and manufacturing. Figure III shows that while overall Chinese foreign trade is growing at an exponential rate, the country's agricultural trade remains flat. Although the share of agriculture in global commerce declined during the past decade, in 2003 it still accounted for as much as 9 per cent of total world trade and 11 per cent of total trade by developing countries. In comparison, the share of agriculture in Chinese foreign trade was below 4 per cent for the same year. Even more striking is the fact that today the share of agriculture has fallen to one-thirtieth of global GDP and to 1.8 per cent of developed countries' GDP. However, as recently as 2002, in China the share was as high as 14.5 per cent. In terms of the share of agriculture in total employment, the comparison is even sharper – 43.4 per cent in China compared with less than 2 per cent in developed countries.[5]

Earlier, a widely circulated graph indicated a significant expansion of Chinese agricultural trade along the lines of its comparative advantage (e.g., Rosen and others, [2004], figure 3.1, page 38). However, in contrast to that graph, when trade data are carefully grouped into various agricultural products (figure IV), they show that Chinese agricultural trade patterns changed very little in the past 10 years as far as trade balance was concerned. The exception is a sharp rise in soya and cotton imports in recent years,[6]

[5] Agricultural products for China are defined in the Annex to the Uruguay Round Agreement on Agriculture. Except for China, all numbers in this paragraph come from Kym Anderson and Will Martin (2005).

[6] A graph of this type first appeared in C.A. Carter and X. Li (2002), using inflation-adjusted data for 1980-1997.

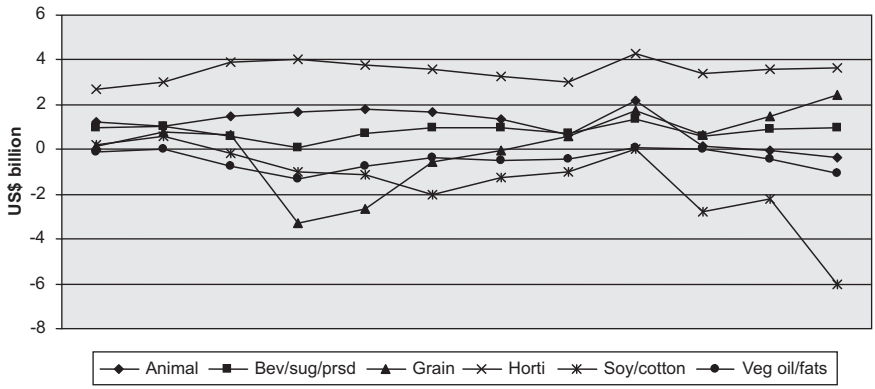
Figure III. Agriculture in total trade



Sources: China Customs statistics (various years) and calculations by the author.

which is discussed in the following section. Histogram analysis over a span of 18 years (1980-1997) finds stronger evidence of persistent trade patterns in agriculture than in manufacture and primary products (Carter and Li, 2002). Of course, in addition to a protectionist grain trade policy in China, barriers to Chinese horticultural exports – which are often disguised protectionism in the form of sanitary and phytosanitary (SPS) and technical barriers to trade (TBT) measures – also contribute to the slow improvement in Chinese agricultural trade patterns along the lines of its comparative advantage. This occurs despite the fact that, through intra- and intersectoral adjustment, there has been much domestic market liberalization in the Chinese agricultural sector.

Figure IV. Chinese agricultural trade balance, 1992-2003



Sources: China Customs statistics (various years) and calculations by the author.

As part of its WTO accession commitment, China was opening up its grain trade through the lowering of tariffs and the expansion of TRQs up until 2006. However, in the initial years following accession, bad weather in North America reduced grain exports to China; at the same time, China began releasing the grain reserve that had been built up during the late 1990s into the domestic and even international markets. That helped to ease the pressure of grain imports. As a result, a surge in grain imports was not seen until 2005, when import pressure began to be felt.

A poor transportation infrastructure has often been cited as a reason for the lack of an integrated domestic agricultural market. Cotton producers in north-western Xingjian autonomous region faced difficulties in shipping their produce to the textile and clothing factories in the eastern region, and the transportation subsidies they received became a controversial issue in the WTO agriculture negotiations. Similarly, soybeans produced in China's north-eastern provinces have a hard time reaching the coastal oil crushing facilities. The weak transport infrastructure also serves as a natural barrier to the expansion of Chinese agricultural trade, as do the grain reserve system and the low degree of commercialization in Chinese agriculture.

C. Political economy of Chinese agricultural trade policy

Differing patterns of agricultural protection in rich and poor countries can be explained based on economics as well as the unique political system of each country. Rich countries, such as the United States and Japan, as well as the European Union have a small number of farmers compared with the total population, and it is easier for them to form a united front to lobby for agricultural protection. Fluctuations in agricultural harvests due to weather dependence, food shortages or famine in recent history, and the not-so-justifiable "multi-functionality" argument[7] all help to attract public sympathy for farmers and the imposition of protectionist agricultural policies and support programmes in those countries. Total expenditure on agricultural subsidies may not be small, but it is much more affordable for rich countries, given the relatively small share of agriculture in the economy and the number of farmers in the total population. Although taxpayers and consumers have to foot the bill, they are generally tolerant of the small per capita burden imposed on them (Anderson, 1995). Political systems also play a role. For example, under the electoral system in the United States, farmers are over-represented in Congress, which helps to perpetuate the government farm support programmes.

The opposite is true in the case of China. The large peasant population makes it virtually impossible to overcome the "free rider" problem in forming a farm lobby and it is financially infeasible to subsidize agriculture, which currently accounts for more than 40 per cent of total employment in China. Economics aside, China's official ideology traditionally favours proletariat workers in SOEs over peasants simply because the latter

[7] In "Agriculture's 'multifunctionality' and the WTO," Anderson (2000) refutes the claim that agriculture deserves greater price support and import protection than other sectors because of the non-marketed externalities and public goods it produces jointly with marketable food and fibre.

as private citizens own property or a means of production. Furthermore, China does not have a law that legitimizes a nationwide independent trade union, and any trade associations have to be affiliated with a government agency. A farmers' union or association is no exception. As a result, Chinese peasants have very limited influence on agricultural trade policy-making. Unlike agricultural protection in the United States, which has become deeply embedded in the economic and political establishments, Chinese emphasis on "grain self-sufficiency", the cornerstone of its agricultural policy, has much weaker institutional underpinnings and is susceptible to the influence of many interest groups.

However, the official attitude towards private ownership is changing, and to own a property is less politically incorrect than before. The most significant change in official ideology towards private ownership is the "Three Represents Theory", the masterpiece of former Communist Party Secretary-General Jiang Zemin under which successful private businessmen are welcome to join the ruling party and business interests are given a bigger say in policy-making.

The grain self-sufficiency policy was the product of the Cold War era, which was punctuated by embargoes on, and famines in China. However, China now as a completely new international environment and the grain self-sufficiency doctrine is facing challenges both from within and outside China. The Chinese policy community is debating whether it is justifiable to pursue this costly doctrine. However, because the embargo and famine scene is still all too near in memory, it takes time for the leadership to change their perception of the evolving grain security issue.

Domestic liberalization has left the market as the sole regulator of grain production. However, WTO accession commitments have opened the door (up to TRQ limits) for imports, making it difficult to maintain sufficiently high domestic grain prices. Boosting grain production through farm subsidies, although allowed under China's accession protocol, is not a financially viable option given its sheer size and the large number of farmers engaging in grain production. Water shortages in China's grain belt and the excessive use of farm chemicals are also raising environmental concerns over grain production (Murphy, 2004).

Chinese peasants are in no position to influence agricultural policy-making in the same way that their United States and European Union counterparts are able to do. Nevertheless, the urban-rural divide and the plight of the Chinese peasants do pose a threat to social stability, which is the overwhelming concern of the leadership. In addition, the need to create a rural market for the demand-driven economic growth has resulted in the Chinese leadership taking rural development seriously in an unprecedented manner by including the NRD programme in the eleventh Five-Year Plan.

The NRD programme will certainly inject more investment into rural areas and the agricultural sector, but its impact on grain production would be ambiguous. First, the NRD programme may have positive effects on grain production by helping improve the rural infrastructure, but funds available to the ambitious programme will be limited. The politically powerful SOEs still receive huge amount of subsidies through easy loans and from the

state budget, leaving the Government with little room for financial maneuvering. Foreign direct investment has played a vital role in Chinese urban and industrial development; however, as a commercial operation, little has been earmarked for the rural areas. Second, the NRD programme comprises a long list of projects (for example, rural infrastructure, and health-care and education projects) that will compete for funds with the shoestring operation of grain production subsidies. Finally, with better infrastructure, education and health-care services, factor mobility will be improved, which will accelerate the process of factor (and product) market integration and production adjustment away from grain production (Zhong and others, 2006). Therefore, the net effects of NRD on grain production would be undetermined.

To raise the income of farmers is a key goal of the NRD programme. Given the limited resources, one feasible approach is to correct the remaining distortions within agriculture. This includes providing equal opportunities in accessing credit, inputs, research, and development funds and logistic support etc. for all agricultural production, in addition to price liberalization. Resources devoted to the grain support programme should be redirected to more productive or profitable use in agriculture. This would certainly boost horticultural and other types of labour-intensive production, and it would draw resources from the grain sector as the correction progresses. Since Chinese agricultural liberalization has proceeded in this direction for almost 30 years, this intra-agricultural correction alone may not suffice to raise the income of farmers significantly. From a global point of view, Chinese farmers could benefit enormously from the expansion of labour-intensive production, most notably horticulture wherein its comparative advantage lies. However, the comparative advantage of Chinese agriculture cannot be exploited to its fullest potential unless land and other resources, which are limited, are released from the grain sector. This is possible only if the grain trade is liberalized.[8]

The rising living standards of the Chinese population (particularly city dwellers) require the availability of more processed, convenient and better-packaged quality food rather than raw farm products. In response, food processing industries and agribusinesses are flourishing. At the same time, global trade liberalization in manufactures creates plenty of room for the expansion of the Chinese textile and clothing sector, which uses cotton as the major input. In some cases, however, their interests may not be consistent with those of domestic producers of primary agricultural inputs.

Soya was once among the strategic commodities whose self-sufficiency was encouraged. The Chinese Ministry of Science and Technology also made huge investments in research and development of genetic modification technology to boost soya production. To meet the rising domestic demand for quality cooking oil, many crushing facilities had been established in the coastal region of China by the late 1990s. Unable to access domestic soya supplies, most of which was produced in north-eastern China, the

[8] An increase in horticultural production may result in a domestic price decline or terms of trade deterioration. This problem could be solved by upgrading the products for high-end domestic or international markets. However, this requires other inputs in addition to unskilled labour.

crushing industry successfully lobbied the Government in 2001 for opening up to soya imports despite opposition from domestic stakeholders. A similar idea is being floating for opening up to imports of corn feed in order to meet the demand in the livestock raising, dairy and meat industries.

Cotton is another strategic commodity. Chinese negotiators worked very hard to secure a quota limit in the accession negotiations in order to protect the cotton sector. However, China's textile and clothing industry was under expansion in anticipation of the expiry of the Multi-Fibre Arrangement by 2004 and was in need of cheap cotton, a key input for the industry. As a result, the National Development and Reform Commission allowed cotton imports that were well above the quota limit at the in-quota tariff rate, starting in 2003.

WTO negotiations are cross-sectoral in nature and agricultural trade agreements are often linked with the negotiation outcomes in other areas. When presented with a possible trade deal, the top leadership will weigh the agricultural interests against other more powerful constituencies (for example, those of the telecom, banking and insurance sectors) if a trade-off has to be made.

Pressure to liberalize the grain trade can also be felt from outside China. The Uruguay Round Agreement on Agriculture has a built-in agenda for trade talks on the three pillars of agricultural support, i.e., market access, domestic support and export assistance. At the Hong Kong Ministerial Conference in 2005, significant progress in modality talks on the last two issues was achieved and negotiations on market access are ongoing. Among the three pillars, China has no export assistance and almost zero, if not negative,[9] domestic support. Market access is the only defence interest for China in the negotiations. Among the five interested parties that lead the agriculture negotiations, the United States, Brazil and Australia all have an ambitious market access agenda, and the United States and Australia are the top source countries of Chinese grain imports. In the ongoing China-Australia FTA talks, Australia is insisting on a comprehensive FTA, i.e., free trade for all commodities with no exceptions for wheat, barley and other grain products. Pressure to import more rice from ASEAN exists, although China has successfully had rice excluded from the China-ASEAN FTA.

D. China in the WTO and FTA negotiations

Having brought Chinese agricultural trade policy into perspective, this discourse now turns to Chinese foreign trade relations, with particular focus on agriculture, followed by a discussion of the Chinese positions in WTO agriculture negotiations and China's FTA talks with ASEAN and Australia.

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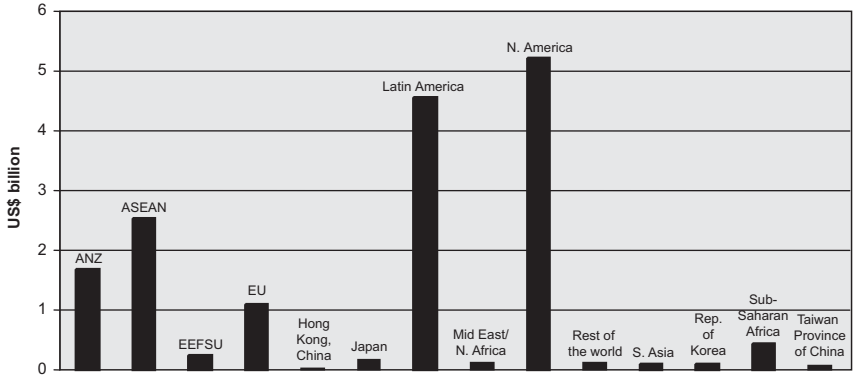
[9] Because of various fees and taxes imposed on farmers, Chinese agriculture in fact was receiving negative overall support for years until recently, according to Sun Dongsheng in his presentation at the conference on "Globalization, Market Integration, Agricultural Support Policy and Smallholders," Nanjing, China, 8-9 November 2004.

1. Agriculture in Chinese foreign trade relations

Chinese agricultural trade relations can be well understood from the viewpoints of labour/land endowment, climate, geography and cultural proximity with its neighbours. Figure V shows the distribution of Chinese agricultural imports by region. North America has traditionally been the most important source of Chinese agricultural imports, followed in 2003 by Latin America, ASEAN, Australia and New Zealand, the European Union and sub-Saharan Africa. There has been a sharp rise in imports from Latin America since 2000, largely because China opened up its soya imports in 2001, and because Brazil and Argentina have been major soya exporters to China. This policy alone has boosted Latin America to the rank of second-largest source of Chinese agricultural imports, closely following first-ranked North America.

Figure V. Chinese agricultural imports by region, 2003



Sources: China Customs statistics, calculations by the author and data as shown in the table 3.

On the export side, Japan was the top destination, followed by ASEAN, Hong Kong, China, the Republic of Korea, the European Union and North America in 2003 (figure VI). In the case of Hong Kong, China, it is important to remember that it is a major gateway for Chinese exports to the world; goods recorded as exports to Hong Kong, China may actually be destined for a third country. Since 1993, Chinese Customs has been trying to identify the final destinations of Chinese exports. However, the effort cannot be exhaustive because Chinese exporters and even the Hong Kong, China traders who run the re-export business do not really know the final destination when the goods clear the Chinese Customs as exports and the Hong Kong, China Customs as imports. It is only when goods are further processed and sorted in Hong Kong, China that the traders know exactly to where the goods will eventually be shipped. That is why Hong Kong, China import data do not include information on final destinations. This information can only be obtained from re-export data (Feenstra and others, 1998). It is clear that ASEAN occupies a solid second place among China's agricultural export destinations.

Table 3. Chinese agricultural imports and exports by region, 2003

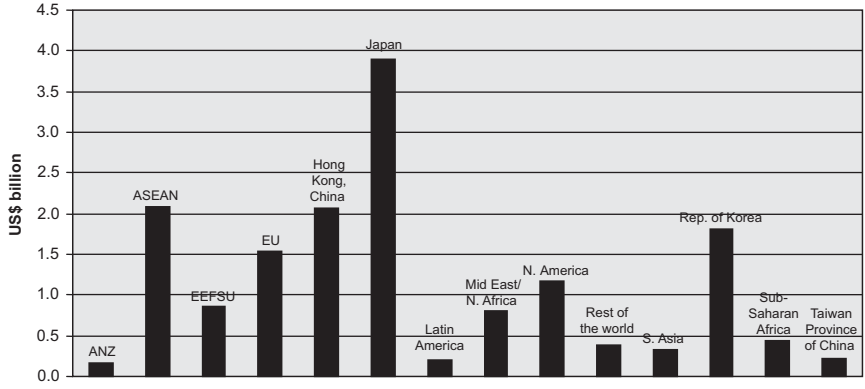
(Unit: US$ million)

Origin/destination	Imports	Exports
Australia and New Zealand	1 687	163
ASEAN	2 530	2 089
Eastern Europe and former Soviet Union	233	852
European Union	1 097	1 543
Hong Kong, China	28	2 063
Japan	167	3 889
Latin America	4 554	209
Middle East and North Africa	110	808
North America	5 229	1 176
Rest of the world	115	383
South Asia	98	324
Republic of Korea	103	1 811
Sub-Saharan Africa	428	438
Taiwan Province of China	83	224

Sources: China Customs statistics and calculations by the author.

When comparing figures V and VI, it can be seen that they are in sharp contrast and that, with the exception of ASEAN, China has a trade imbalance with all other major agricultural trading partners. Imports are mainly from North America and Latin America while exports are mainly to neighbouring Asian countries.

Figure VI. Chinese agricultural exports by region, 2003



Sources: China Customs statistics, author's calculations and data given in the annex to this chapter.

Chinese agricultural trade relations shown in figures V and VI can be easily understood in terms of resource endowments in China and those other countries. China has abundant labour but is land-scarce relative to North America and Latin America. This explains the level of Chinese imports of wheat, barley, maize, soya and cotton from those regions. If a comparison is made between labour/land resources and capital, China certainly has comparative advantages in agriculture. It is for that reason that China exports mainly agricultural products (as well as labour-intensive manufactured goods) to Japan, Hong Kong, China and the Republic of Korea while importing capital- and technology-intensive industrial goods from those countries.

ASEAN is the only region that has a balanced agricultural trade with China. These two regions do not differ distinctly in relative factor endowments. Rather, climate makes a difference in determining bilateral agricultural trade patterns. China exports temperate horticultural products and grains (except rice), soya and cotton to ASEAN, and imports mostly tropical products and rice from ASEAN.

Geographical proximity makes it easier for China to export perishable horticultural products to its neighbours. Historically, those countries have been influenced by Chinese culture and some even have large ethnic Chinese populations. Chinese-made agricultural products are particularly in demand in those regions. Finally, stringent SPS rules in the European Union and the United States result in China looking to its neighbouring developing countries for export markets. The success of Chinese horticultural exports to Japan is largely due to Japanese investment in China in horticultural production and processing, which helps in improving the quality of Chinese exports to Japan and in meeting stringent Japanese SPS requirements (Wu Huang, 2002).

2. China in WTO agricultural negotiations

Since China began participating in the WTO agriculture negotiations, much of the attention in the international trade policy area has been on the role the Chinese will play in those negotiations. Interest in China intensified after the country joined the G20 at the Cancun WTO Ministerial Meeting in September 2003. So far, China has given the impression that it is a low-key player and lacks a clear position. This subsection attempts to explain why China chose to maintain a low profile, compared to Brazil, the leader of the G20 and one of the "Five Interested Parties" dominating the agriculture negotiations.[10]

China is a net importer of cotton and soya, and a potential net importer of grain. These products are subsidized in the United States, which is the major destination for Chinese exports. Subsidized exports benefit China as a whole and are very much welcomed by China's textile, clothing and oil-crushing industries. However, they run contrary to the grain self-sufficiency policy of China, which has been the primary reason for Chinese opposition to agricultural subsidies in developed countries. China's ambiguity in agriculture

[10] For a comparative study of the Brazilian and Chinese agriculture sectors, see Jales and others (2006).

negotiations reflects this dilemma; this raises the question as to whether China, as a net grain importer, will stay in the G20. This question is considered at the end of this subsection.

As for market access, which is one of the three pillars in agriculture negotiations, the grain sector has most of China's defence interest, which is limited but sensitive. China's offence interest includes tariff cuts in overseas markets for its horticultural exports. Although there is room for further tariff reductions in export markets, barriers of the first order to Chinese horticultural exports are not tariffs, but disguised protectionism in the forms of SPS and TBT, which are not on the negotiation agenda of the Doha Round. As a result, there is no strong incentive for China to push for liberalization in market access. Of course, as a new member, weak negotiating capacity is also a reason why China is not pushing as hard as Brazil for agricultural trade reform.

In contrast, Brazil is a net exporter of many agricultural products and is in direct competition with exporters in the United States and the European Union. Subsidies in developed countries hurt the Brazilian soya, cotton, sugar and beef industries. Furthermore, the European Union, which zealously guards its domestic market through various border measures, is the top destination for Brazilian agricultural exports. As such, Brazil has every reason to push very hard for liberalization in all three pillars of agriculture negotiations, which will unambiguously benefit Brazilian agriculture as well as its national economy.

Will China stay in the G20? While it would be possible in theory to have all Chinese sectors benefit from foreign-subsidized grain imports through a carefully defined taxation and transfer payment scheme, it would be politically infeasible for the Ministry of Agriculture (which is in charge of agriculture negotiations) to give concessions to foreign countries and seek concessions from other Chinese ministries. After all, negotiations at home are the most difficult part of the overall trade negotiations, a sentiment shared by many negotiators. For this reason, the author believes that China will choose to stay in the G20.

3. China in FTA negotiations

Immediately after China became a WTO member in 2001, the Government of Hong Kong, China proposed the establishment of a Closer Economic Partnership Arrangement with China. Shortly afterwards, the Government of Macao, China made a similar proposal. The two Closer Economic Partnership Arrangements were the first bilateral FTAs for China. Since then, China has successfully negotiated three more BTAs, two of which are in force, and it is currently considering a number of other BTAs.[11]

The idea for a China-Japan-Republic of Korea FTA has long been entertained among scholars but has never entered the negotiation phase. Political tension between China and Japan is an often-cited reason as to why no progress has been made so far.

[11] The China – Pakistan FTA is pending country ratification, while BTAs with Chile and Niger are in implementation. China also negotiated accession to APTA and concluded an FTA with ASEAN. More information of these agreements can be found at the APTIAD website, www.unescap.org/tid/aptiad.

However, protectionist agricultural trade policies in the Republic of Korea and Japan are also to blame. On the other hand, some progress has been made in China's FTA talks with Australia and New Zealand, while FTAs with ASEAN and Chile are in force.

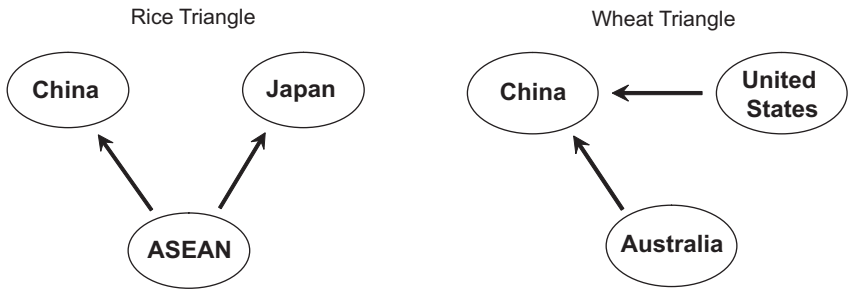
This subsection explores the relationship between FTAs and the WTO multilateral negotiations, with particular reference to the China-ASEAN and China-Australia FTAs. One frequently asked question concerning this issue is whether the former helps the latter, or whether an FTA is a building block or a stumbling block multilateral negotiations. Literature on this topic is abundant but there is no definite answer (Winters, 1996). Instead of attempting to answer such a general question, two specific questions are posed here:

(a) Will FTA-induced production adjustment in the grain sector be consistent with that potentially induced by future multilateral liberalization?

(b) Will the China-Japan rivalry in their FTA negotiations with ASEAN or a possible China-Australia FTA generate any positive dynamics for WTO agriculture negotiations?

With regard to the second question, figure VII illustrates the trade patterns of key grains among China, ASEAN, Australia, Japan and the United States.

Figure VII. Rice versus wheat triangle



(a) China-ASEAN FTA

As discussed in section D1, ASEAN is the only trading partner of China that has significant agricultural trade in both imports and exports. The China-ASEAN FTA, which entered into force on 1 July 2003, is designed to eliminate 99 per cent of tariffs and is considered as one of a few quality FTAs characterized by comprehensive market access liberalization and manageable provisions on rules of origin (Cheong, 2006). In this regard, it is only second to the Australia-New Zealand Closer Economic Relations, the only FTA in the world under which all tariffs and quantitative restrictions on trade in goods are eliminated. Indeed, unlike the many other FTAs negotiated in recent years in which agriculture has been excluded, agriculture was negotiated upfront in the China-ASEAN FTA and is the key component of its Early Harvest Programme. Most agricultural trade, except for a few

sensitive aspects such as ASEAN rice exports to China, has been granted duty-free access in China (Pasadilla, chapter III, this publication).

The answer to the first question above is “no”. With regard to ASEAN, China has a regional comparative advantage in non-rice grain, but globally it has a comparative disadvantage in the same agricultural products. Chinese exports of non-rice grains to ASEAN will expand as a result of the FTA. However, if a breakthrough is achieved in the WTO agriculture negotiations in the area of market access, China would certainly import more grain, which would depress Chinese grain production. The opposite movement of resources in the grain sector represents the elements in the China-ASEAN FTA that are not consistent with multilateral liberalization.[12]

As for the second question, the focus is on rice, which is the only crop both sensitive in the WTO talks and significant for all three parties involved. In this sense, rice is the only agricultural product that would, if liberalization is achieved in FTA talks, have a positive impact on the multilateral negotiations. As shown in figure VII, in the rice triangle, China and Japan are on the defensive while ASEAN is on the offensive.

However, in the China-ASEAN FTA deal, rice is exempt from liberalization. Thus, with this precedence on the part of China, it is not surprising to see that Japan has also excluded rice from its FTA with Thailand. For the same reason, it is very unlikely that Japan will make any concessions in rice market access in FTA negotiations with ASEAN in order to compete with China.

On the other hand, trade diversion for Japan as a result of the China-ASEAN FTA may pressure Japan to seal its FTA deal with ASEAN as soon as possible; however, there is no indication that Japan will have to resort to rice liberalization to convince ASEAN. In fact, ASEAN 6 exports twice as much to Japan as it does to China, and Japan has enough chips in its hand in the talks.

Furthermore, the swift FTA deal between China and ASEAN benefits from the fact that the two regions have quite similar economic structures. Both are emerging markets with a significant agricultural sector and a mostly labour-intensive manufacturing sector. Therefore, politically sensitive products were very few and the FTA negotiations encountered little domestic opposition. However, trade between Japan and ASEAN is more of a complementary nature; therefore, issues that are more contentious will arise in the negotiations. For example, in addition to rice, Japanese luxury cars are also a sensitive issue for Thailand, which has been excluded from the deal, as noted by Pasadilla (chapter III, this publication). Trade talks are about reciprocity. In the light of this situation, rice liberalization cannot be placed on the agenda in the Japan-ASEAN FTA talks before many other sticking points are cleared. In short, with rice as an untouchable issue, China-Japan rivalry in their FTA negotiations with ASEAN can hardly generate any positive dynamics for WTO agriculture negotiations.

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[12] A similar case for Viet Nam is provided by the World Bank (2005), in *Global Economic Prospects: Trade, Regionalism and Development*, box 6.2, p. 132.

(b) China-Australia FTA

The proposed China-Australia FTA is significant for both countries. For China, it will be the first FTA with a developed country. Since China's accession to WTO, anti-dumping investigations of Chinese products in the United States and the European Union have often been conducted with invocation of the clause concerning non-market economy status in China's accession protocol. Seeking recognition of its market economy status has been a top priority in Chinese foreign trade diplomacy, and it is part of the FTA deal with Australia. Strengthening trade relations with Australia also conforms to China's need for secured energy supplies to fuel its fast-growing economy.

To have unfettered access to the Chinese market is the primary motivation for the FTA on the part of Australia, and is of particular importance to Australian mineral, energy and agricultural exports. Talks with China have gained momentum since Australia reached an FTA agreement with the United States in February 2004, partly in response to criticism at home that an FTA with the United States would isolate Australia from the booming East Asian economies.[13]

Given the enormous economic benefits from a potential FTA (Mai and others, 2005) and the strategic importance of mutual engagement between these two large countries in the Asian-Pacific region, the FTA initiative enjoys high-level political support by the two Governments. However, negotiations have been stalled over the treatment of Australian grain exports to China; while Australia aims for a comprehensive FTA, China insists that grain should be considered a sensitive product and exempted from liberalization. Although it is beyond the scope of this chapter to speculate on the negotiation outcomes, some analysis of the grain issue in a possible comprehensive China-Australia FTA can be made here in an attempt to answer the two questions raised at the beginning of this subsection.

The answer to the first question is "yes". A comprehensive FTA with Australia will increase Chinese grain imports, as Australia has a comparative advantage in grain production in relation to China. From a global perspective, Chinese agriculture does not have a comparative advantage in grain production, and with the progress in agricultural market access negotiations at WTO, China will certainly increase grain imports. Adjustment of Chinese grain production in response to trade liberalization induced by a comprehensive China-Australia FTA will be an intermediate step towards multilateral liberalization in agriculture.

Again, as figure VII indicates, a comprehensive China-Australia FTA would give Australia a preferential margin over the United States in access to the Chinese grain market. Given its credentials as the champion of global agricultural trade reform, Australia will not stop pushing for the multilateral process at WTO. On the other hand, the United States would be disadvantaged in its grain exports to China. Formation of a United

[13] For example, Ross Garnaut, who is a prominent critic of the Australia-United States FTA and is politically allied with the opposition party, often uses the "stumbling block" concept (Bhagwati, 1993) in formulating his argument in the popular media.

States-China FTA is almost impossible in the near future, and a comprehensive China-Australia FTA will only pressure the United States to pursue agricultural reform at WTO more actively, particularly with regard to market access, which is the area most critical to the WTO agriculture negotiations.

E. Conclusion

Chinese agricultural reform has made much progress in the past but there is still a long way to go before full integration with the world trading system is achieved. Analysis of the political economy of Chinese agricultural trade policy indicates that, although a strongly held belief, the "grain security" perception is changing as a result of the evolving political and economic environments, both at home and abroad. China's unique trade patterns and its emphasis on grain self-sufficiency can explain the ambiguity of its positions in the WTO agriculture negotiations.

There is no clear indication as to whether the China-ASEAN FTA will help with the multilateral progress or not; however, the FTA deal is resulting in the movement of resources into China's grain sector (except rice), which is not the same direction that multilateral liberalization would take. However, a China-Australia FTA, if it is comprehensive, would have a different impact in terms of grain production adjustment. It would also generate pressure to speed up the WTO agriculture negotiations.

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VII. AGRICULTURAL TRADE AND GOVERNMENT INTERVENTION: A PERSPECTIVE FROM A DEVELOPING COUNTRY

By Biswajit Dhar

Introduction

Since the Uruguay Round negotiating mandate sought "greater liberalization of trade in agriculture", WTO members have been locked in an intense debate on the nature and extent of trade liberalization in agriculture. Various perspectives of agricultural trade liberalization have come to the fore in the debate. The proponents of the trade liberalization agenda have argued aggressively in favour of dismantling the tariff walls as, in their view, this would bring significant global welfare gains. However, opposing voices have emphasized the fact that significant non-trade concerns exist, which would have to be given precedence over the trade agenda. This chapter reviews traditional arguments for trade liberalization and provides a closer look at the additional reasons for use of government intervention, including trade policy, in agriculture in a developing country, with particular reference to India.

A. Rationale for liberalizing agricultural trade

The case for liberalizing agricultural trade has been built on arguments, the origins of which can be traced back to the pure theory of international trade. According to these arguments, trade liberalization provides the "optimal solution", but only under "ideal" market conditions. Some of the key assumptions that are made in this regard are that: (a) markets are assumed to be perfectly competitive; (b) producers minimize costs subject to constant returns to scale; (c) consumers maximize their utility; and (d) all markets, including that for labour, are cleared with flexible prices.

While the earlier studies enumerated the welfare implications of adoption or otherwise of free trade policies in largely conceptual terms, the more recent studies have provided precise estimates of the welfare gains that would result from the liberalization of agricultural trade. Among the more influential of these studies are those that have used general equilibrium models.

In a series of papers published during the past few years, World Bank economists have provided detailed projections by simulating the possible outcomes of the Doha Round negotiations.[1]

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[1] The most quoted of these papers are by Kym Anderson, Will Martin and Dominique van der Mensbrugghe (2005 and 2006) and Van der Mensbrugghe (2004); see reference list. See also chapters IV and V in this volume.

The first major set of results reported in the papers pertains to the effect of the ongoing trade liberalization efforts on real income up to 2015. These estimates have been made against the benchmark that assumes a complete freeing of merchandise trade over the period 2005-2010. It has been projected that real income gains by 2015 for the global economy as a whole would be US$ 287.3 billion per year (in 2001 US dollars). Of this increase, the share of developed countries would be US$ 201.6 billion while for the developing countries the gains would be US$ 85.7 billion. In other words, the share of the developing countries would be a third of the total global gains. More importantly, real income gains reported for the developing countries would be 0.8 per cent of the baseline income in 2015, which is marginally higher than the corresponding figure for the developed countries (0.6 per cent). Among the developing countries, the relatively prosperous Latin American region is expected to register real income, which would be 1 per cent of the baseline income in 2015 while for the South Asian region the corresponding figure would only be 0.4 per cent.

These broad results lend themselves to two varying interpretations. The first one, which has been provided in the papers referred to above, is that the results are significantly favourable for the developing countries since their expected real income gains are considerably larger than their existing share in global production. Thus, while the developing countries as a whole account for a quarter of the global production at present, they would be able to enjoy a third of the global gains in real income that is expected annually until 2015. An alternate view would be that the results are pointing to the increasing gulf between the relatively prosperous and poorer regions and countries.

In overall terms, it could be said that the disproportionately large gains for the developed countries that the papers under discussion have predicted would reinforce the status of the lesser players in the global economy as “developing”, even after the so-called “development round” has been implemented. What is more, the results point to increasing differentiation between the developing countries, as the more prosperous regions are slated to record relatively larger increases in real income.

The disaggregated results provided for a small set of countries broadly reinforce the above-mentioned conclusions. India is expected to register a real income gain of only US$ 3.4 billion a year, which is 0.4 per cent of the base line income in 2015. In the case of China, the corresponding figures are US$ 5.6 billion and 0.2 per cent, respectively. On the other hand, countries such as Thailand are expected to gain US$ 7.7 billion, while for Argentina the real income gain could be nearly US$ 5 billion.

Although the proponents of trade liberalization have made significant claims about the gains that would arise from dropping the tariff walls, the empirical evidence provided by the stylised models fails to provide clinching proof that the lesser players in the global economy would have much to gain from the process. An important issue that arises in this context is whether the models have made the right predictions, given that they represent a vastly simplified image of the real world. Most significantly, the theoretical basis of these models, i.e., a distortion-free perfectly competitive world, needs to be re-assessed (Dhar, 2006 and chapter V in this publication).

Indeed, through the many decades that trade theory has been developing, it has been at pains to evolve a credible conceptual framework that can capture cross-border transactions. One of the major challenges that trade theory has been confronted with is the provision of a sound basis for the "appropriate set of policy interventions that can accommodate the plethora of distortions that rule the real world. The use of trade protection measures has been an anathema for the economists credited with developing the so-called "pure theory" of trade. In fact, much of the debate on trade theory in the decades prior to the advent of strategic trade theory – which boldly announces the use of government interventions for realizing national policy objectives, given the reality of imperfectly competitive markets – has tried to provide narrowly defined exceptions for the use of interventions. The following section provides an account of how trade theory has dealt with the issue of the use of interventionist policy.

B. Trade theory and the use of interventions

The free trade world, as several generations of economists have reminded us, provides Pareto optimal outcomes. The equilibrium is reached as the marginal rate of transformation in domestic production and the marginal rate of substitution in consumption and foreign trade would be equalized. Furthermore, under assumptions of free trade, domestic prices are equalized with landed, foreign prices – and domestic prices are equated with the marginal rate of transformation in production and the marginal rate of substitution in consumption. Argued in a somewhat different framework, proponents of the free trade ideal put forth the notion that opening up of trade, from an erstwhile situation of trade restrictions, would result in global welfare maximization in the long term. The gains would accrue as trade creates conditions for securing benefits through comparative advantage (Bhagwati, 1969, p.11ff.).

The fundamental proposition that a protagonist of free trade would make is that adjustment costs do not arise in the long-term perspective. The process through which this happens was well summarized by F.W. Taussig: "The free trader argues that if the duties were given up and the protected industries pushed out of the field by foreign competitors, the workmen engaged in them would find no less well-paid employment elsewhere".[2] Gottfried Haberler (1950) formulated the same idea, but somewhat differently: "We may conclude that in the long term the working class as a whole has nothing to fear from international trade, since, in the long term, labour is the least specific of all factors. It will gain by the general increase in productivity due to the international division of labour, and is not likely to lose at all seriously by a change in the functional distribution of national income".[3]

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[2] F.W. Taussig, Principles of Economics (1939, p. 516), quoted by Stolper, Wolfgang and Paul A. Samuelson (1941).

[3] Gottfried Haberler (1950), "The Theory of International Trade", quoted by Stolper, Wolfgang and Paul A. Samuelson (1941).

Conceptualized in the terms of the two-factor framework, the meaning of the above conclusions arrived at by Taussig and Haberler is fairly obvious. Unemployment of resources would be ruled out in a free trade world, since the lowering of protection would automatically trigger an adjustment process that would result in a market clearing outcome.

These virtues of free trade notwithstanding, it was argued that use of protectionist measures could be justified under specific circumstances. In the view of Haberler (1950) and subsequently H.G. Johnson (1965), one such situation would be when there was immobility of the factors of production or factor prices suffered from rigidities.

It may be pointed out that a situation of factor immobility in relative terms, in particular involving the labour force engaged in the rural sector, is the stark reality that faces many developing countries. In those countries, although the relative importance of agriculture has declined quite significantly in recent years (as is apparent from the declining share of the sector in GDP, the share of the rural population has not declined in any meaningful manner. Table 1 captures this reality for some developing countries, including India and China.

Table 1. Changing importance of agriculture and the rural sector in selected developing countries

Year	China		India		Indonesia		Low income developing countries	
	Agriculture, value added (% of GDP)	Rural population (% of total)	Agriculture, value added (% of GDP)	Rural population (% of total)	Agriculture, value added (% of GDP)	Rural population (% of total)	Agriculture, value added (% of GDP)	Rural population (% of total)
1970	35.2	82.6	46.1	80.1	44.9	82.5	43.6	81.3
1975	32.4	82.6	41.3	78.8	30.2	80.5	39.7	79.7
1980	30.1	80.4	38.9	77.0	24.0	78.4	36.6	77.4
1985	28.4	77.0	33.7	75.7	23.2	73.6	34.3	76.1
1990	27.0	72.3	31.3	74.5	19.4	69.7	32.4	74.7
1995	19.8	68.9	28.2	73.4	17.1	64.2	29.9	73.2
2000	14.8	64.4	23.7	72.1	15.6	58.3	26.8	71.6
Change between 1970 and 2000	57.9	22.1	48.6	10.0	65.3	29.4	38.6	11.9

Source: World Development Indicators (2006).

The asymmetry between the fast decline of agriculture's share in GDP and the slow fall of the share of rural population is most significant in China and India. The situation looks particularly difficult for India, which has seen a halving of the share of agriculture in GDP over the past three decades while the share of its rural population has declined by a mere 10 per cent. It is also important to note that paid employment in

agriculture in India (about 5 per cent in 2004) falls very much behind China (60 per cent in 2003), Indonesia (44 per cent in 2005) and some other developing countries, according to International Labour Organization Online Statistics and Asian Development Bank Kew Indicators.

This situation has emerged in many developing countries because of a structural bias against agriculture in the so-called development policies that those countries have adopted over the past several decades. One of the manifestations of the bias against agriculture was reflected in the form of distortions in the labour market. Johnson (1965) offered two reasons for such a distortion that are commonly advanced in the literature on economic development, both of which pertain to distortion in the labour market. First, earnings of labour in agriculture exceed the marginal productivity of agricultural labour, so that the industrial wage must exceed the alternative opportunity cost of labour. Second, industrial wages exceed wages in agriculture by a margin greater than can be accounted for by the disutility or higher cost of urban life.

It may be argued that most distortions, including those in the labour market, in developing countries were imposed by adopting policies that provided excessive protection to the industrial sector. In many cases, agriculture was also taxed, in the sense that the imperatives such as attainment of food security and, in particular, providing the population with the basic food items at affordable prices was responsible for agricultural producers being unable to realize the efficiency prices for their products.

The policy bias against agriculture in developing countries was reflected in the tardy deployment of the relatively scarce resource, capital. India stands out as a case in point. In the early 1980s, the share of agriculture in the gross capital formation in the country was close to 20 per cent; however, by the turn of the century, this figure had declined to a mere 6 per cent, despite overall growth in investment across the whole economy. Quite clearly, therefore, agriculture in India has been affected by the domestic distortion, caused largely by the policy bias. Under such circumstances, trade theorists may require interaction in the form of tariffs or subsidies, or both.

Bhagwati and Ramaswami (1963) provided a conceptual framework for the use of tariffs and subsidies in the presence of domestic distortions. Given the objective of realizing an optimum solution that is characterized by the quality of the foreign rate of transformation (FRT), the domestic rate of transformation in production (DRT) and the domestic rate of substitution (DRS), Bhagwati and Ramaswami postulated that a policy permitting the attainment of maximum welfare involved a tax-cum-subsidy on domestic production. A tariff-alone policy would, in their view, equate DRT and FRT, but would destroy the equality between DRS and FRT. By the same token, a subsidy-alone intervention would tend to establish parity between DRT and FRT, but would destroy the equality between DRS and DRT.

If, in the earlier decades, trade theorists were discussing issues related to distortions as exceptional cases to the free trade ideal that they stood by, in recent decades the advent of strategic trade theory changed all of that. The 1970s saw the

initiation of a discourse that challenged the fundamentals of the traditionalist view of trade theory. This body of literature was based on the premise that global markets were characterized by imperfect competition. Using the conceptual bases from the theory of industrial organization, the proponents of this view argued that under imperfect competition, there was a possibility that interventionist trade policies might have beneficial "strategic" effects (Helpman and Krugman, 1989). Based on this understanding, the strategic trade theorists have analysed various situations in which government intervention can be justified.

The original idea of strategic trade theory was propounded by Brander and Spencer (1981 and 1984),[4] who showed that government intervention could raise national welfare by shifting oligopoly rents from foreign to domestic firms. They argued that the grant of export subsidies would have the effect of a deterrent on foreign exports, as a result of which profits of the home firm would rise more than the amount of subsidy. This would result in a rise in home income through increased rent capture by a domestic firm. Little or no consideration, however, was given to domestic consumers in those early models on strategic trade policy.

The large body of literature that has since emerged has provided analytical insights into the functioning of the various sectors (largely in the context of the United States' economy) in which interventions of the type that this school of trade theory has tried to conceptualize are prevalent.[5] These studies have assessed the potential gains from using strategic trade policies. They have concluded that carefully designed import tariffs or export subsidies can ensure better outcomes that free trade in certain markets, mostly in differentiated manufactured products associated with oligopolistic market structures. At the same time, however, the authors emphasized the point that their findings should in no way be interpreted as general support for pro-interventionist policies.

While it is industry that has been the focus of analytical studies using strategic trade theory, there have been some attempts to look at "strategic trade" issues in agriculture (Reimer and Stiegert, 2006). Arguably, a number of markets for agricultural products are also associated with a high concentration of "agents", indicating potential applicability of "strategic" policy interventions in the agricultural sector by developing countries. Hamilton and Stiegert (2002) and Dong, Marsh and Stiegert (2006) examined the case of the Canadian Wheat Board (CWB) in the international durum wheat market; the latter examined CWB and Australian Barley Board (ABB) in the malting barley market (Reimer and Stiegert, 2006). These studies argued that state trading enterprises (STEs) such as CWB and ABB fitted the requirements associated with strategic trade theory in at least three major ways. First, the markets for both durum wheat and malting barley are characterized by imperfect competition. While CWB was found to be controlling 40-60 per cent of the global durum wheat market, the malting barley market was effectively controlled by CWB and ABB. Second, the respective governments had made unilateral prior commitments to both CWB and ABB. Finally, STEs maintained legal and executive control over the instruments of

4 See also Paul R. Krugman (1990).

5 For a comprehensive survey, see J.A. Brander (1995).

strategic trade and the quantity traded. This, according to the studies, gave CWB and ABB an advantage over independent firms, which may also have strategic delegation issues and asymmetric information problems.

Although available studies have indicated that the use of strategic trade theory is more of an exception, the reality seems to be at considerable variance with this point of view. Over the past several decades, governments in the developed world, particularly those of the United States and the European Union, have de facto used strategic trade theory to maintain their domination over the global markets for major agricultural commodities.[6] The instrumentalities for using strategic trade theory were provided by the farm policies that the United States and the European member countries have been adopting since the 1950s without being subjected to multilateral discipline.[7] For example, the farm policy instruments are aimed at managing output in the markets that have often suffered because supplies have far exceeded what the markets can carry.

The use of policy instruments by the United States and the European Union to improve their advantage in the global agricultural markets has resulted in an interesting debate in the context of the reshaping of the global agricultural policies, in which the World Trade Organization (WTO) is currently engaged. Initiated by the developing countries, this debate makes the point that the persistence of distortions in the global agricultural markets requires "strategic" interventions on their part. These interventions combined with sound distributive policies, they argue, are necessary for safeguarding the livelihoods of the multitude of marginal farmers that dot the agricultural landscape in their countries in addition to ensuring that the food security concerns are met.

C. A case for special products as 'strategic' interventions

The debate on agricultural trade liberalization that WTO negotiations created two decades ago, has brought to the fore a range of issues that have posed serious challenges to formulating trade policies. Particularly significant in this context are the articulations made by the developing countries, which claim that development concerns stemming from the imperatives of meeting the objectives of food security and livelihoods have to form an integral part of the new trade disciplines. In other words, those countries have been emphasizing that the focus of trade policy must shift away from the realization of the free-trade ideal, as has been the case hitherto, to one that provides the space to use instruments for meeting these development concerns.

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[6] While the United States and the members of the European Union control nearly 50 per cent of wheat exports, the United States has a share in excess of 50 per cent in the exports of soybeans and maize.

[7] Although the United States has been using its farm policy to provide a strategic advantage to its farm sector since the 1930s, it received legal sanction to use the farm policy instruments after the General Agreement on Tariffs and Trade (GATT) Contracting Parties agreed to grant a waiver from the application of Articles II and XI of GATT (see GATT [1955]). In 1957, the Treaty of Rome (known more often as the Treaty establishing the European Economic Community) established the basis of the Common Agricultural Policy that has directed agricultural policy of the European Union member States.

The cornerstone of this changed focus of trade policy-making, in the author's view, should be the proposal by most of the major developing countries to adopt the twin instruments of Special Products (SPs) and the Special Safeguard Mechanism (SSM) as a way to address concerns of food security, livelihoods and rural development.[8] By suggesting the adoption of these instruments, the developing countries have emphasized that "strategic" interventions such as the use of tariff protection are essential for the realization of development objectives.

Inadequacies in understanding the concerns raised by developing countries using the traditional trade theory framework have been aptly demonstrated in a recent paper by Ivanic and Martin (2006), in which they critically commented on the proposal to introduce SPs that developing countries have made. They commented that increased protection from the use of SPs "effects poverty through three broad channels". The first is the effects of commodity prices and wages on incomes in the short term. The second is through the efficiency of resource allocation, and hence aggregate real national income, as resources are diverted away from the activities that yield the highest social returns into those that generate the highest market returns at distorted prices. The third is through changes in productivity – as resources are diverted away from export-oriented activities towards import replacement, productivity tends to fall.

With regard to the first point, it needs to be stated that while Ivanic and Martin were concerned about the detrimental effect of commodity price rises on urban consumers, most developing counties would like to use SPs to influence commodity prices and wages to benefit farm households. It may be argued that the main reason for using the instrument of SPs is to ensure reversal of the secular decline in commodity prices, and in particular prices of commodities that are critical for providing livelihood security for farm households. In past decades, low commodity prices have reduced the farmers in developing countries to a marginalized existence; this situation can become far worse if the subsidized commodities are allowed to enter developing country markets for "promoting" trade.

According to Ivanic and Martin (2006), the second adverse effect of protecting SPs would be the diversion of resources "away from the activities that yield the highest social returns into those that generate the highest market returns at distorted prices". It is argued here that the purpose of SPs is precisely to divert resources into agriculture since this would yield the highest social return in the medium to long term. As indicated above, the policy bias against agriculture had militated against the flow of resources into the sector, which supports an overwhelming majority of workforce in many developing countries, including India. This policy bias can be set right by providing adequate protection for products that are sensitive in nature by using the mechanism of SPs.

They commented that the third concern was that SPs would result in diverting resources away from "export-oriented activities towards import replacement", causing

[8] The G33 group of developing countries took the lead in proposing that SPs and SSM should be included in the new agriculture deal. Subsequently, the G20 group also lent its support to the G33 proposal.

productivity to fall. This again exposes their limited understanding of economic realities. Contrary to their understanding that SPs are to be viewed from the trade perspective, developing countries have argued that SPs would ensure the realization of food security and protection of livelihoods, which stand out among the major objectives of development policy. Those countries have frequently argued that that the twin objectives of food security and livelihoods protection should be viewed as non-trade concerns.

The issue of food security was identified as a major objective to be pursued by the global community in the Rome Declaration on World Food Security and the World Food Summit Plan of Action in 1996. The Summit emphasized that food security existed when "all people at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". The Rome Declaration took into consideration the multifaceted character of food security and emphasized that "concerted national action and effective international efforts" were needed to "supplement and reinforce national action." The Plan of Action adopted by the World Food Summit proposed that "each nation must adopt a strategy consistent with its resources and capacities to achieve its individual goals and, at the same time, cooperate regionally and internationally in order to organize collective solutions to global issues of food security." In addition to emphasizing the importance of national policies, the Rome Declaration and the Plan of Action presented an interesting perspective on the role of trade in the pursuit of food security. The participating countries expressed their commitment to "strive to ensure that food, agricultural trade and overall trade policies are conducive to fostering food security for all through a fair and market oriented world trade system." Thus, quite contrary to the view that imperatives of trade should be given primacy, as is the underlying theme of the received wisdom in trade policy-making, the World Food Summit emphasized that food security should be the primary concern of the global community.

The emphasis on ensuring food security by making all possible efforts at the national level to do so, appear justified on at least two counts. First, global trade in major commodities has not expanded during the past decade despite the enhanced focus on trade expansion, particularly since the establishment of WTO. Table 2 illustrates this fact.

Table 2. Share of global exports in production of major cereals

(Unit: Percentage)

Global exports to production	1995	1998	2000	2002	2003	2004
Rice	6	8	6	7	8	7
Wheat	23	22	24	26	25	23
Maize	17	14	15	16	15	13

Source: Food and Agriculture Organization of the United Nations, FOSTAT.

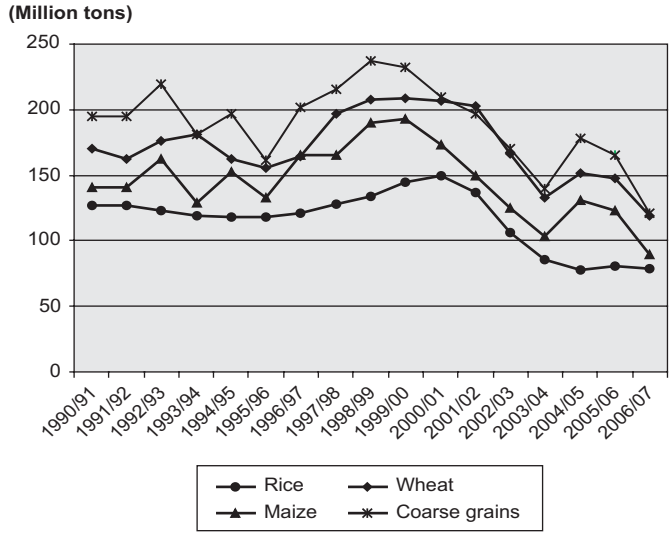
As indicated in table 2, rice has been the least traded among the major cereals, with global exports as a share of production not exceeding 10 per cent, since 1995. Even in the case of wheat, which is traded the most among the major cereals, the share of global exports has not been significantly higher than a quarter of the global production. Given such a scenario, countries would indeed be risking their futures if they decided to rely on the global market for their food supplies.

This point is further corroborated by the fact that global stocks of major cereals have been declining rather sharply since the late 1990s. The figure below captures this phenomenon.

It can be seen from the figure below that global stocks of the major cereals have experienced steep declines since the late 1990s to reach their lowest levels since 1990. The sharpest decline has been in case of maize, with global stocks having declined by nearly 54 per cent since 1999-2000.

In summary, the message for policy makers is that it is necessary to retain enough policy space for “strategic” interventions that seek to address development concerns as important as food security, and rural employment and livelihood. Such policy space may include the ability to set import tariffs on selected agricultural products, as an affordable way to counterbalance direct or indirect (and possibly “strategic”) support provided mainly by developed countries to their own agriculture sector. This is also a policy that may encourage allocation of resources to rural areas, where most of the poor in developing countries still live. The literature has often failed to distinguish between policy interventions of the kind suggested above and the use of protectionist measures for supporting the dominant interest groups. It is hoped that the discussion in this chapter will contribute to more careful and fuller consideration of the motives underlying the use of trade policy instruments in development strategies. Furthermore, the same more careful approach should be useful when entering preferential trade negotiations, even when they are expected to result only in a limited liberalization of trade.

Year-wise ending stocks of major cereals, 1990/91-2006/07



Source: United States Department of Agriculture, "Production, supply and distribution online", available at http://www.fas.usda.gov/psdonline/psdHome.aspx.

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VIII. NON-TARIFF BARRIERS IN AGRICULTURAL TRADE: PERSPECTIVES FROM BANGLADESH AND CAMBODIA

*By Uttam Kumar Deb**

Introduction

Non-tariff barriers (NTBs) are becoming increasingly important determinants of agricultural trade. NTBs generally refer to any measure other than a tariff that restricts or distorts trade. The least developed countries (LDCs) have been enjoying preferential market access to the developed country markets such as those of the European Union as well as Australia, Canada, Japan and the United States of America. It is argued that although preferential market access has reduced the tariff barriers for most of the agricultural products exported by LDCs, the prevalence of NTBs are limiting exports from the preference-receiving countries.

The economic effect of NTBs has been receiving a great deal of attention in the literature. It is observed that with the decrease in tariffs under multilateral and bilateral trade agreements, other barriers to trade have emerged. Surveys conducted across the world in a number of industries indicate that businesses feel constrained in their ability to access foreign markets by a broad set of NTBs and other obstacles (Organisation for Economic Co-operation and Development, 2003a). NTBs are in operation in many forms, such as:

(a) Quantitative restrictions (the volume or value of imports or exports is limited on a global or selected country basis);

(b) Customs procedures and administrative practices;

(c) Special charges and taxes, restrictive practices, including state trading and procurement policy; and

(d) Technical barriers to trade (stringent policy measures through sanitary regulations and quality standards, safety and industrial standards).

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Brenton (2003) showed that Bangladesh and Cambodia faced an average tariff equivalent to 5.65 per cent and 7.66 per cent, respectively, on their exports to the European Union even though they have duty-free access.

NTBs vary from country to country and product to product. It is also observed that NTBs change over time and that countries apply several types of NTBs for the same product. Therefore, a study of NTBs needs to cover a wide range of countries as well as products. However, it is not possible to study NTBs imposed by, and on all countries, or the way they are faced by different countries with limited resources and time. In that context, this chapter focuses on NTBs of some selected developed countries (European Union members, Japan and the United States) and developing countries (India and Thailand) from the perspective of LDCs (Bangladesh and Cambodia). The reason for selecting these developed countries is that they are the world's top three agricultural importing countries. In 2001, the value of agricultural imports by the European Union, United States and Japan totalled US$ 37.76 billion, US$ 22.41 billion and US$ 12.36 billion, respectively (European Commission, 2003). On the other hand, Bangladesh and Cambodia have substantial trade deals with India and Thailand. Bangladesh has preferential trading arrangements (PTAs) with India under SAPTA and the APTA, and with Thailand under the Bangladesh-Thailand BTA. Cambodia has a PTA with Thailand under the ASEAN Free Trade Area (AFTA) agreement. Therefore, India and Thailand will provide an understanding about NTBs prevailing in developing countries of Asia. On the other hand, Bangladesh and Cambodia represent the South Asian and South-East Asian situation in terms of understanding the impact of NTBs on agricultural exports from LDCs. Thus, a comprehensive understanding is provided of NTBs faced by Asian LDCs while exporting agricultural commodities to both developed and developing country markets.

The broad objective of this chapter is to analyse NTBs applied in selected developed and developing countries as well as their impacts on export of agricultural products from LDCs. The specific objectives of the study are:

(a) To identify major agricultural products exported by Bangladesh and Cambodia as well as potential agricultural export items of these countries;

(b) To analyse the trends in agricultural trade by Bangladesh and Cambodia;

(c) To identify different types of NTBs imposed by the European Union, the United States, Japan, India and Thailand on agricultural imports from Bangladesh and Cambodia;

(d) To identify the impacts of NTBs on agricultural exports by Bangladesh and Cambodia;

(e) To suggest some policy measures for Bangladesh and Cambodia to consider for their trade policies and the formulation of strategies for negotiations on agriculture at WTO.

This chapter is based on desk research of information and data available in published documents and databases. It is limited mainly to NTBs imposed by selected developed

countries (the United States, the European Union and Japan) and developing countries (India and Thailand) on agricultural imports from LDCs (Bangladesh and Cambodia).

A. Concept, types and measures of NTBs

1. Concept

NTBs or non-tariff measures (NTMs) generally refer to any measure other than a tariff that restricts or distorts trade. Baldwin (1970) defined "non-tariff distortions" as "any measure (public or private) that causes internationally traded goods and services or resources devoted to the production of these goods and services, to be allocated in such a way as to reduce potential real world income." Bora and others (2002a) used the term "non-tariff measures" to include export restraints, and production and export subsidies, or measures with a similar effect, and not just import restraints. NTBs are described in terms of their existence in the whole gamut of trade process and practices.

2. Types

A wide variety of NTBs exist that may be related to product standards, process standards, certification, registration and testing procedures, packaging, mark-up, labelling and language barriers or even as environmental barriers. The United Nations Conference on Trade and Development (UNCTAD) (1994) used a classification system of more than 100 trade measures, including a discretionary or variable component. The UNCTAD classification system grouped various tariff and non-tariff measures under several broad categories such as tariffs, para-tariffs, price control, finance measures, automatic licensing, quantity control, monopolistic measures and technical measures. However, this classification system does not include any measures applied to production or exports.

Trade policy researchers often describe NTBs under the following major categories:

(a) Quantitative restrictions and similar specific limitations. Quantitative restrictions (QRs) are implemented through various actions such as import quotas, export quotas, licensing requirement for imports and exports, voluntary export restraints, prohibitions, foreign exchange allocation restrictions, surrender requirements, import monitoring, temporary bans to balance trade, discriminatory bilateral agreements, counter trade, domestic content and mixing requirements, mandatory certification, and allocation process for quantitative restriction;

(b) Customs procedures and administrative practices. Several customs procedures and administrative practices such as customs surcharges, decreed customs valuation minimum import prices, customs classification procedures, customs clearance procedures, minimum custom value, excises, and special customs formalities such as stamping often create barriers to trade;

(c) Non-tariff charges and related policies affecting imports. Imports may also be affected by various policies and non-tariff charges such as special sales

taxes, variable levies, border tax adjustment, value added tax, anti-dumping and countervailing measures, cash margin requirements, and rules of origin;

(d) Government participation in trade, restrictive practices and more generalized policies. Governments often provide subsidies and other aids, participate in state trading, and designate goods subject to specialized management by line ministries. In addition, they formulate state procurement policy, tax exemptions for critical imports, and single or limited number of channels for imports of food and agricultural products. All these can act as non-tariff barriers;

(e) Technical barriers to trade. Governments, on various grounds, often set standards such as health and sanitary regulations and quality standards, safety and industrial standards and regulations, packaging and labeling regulations, advertising and media regulations. These technical requirements can also act as non-tariff barriers to trade.

3. Measures used for studying NTBs

A review of the existing literature on NTBs[1] provides information on measures used for studying NTBs as well as their strengths and limitations. Thirteen types of measures and approaches can be used for studying NTBs:

(a) Inventory-based approach;

(b) Frequency-type measures;

(c) Price differential approach;

(d) Quota-auction price measures;

(e) Gravity-based approach;

(f) Tariff equivalent;

(g) Trade Restrictiveness Index (TRI);

(h) Effective protection;

(i) Survey-based approach;

(j) Risk assessment-based cost-benefit measures;

(k) Stylized macroeconomic approaches;

(l) Quantification using sectoral or multi-market models; and

(m) Measure of equivalent of nominal rates of assistance.

[1] Baldwin (1970); Beghin and Bureau (2001); Bora and others (2002a); Corden (1971); Deardoff and Stern (1998); Feenstra (1988); Goldin and Knudsen (1990); Helpman and Krugman (1989); Krueger, Schiff and Valdes (1988); Laird and Yeats (1990); Organisation for Economic Co-operation and Development (1994); Vousden (1990); and Webb, Lopez and Penn (1990).

(a) Inventory-based approach

Various types of NTBs such as export duties, export restrictions, non-automatic import licensing, prohibitions and quotas are catalogued under this approach. Three sources of information can be used:

(a) Data on regulations, such as the number of regulations, which can be used to construct various statistical indicators, or proxy variables, such as the number of pages of national regulations;

(b) Data on frequency of detentions; and

(c) Data on complaints from the industry over discriminatory regulatory practices and notifications to international bodies about such practices.

Inventory-based approaches can be used from both a quantitative and a qualitative perspective to assess the importance of domestic regulations as trade barriers. Inventory-based approaches can be useful for directing attention to the frequency of occurrence and the trade or production coverage of various types of NTBs. The major limitations and weaknesses of this method are: (a) an inventory-based approach does not provide a quantification of the effect of regulations on trade per se; (b) data availability is a major problem; (c) standards vary in importance across sectors and products. Different standards would not be expected to have similar effects, and the number of standards or number of pages of domestic regulations is a poor proxy for the trade restrictiveness of the overall regulatory set.

(b) Frequency-type measures

This method is calculated based on number of HS commodity categories subject to NTBs. The number of product categories subject to NTBs is expressed as a percentage of the total number of product categories in the HS group in order to get the frequency ratio. Another frequency measure is import coverage ratio (IC). This method is useful in directing attention to the frequency of occurrence of various types of NTBs. However, this approach is unable to quantify the effect on price and quantity.

(c) Price differential approach

This approach, also known as the price wedge method, calculates the differential between the import price and the domestic price, and the domestic price of each commodity at a disaggregated level, and subtracts the tariff rate on the commodity from this differential. The result is treated as a non-tariff barrier. The main advantages of this method are that it is easy to estimate and it enables a quick understanding about the situation. However, the price-wedge method has several limitations. First, the method makes it possible to quantify the effect of a set of NTBs present on the market but seldom makes it possible to identify what those NTBs are precisely. Second, formulas that measure NTBs in an implicit way, as a percentage price wedge between imports and domestic prices, are valid only under the assumption that imported goods are perfect substitutes. The main limitation of the

method lies in its practical difficulties. For large-scale studies, available data are often too aggregated to reflect differences in the quality of imported goods.

(d) Quota-auction price measures

Quota-auction price measures have been calculated, particularly in connection with the multi-fibre arrangement (MFA). MFA can be characterized as a voluntary export restraint (VER) in which the import quotas are allocated to foreign suppliers.

(e) Gravity-based approach

The gravity-based approach includes estimating gravity equation with residual errors then considered as the effect of NTBs. It quantifies the effect of NTBs on trade flows. However, there may be factors other than NTBs responsible for residual errors.

(f) Tariff equivalent

The tariff equivalent is estimated by calculating the price wedge between the imported goods and the comparable product in the domestic market.

(g) Trade Restrictiveness Index

This approach is used to measure changes in welfare resulting from policy changes over time. It provides a single number that characterizes the overall effects of a country's trade policies that apply to a particular aggregate of goods under general equilibrium conditions. However, the data requirement of this method is huge.

(h) Effective protection

The effective protection of a product measures the extent to which the margin between the selling price and the cost of tradable inputs on the international market has widened or narrowed. This is achieved by combining the effective protection of the commodity and the protection of tradable inputs. Effective protection is measured by estimating effective protection coefficient (EPC) or effective rate of protection (ERP).

(i) Survey-based approach

This method uses a survey conducted among exporters to find the various types of NTBs faced during the export of commodities. The econometric exploitation of the US Department of Agriculture survey shows that surveys can be used as a basis for indicating NTB measures that are more refined. In the absence of information from other sources, survey-based methods are useful. With this method, it is possible to identify barriers that are difficult to measure (for example, administrative procedures). However, it is a costly approach and requires special skills in designing and administering surveys.

(j) Risk assessment-based cost-benefit measures

Risk assessment approaches appear to be far removed from the measurement of NTBs. However, these methods have been coupled with cost-benefit calculations and indirectly contribute to the measurement of the effect of regulations and, therefore, of NTBs. Rather than quantifying the actual impact of this measure on trade, they provide some indication of what should be included as trade barriers based on the effect on welfare. The main advantage of this method is in its combined use of scientific and cost-benefit assessment for identifying and assessing the effects of NTBs. The main limitation of this approach is the uncertainty that surrounds the level of risks and the economic consequences.

(k) Stylized macroeconomic approaches

The effects of NTBs are estimated by observing the displacement of the market equilibrium induced by a regulation. It helps in assessing how much trade is forgone because of regulations, how extensively consumer preferences are affected and what the effect of harmonization of regulations versus mutual recognition agreements might be for particular nations. The major disadvantage lies in the fact that the analytical framework becomes rapidly intractable unless drastic simplifying assumptions are made.

(l) Quantification using sectoral or multi-market models

This approach relies on partial equilibrium modelling. Partial equilibrium models provide a framework for analysing tariff rate equivalents of standards and technical regulations. The main feature, when compared to gravity models, is that it is possible to assess not only the impact of regulations on trade flows but also on welfare. Compared to stylized approaches that focus on qualitative effects, used in industrial economics, partial equilibrium models provide more quantitative results. It is a very useful method for estimating welfare effects of regulations such as SPS or TBT measures. The major limitation is related to the fact that quantification of trade and welfare effects of SPS and TBT regulation requires taking into account the more sophisticated mechanism related to imperfect competition or consumer information.

(m) Measure of equivalent of nominal rates of assistance

Producers' subsidy equivalent (PSE) is a concise way of measuring the transfers, as a result of government policies, to producers. It is measured by tracing direct and indirect government expenditures to producers, or by imputing the effects of policies by calculating the difference between actual domestic prices and what those prices would have been in the absence of trade interventions. One way of expressing PSE is the nominal assistance coefficient (NAC). The NAC for production is the ratio of the border price plus the unit PSE to the border price. The nominal rate of assistance is the ratio of the value of assistance to the unassisted value of production multiplied by 100. It captures both transfers from the government expenditures and transfers from price distortions. However, it does not take into account the distortions prevailing in the input markets.

A review of the literature reveals that there is no unique method for appropriately quantifying the size and impacts of NTBs. Each methodology has its own methodological limitations and advantages based on availability of information and data.

4. Major findings of studies of NTBs in agriculture

The major findings of studies dealing with NTBs are summarized in table 1.

B. Agricultural trade performance of Bangladesh and Cambodia

A major limitation in analysing the performance of agricultural trade, particularly in connection with WTO, is the definition of agriculture itself. The WTO definition of agriculture, as approved in the WTO Agreement on Agriculture (AoA), is different from the conventionally understanding of agriculture. The WTO definition of agriculture, as reported in Annex 1 of AoA, is given in table 2. Usually, all crops, livestock and primary dairy processing, and fisheries and forestry activities are included in agriculture. However, the WTO definition excludes fish and fish products and jute (among crops) but includes certain tree products such as sorbitol, manitol, essential oils, glue and other similar products. The WTO definition of agriculture also includes some industrial items such as cigarettes that are processed from agricultural products. It should be mentioned here that Annex 1 of AoA specifically mentions that the product coverage under the Agreement will not limit product coverage on the application of SPS measures.

Agricultural items, which are excluded from the WTO definition, have significant importance to Bangladesh and Cambodia. The value of total exports of fish and fish products (HS 03.03; 0306.13; 0304.90; 03.05; 0305.60) from Bangladesh in the financial year 2002/03 was US$ 330.14 million, which accounted for 5.04 per cent of the total export earnings of Bangladesh. Earnings from raw jute (HS 5303.01) exports by Bangladesh in 2002/03 amounted to US$ 82.46 million, which was 1.26 per cent of the country's total export earnings. In 2004, Cambodia earned US$ 13.14 million from exporting fish and fish products (HS 0306; 0303; 0301; 0302; 0305; 0307; and 0304), which was 0.47 per cent of its total export earnings and 40 per cent of agricultural export earnings (HS 1-24 chapters). These goods, particularly fish and fish products, face various types of NTBs in the importing country markets. Therefore, this chapter is not limited to WTO-defined agriculture. It has attempted to include fish and fish products in the analysis.

Availability of trade data series that reflect all agricultural commodities of Bangladesh and Cambodia is another limitation in such an analysis. For example, the FAO data series on agricultural trade includes primary and processed crops as well as livestock products, but excludes fish and fish products. UNCOMTRADE data do not offer a ready definition of agriculture (WTO defined or traditional). Under these circumstances, a summation is used of all export and import items included in Chapters 1-24 of the HS code system reported in UNCOMTRADE. This has surely underestimated the total agricultural export and import levels of Bangladesh and Cambodia. Readers are requested

Table 1. Major findings of the studies of non-tariff barriers in agricultural trade

Study	Country and period	Study focus and methodology	Major findings
Beghin and Bureau (2001)		The study provided a concise description and evaluation of the various methods (the price wedge method, inventory-based approaches, survey-based approaches, gravity-based approaches, risk assessment-based cost-benefit measures, stylized macroeconomic approaches and quantification using sectoral or multi-market models) available for quantifying and modelling impacts of NTBs on trade and welfare.	The study suggested that there were some cases where it was necessary to address the supply shift and demand effects of regulations together with the trade effect. In the case of technical regulations, the effect on trade can be identified with the application of combining gravity models or spatial trade models with econometric estimates. Regulations such as minimum quality standards, mandatory labelling and certification impose costs that might lead to fixed (or sunk) costs need to be estimated.
Kawai and Tanaka (1996)	Japan; 1990	The study focused on measuring the effect of the distortion including NTBs in the Japanese economy for 201 commodities. It also measured the effect of the distortion on the efficiency and income distribution in the Japanese economy. For measuring distortion, the study used the price differential approach based on data of the I-O table of Japan. A CGE model was used to estimate the impacts.	More than half of the commodities studied had higher domestic prices compared with import prices. The agriculture, forestry and fisheries sector had 17 commodities whose purchasing power parity (PPP) was greater than 1, indicating that the domestic prices were higher than international prices.

Table 1 *(continued)*

Study	Country and period	Study focus and methodology	Major findings
Yue and others (2005)	Japan; 1998-2000	This study estimated the tariff equivalent of Japanese TBT regulations and quantified the impact of removing these policies on trade flows and welfare. It investigated the United States-Japan apple trade dispute. To measure the tariff equivalent of TBT, the study used an extended price-wedge framework, which relaxes homogeneous commodity assumptions. It has also analysed the sensitivity of tariff equivalents to its determinants (substitution elasticity, preference for home goods, trade costs, and to the reference data chosen).	The study found that the tariff equivalent of TBT is very sensitive to several parameters such as the elasticity of substitution and consumers' home preference. Empirical estimates confirmed that an increase in apple imports of Japan would be very small (in value) if TBT regulations were withdrawn, no matter what parameters were used.
Deardorff and Stern (1997)		Critically analysed various existing methods for measuring the size and impacts of NTBs.	A rich array of methodologies exists for investigating NTBs. The methodologies that appear to have been the most successful have varied across industries and types of NTBs, but most have involved some sort of price comparison to infer the tariff equivalent of NTBs. The study concluded that the most useful direction for future investigation of NTBs across industries and countries would be to aim for a comprehensive set of tariff-equivalent measures of protection (nominal, not effective) derived from the most detailed industry-specific information that can be

Table 1 *(continued)*

Study	Country and period	Study focus and methodology	Major findings
			obtained as well as from various different measurement techniques appropriate to the type of NTB and its method of administration.
Messerlin (2001)	European Community; 1990, 1995 and 1999	Assessed the overall protection granted to the European output of farms and industrial goods. The agriculture sector was disaggregated into five categories: (1) cereals (rice excluded); (2) meat; (3) dairy products; (4) sugar; and (5) other agro-products. The price differential approach was applied to quantify the tariff equivalent of NTBs.	The overall rate of protection in agriculture was 38.3 per cent in 1990, 35 per cent in 1995 and 31.7 per cent in 1999. The overall rate of protection declined over time but still remains at a high level. The cost of protecting the five farm sectors is a quarter of the costs of EC protection in goods only, or almost a third of the value added for the five sectors under consideration.
Michalopoulos (1999)	Developing countries; 1989-1998	Analysed trade policies for developing countries and problems of market access for their merchandise exports. The study recommended an agenda of topics and developing country positions for the WTO negotiations. The study analysed NTBs based on frequency ratios.	Agricultural products were the most subject to overall controls, especially in the earlier period (1989-1994). The number of countries imposing the selected controls substantially declined during 1995-1998, following the Uruguay Round Agreement.
Fukao, Kataoka and Kuno (2003)	Japan; 1995	The study critically examined measurements of Japan's NTBs, based on the price differential approach. Four major commodities (beef, rice, steel and petroleum) were considered.	Huge price differentials between the domestic and import prices of beef, rice and steel can be explained by factors other than NTBs. The high price differential of petroleum is explained by NTBs.

Table 1 *(continued)*

Study	Country and period	Study focus and methodology	Major findings
Ingco and Francis Ng (1998)	108 reporting countries (developed and developing countries); 1984-1994 and 1995	The study evaluated the potential distortionary effects of state trading enterprises in agriculture and their abilities to circumvent the Uruguay Round concessions on market access. It estimated the tax equivalent of products subject to state trading enterprises and tariff equivalent of price subsidies and mark-ups, based on the difference between the world price level and the wholesale price of the good, given the import demand function.	The producer subsidy or tax equivalent in developed countries for major products (rice, wheat, coarse grains, beef and milk) has declined in the post-Uruguay Round (1995) period, compared with the pre-Uruguay Round (1984-1994). However, in many cases, the extent of remaining subsidies and distortions resulting from those subsidies in developed countries was still very large. In the case of developing countries, the subsidy or tax equivalent was found to be relatively lower.
Haveman and Thursby (2000)	Exports of 67 countries to selected developed countries (12) and developing countries (21). Exporting countries include Bangladesh but not Cambodia; 1994 and 1998	The study analysed the impact of tariff and four types of NTBs on agricultural trade. The impacts were divided into three distinct effects (reduction effect, compression effect, and diversion effect) and estimated by regression analysis based on a model developed by Haveman, Nair-Reichert, and Thursby (1999).	NTB reduction effects were found to be insignificant in around 40 per cent of the cases, while in most of the cases (60 per cent) they do not have expected sign. Slightly more of the developing country effects are of expected sign than are the developed country effects. More effects that were negative were found in 1994 than in 1998. However, the effects that are significant have large sensitivity of trade to NTBs.
Linkins and Arce (1994 and 2002)	Canada and United States. For Canada, 1980-1985 and for the United States, 1991	The study critically reviewed the methods used by the Governments of Canada and the United States to tariff equivalents of NTBs.	Estimates for both countries (United States and Canada) relied primarily on the price comparison method, especially for the agricultural sectors where good pricing

Table 1 *(continued)*

Study	Country and period	Study focus and methodology	Major findings
			data on domestic and world prices were available. It was suggested that there was an obvious need to conduct additional theoretical and empirical research to separate the effects of NTBs from factors such as imperfect substitution and market power, which might also account for distortions in the prices of United States imports.
Bora and others (2002a)	Sixty-five countries	The study estimated the likely impacts of two scenarios: (1) The elimination the elimination of all tariff and non-tariff barriers against LDCs in the European Union; and (2) the elimination of tariff and NTBs faced by LDCs in all Quad countries (United States, Canada, the European Union and Japan). A standard CGE model (available in GTAP5 version database) was used for the analysis.	For the first simulation it was found that the policy simulation generated an expected improvement in allocative efficiency, which was especially evident for LDCs. In percentage terms, the big gainers were small sub-Saharan African countries (Malawi, Tanzania and Zambia), whose gains were above one percentage point, while Bangladesh and Uganda enjoyed the smallest gains. In the second scenario, Bangladesh was found to gain the most, both in absolute (US$ 1,200 million) and percentage (3 per cent) terms.
OECD (2003b)		A review of survey-based research on NTBs.	Businesses felt that numerous non-tariff barriers had an impact on their access to foreign markets.

Table 1 ***(continued)***

Study	Country and period	Study focus and methodology	Major findings
Ando and Fujii (2002)	Thirteen APEC countries	The study estimated the tariff equivalent of NTMs, including core and non-core NTMs, using a price differential approach. An effort was made to decompose tariff equivalents of overall NTMs by type of measures (price control measures, quantity control measures, monopolistic measures and technical measures).	The study made the following important findings with regard to the agriculture and food processing sectors: Most of the APEC economies highly protect their agriculture and food processing sectors with NTMs, particularly technical measures. Developed countries are more likely to apply NTMs to agricultural products while developing countries protect the food-processing sector.

Source: Review of the studies carried out by the author.

Table 2. Product coverage in the WTO Agreement on Agriculture

(i)	HS Chapters 1 to 24 less fish and fish products, plus*		
(ii)	HS Code	2905.43	(mannitol)
	HS Code	2905.44	(sorbitol)
	HS Heading	33.01	(essential oils)
	HS Headings	35.01 to 35.05	(albuminoidal substances, modified starches, glues)
	HS Code	3809.10	(finishing agents)
	HS Code	3823.60	(sorbitol n.e.p.)
	HS Headings	41.01 to 41.03	(hides and skins)
	HS Heading	43.01	(raw fur skins)
	HS Headings	50.01 to 50.03	(raw silk and silk waste)
	HS Headings	51.01 to 51.03	(wool and animal hair)
	HS Headings	52.01 to 52.03	(raw cotton, waste and cotton carded or combed)
	HS Heading	53.01	(raw flax)
	HS Heading	53.02	(raw hemp)

Source: WTO Agreement on Agriculture.

* The product descriptions in parentheses are not necessarily exhaustive.

to keep this limitation of the present study in mind and to be aware of the definition of agriculture used here while interpreting and citing its research findings.

1. Trends in agricultural trade

The value of all agricultural exports from Bangladesh increased from US$ 215 million in 1991 to US$ 467 million in 2004 (table 3). On the other hand, the value of WTO-defined agricultural exports increased from US$ 55.2 million in 1991 to US$ 88.9 million in 2004. During that period, the total value of goods exported from Bangladesh increased from US$ 1,690 million to US$ 5,797 million. Thus, the share of WTO-defined agriculture as a percentage of total exports decreased from 3.26 per cent in 1991 to 1.53 per cent in 2004.

The value of all agricultural exports from Cambodia increased from US$ 13.4 million in 2000 to US$ 32.8 million in 2004 (table 4). On the other hand, the value of WTO-defined agricultural exports increased from US$ 7.7 million in 2000 to US$ 19.7 million in 2004. The total value of exports from Cambodia increased from US$ 1,389 million in 2000 to US$ 2,798 million in 2004. Thus, the share of WTO-defined agriculture as a percentage of the total exports has increased from 0.56 per cent in 2000 to 0.71 per cent in 2004. On the other hand, the share of all agricultural exports in total exports by Cambodia increased from 0.96 per cent in 2000 to 1.17 per cent in 2004.

Table 3. Trends in agricultural exports from Bangladesh, 1991-2004

(Unit: US$ million)

Year	Total exports	All agricultural exports (HS code Chapters 1-24)	WTO-defined agricultural exports	Percentage share of agricultural exports in total exports	
				All	WTO-defined
1991	1 690.2	215.2	55.2	12.73	3.26
1992	1 941.6	215.5	49.9	11.10	2.57
1993	2 253.1	268.7	57.5	11.93	2.55
1994	2 483.3	339.8	71.3	13.68	2.87
1995	3 407.2	358.3	46.5	10.52	1.36
1996	3 538.5	358.4	35.4	10.13	1.00
1997	4 017.5	340.0	43.2	8.46	1.08
1998	5 056.9	368.6	83.6	7.29	1.65
1999	4 936.2	337.2	28.3	6.83	0.57
2000	5 034.9	353.0	23.7	7.01	0.47
2001	5 681.8	400.9	45.5	7.06	0.80
2002	5 218.9	346.1	44.9	6.63	0.86
2003	5 809.4	362.1	39.0	6.23	0.67
2004	5 796.9	466.5	88.9	8.05	1.53

Sources: Author's calculations based on data compiled from UNCOMTRADE and Foreign Trade Statistics of Bangladesh as well as FAO and WTO; agricultural export data of Bangladesh for 1999 compiled from Foreign Trade Statistics of Bangladesh.

Table 4. Trends in agricultural exports from Cambodia, 2000-2004

(Unit: US$ million)

Year	Total exports	All agricultural exports (HS code Chapters 1-24)	WTO-defined agricultural exports	Percentage share of agricultural exports in total exports	
				All	WTO-defined
2000	1 389.3	13.4	7.7	0.96	0.56
2001	1 499.6	18.4	12.6	1.23	0.84
2002	1 922.9	15.3	11.2	0.80	0.58
2003	2 118.3	11.6	8.8	0.55	0.42
2004	2 797.7	32.8	19.7	1.17	0.71

Source: Author's calculations based on data compiled from UNCOMTRADE.

An analysis of trends in agricultural imports by Bangladesh shows that imports of all agricultural products increased from US$ 547.7 million in 1991 to US$ 1,628.4 million in 2004 (table 5). Imports of WTO-defined agricultural commodities increased from US$ 644.4 million in 1991 to US$ 2,215.7 million in 2004. The total value of imports by Bangladesh increased from US$ 3,136.7 million in 1991 to US$ 8,537.4 million in 2004. Thus, the share of WTO-defined agricultural imports in the total imports of Bangladesh increased from 20.5 per cent in 1991 to 26 per cent in 2004. On the other hand, the share of all agricultural imports in the total imports of Bangladesh increased from 17.5 per cent in 1991 to 19.1 per cent in 2004.

Table 5. Trends in agricultural imports by Bangladesh, 1991-2004

(Unit: US$ million)

Year	Total imports	Imports of all agricultural goods (HS code Chapters 1-24)	Imports of WTO-defined agricultural goods	Percentage share of agricultural imports in total imports	
				All	WTO-defined
1991	3 136.68	547.65	644.39	17.46	20.54
1992	3 467.05	637.19	735.53	18.38	21.21
1993	3 525.71	566.39	667.49	16.06	18.93
1994	n.a.	n.a.	n.a.	n.a.	n.a.
1995	5 438.41	947.22	1 058.18	17.42	19.46
1996	6 225.30	1 067.30	1 255.67	17.14	20.17
1997	6 784.46	1 156.06	1 407.15	17.04	20.74
1998	7 017.97	1 081.99	1 384.03	15.42	19.72
1999	n.a.	n.a.	n.a.	n.a.	n.a.
2000	7 572.20	1 514.12	1 842.35	20.00	24.33
2001	8 096.56	1 346.88	1 759.22	16.64	21.73
2002	8 955.09	1 280.46	1 631.51	14.30	18.22
2003	8 705.70	1 534.61	1 972.10	17.63	22.65
2004	8 537.37	1 628.36	2 215.67	19.07	25.95

Source: Author's calculations based on data compiled from UNCOMTRADE.

An analysis of trends in agricultural imports by Cambodia shows that the value of Cambodian imports of all agricultural products increased from US$ 137.2 million in 2000 to US$ 162.3 million in 2004 (table 6). The value of imports of WTO-defined agricultural commodities increased from US$ 137.5 million in 2000 to US$ 160.2 million in 2004. The total value of imports of all goods by Cambodia increased from almost US$ 1,438.7 million in 2000 to nearly US$ 2,062.9 million in 2004. Thus, the share of WTO-defined agricultural imports in the total imports by Cambodia decreased from 9.56 per cent in 2000 to 7.76 per

Table 6. Trends in agricultural imports by Cambodia, 2000-2004

(Unit: US$ million)

Year	Total imports	Imports of all agricultural goods (HS code Chapters 1-24)	Imports of WTO-defined agricultural goods	Percentage share of agricultural imports in total imports	
				All	WTO-defined
2000	1 438.66	137.18	137.50	9.54	9.56
2001	1 507.20	146.95	148.06	9.75	9.82
2002	1 667.16	149.61	151.63	8.97	9.10
2003	1 774.76	135.49	140.46	7.63	7.91
2004	2 062.85	162.25	160.17	7.87	7.76

Source: Author's calculations based on data compiled from UNCOMTRADE.

cent in 2004. On the other hand, the share of all agricultural imports in the total imports by Cambodia decreased from 9.54 per cent in 2000 to 7.87 per cent in 2004.

The composition of agricultural exports from Bangladesh and Cambodia is pertinent. An analysis of product-specific trends in exports would essentially lead to commodities for which tracking NTBs have trade implications for Bangladesh and Cambodia. Information about NTBs is obtainable at the six-digit HS level. Therefore, the identification of agricultural exportables from both Bangladesh and Cambodia has been done at the six-digit level.

Tables 7 and 8 show the top 40 agricultural export items of Bangladesh and Cambodia, which were identified by calculating average annual exports of different agricultural commodities at the six-digit HS classification level during 2002-2004. The analysis reveals that the annual average export value of agricultural products from Bangladesh during that period was US$ 392 million (table 7). Bangladesh's top export item during 2002-2004 was shrimps and prawns, frozen (HS 030613), which accounted for 77.57 per cent of all agricultural exports from Bangladesh. The second most important agricultural export item was tea, black (fermented or partly) in packages of < 3 kg (HS 090230), which accounted for 3.43 per cent of total agricultural exports from Bangladesh. Fish not elsewhere specified, frozen, whole (HS 030379) were third, accounting for 3 per cent of agricultural exports from Bangladesh. Other major agricultural export items that have more than a 1 per cent share of total agricultural exports were vegetables, fresh or chilled, not elsewhere specified (HS 070990) and cigarettes containing tobacco (HS 240220). These five products together accounted for about 88 per cent of total agricultural exports from Bangladesh.

The value of annual average agricultural exports from Cambodia during 2002-2004 was US$ 19.92 million (table 8). During 2002-2004, Cambodia's largest export item was shrimps and prawns, frozen (HS 030613) with a 19.7 per cent share of total agricultural exports. The second most important agricultural export commodity of Cambodia was

Table 7. Major agricultural exports (six-digit HS) by Bangladesh, 2002-2004

(Unit: US$ '000)

HS Code	Product	Value of average annual exports	Percentage share of product	Rank among agricultural export items
030613	Shrimps and prawns, frozen	303 734.33	77.57	1
090230	Tea, black (fermented or partly) in packages < 3 kg	13 422.84	3.43	2
030379	Fish nes, frozen, whole	11 764.10	3.00	3
070990	Vegetables, fresh or chilled nes	11 069.41	2.83	4
240220	Cigarettes containing tobacco	4 706.65	1.20	5
240120	Tobacco, unmanufactured, stemmed or stripped	3 712.53	0.95	6
030420	Fish fillets, frozen	2 819.05	0.72	7
030549	Smoked fish and fillets other than herrings or salmon	2 502.68	0.64	8
060499	Foliage, branches for bouquets etc., except fresh	2 191.71	0.56	9
070910	Globe artichokes, fresh or chilled	2 105.68	0.54	10
030269	Fish nes, fresh or chilled, whole	2 053.84	0.52	11
030329	Salmonidae, nes, frozen, whole	1 961.02	0.50	12
170111	Raw sugar, cane	1 735.57	0.44	13
030490	Fish meat and mince, except liver, roe and fillets, frozen	1 447.52	0.37	14
90240	Tea, black (fermented or partly) in packages > 3 kg	1 399.91	0.36	15
030559	Dried fish, other than cod, not smoked	1 197.51	0.31	16
030614	Crabs, frozen	1 184.38	0.30	17
030310	Salmon, Pacific, frozen, whole	1 161.30	0.30	18
240130	Tobacco refuse	1 136.58	0.29	19
030623	Shrimps and prawns, not frozen	1 024.41	0.26	20
240290	Cigars, cheroots, cigarettes, with tobacco substitute	960.00	0.25	21
030339	Flatfish except halibut, plaice or sole, frozen, whole	885.03	0.23	22
240110	Tobacco, unprocessed, not stemmed or stripped	807.87	0.21	23
030624	Crabs, not frozen	799.09	0.20	24
030551	Cod dried, whether or not salted but not smoked	728.46	0.19	25
030520	Livers and roes, dried, smoked, salted or in brine	724.16	0.18	26
210690	Food preparations nes	666.56	0.17	27
150790	Refined soya-bean oil, not chemically modified	650.50	0.17	28
050610	Ossein and bones treated with acid	625.53	0.16	29
030410	Fish fillet or meat, fresh or chilled, not liver, roe	581.98	0.15	30
030622	Lobsters (Homarus), not frozen	564.45	0.14	31
140110	Bamboo used primarily for plaiting	488.28	0.12	32
190410	Cereal foods obtained by swelling, roasting of cereal	454.52	0.12	33
030376	Eels, frozen, whole	406.39	0.10	34
070390	Leeks and other alliaceous vegetables, fresh or chilled	391.32	0.10	35

Table 7 *(continued)*

(Unit: US$ '000)

HS Code	Product	Value of average annual exports	Percentage share of product	Rank among agricultural export items
050510	Feathers and down used for stuffing	384.41	0.10	36
010600	Animals, live, except farm animals	357.73	0.09	37
200980	Single fruit, vegetable juice nes, not fermented or spirit	348.45	0.09	38
030619	Crustaceans nes, frozen	289.58	0.07	39
100630	Rice, husked (brown)	246.14	0.06	40
	Others	7 879.20	2.01	
01 to 24	All agricultural products	391 571.00	100	

Source: Author's calculations based on data compiled from UNCOMTRADE.

Table 8. Major agricultural exports (six-digit HS) by Cambodia, 2002-2004

(Unit: US$ '000)

HS Code	Product	Value of average annual exports	Percentage share of product	Rank among agricultural export items
030613	Shrimps and prawns, frozen	3 920.04	19.68	1
240220	Cigarettes containing tobacco	1 621.88	8.14	2
030110	Ornamental fish, live	1 361.05	6.83	3
100620	Rice, husked (brown)	1 292.47	6.49	4
100590	Maize except seed corn	1 212.87	6.09	5
010290	Bovine animals, live, except pure-bred breeding	1 083.29	5.44	6
100630	Rice, husked (brown)	1 050.86	5.28	7
110814	Manioc (cassava) starch	1 034.35	5.19	8
030329	Salmonidae, nes, frozen, whole	712.27	3.58	9
080130	Cashew nuts, fresh or dried	631.23	3.17	10
240120	Tobacco, unmanufactured, stemmed or stripped	545.85	2.74	11
240130	Tobacco refuse	472.97	2.37	12
070320	Garlic, fresh or chilled	329.72	1.66	13
240210	Cigars, cheroots and cigarillos, containing tobacco	281.42	1.41	14
240110	Tobacco, unmanufactured, not stemmed or stripped	255.19	1.28	15
030211	Trout, fresh or chilled, whole	204.20	1.03	16
200310	Mushrooms, prepared or preserved, not in vinegar	165.87	0.83	17
030623	Shrimps and prawns, not frozen	153.17	0.77	18
071230	Mushrooms and truffles, dried, not further prepared	135.48	0.68	19

Table 8 *(continued)*

(Unit: US$ '000)

HS Code	Product	Value of average annual exports	Percentage share of product	Rank among agricultural export items
010600	Animals, live, except farm animals	94.88	0.48	20
220300	Beer made from malt	93.58	0.47	21
020629	Bovine edible offal, frozen except livers and tongues	75.24	0.38	22
030749	Cuttlefish, squid, frozen, dried, salted or in brine	66.44	0.33	23
220820	Spirits obtained by distilling grape wine, grape marc	63.69	0.32	24
110220	Maize (corn) flour	61.66	0.31	25
100190	Wheat except durum wheat, and meslin	48.79	0.24	26
190510	Crispbread	45.89	0.23	27
100510	Maize (corn) seed	45.62	0.23	28
030510	Flours, meals and pellets of fish for human consumption	43.87	0.22	29
030622	Lobsters (Homarus), not frozen	42.68	0.21	30
040210	Milk powder < 1.5% fat	41.86	0.21	31
030269	Fish nes, fresh or chilled, whole	38.85	0.20	32
071190	Vegetables nes and mixtures provisionally preserved	37.55	0.19	33
070820	Beans, shelled or unshelled, fresh or chilled	35.46	0.18	34
030530	Fish fillets, dried, salted or in brine, not smoked	35.36	0.18	35
240310	Cigarette or pipe tobacco and tobacco substitute mixes	33.40	0.17	36
030490	Fish meat and mince, except liver, roe and fillets, frozen	31.98	0.16	37
030791	Aquatic invertebrates nes, fresh or chilled, live	28.34	0.14	38
030199	Fish live, except trout, eel or carp	27.63	0.14	39
030729	Scallops other than live, fresh or chilled	22.94	0.12	40
	Others	2 437.77	12.24	
01 to 24	All agricultural products	19 918.00	100	

Source: Author's calculations based on data compiled from UNCOMTRADE.

cigarettes containing tobacco (HS 240220), which contributed 8.1 per cent to the agricultural export earnings of Cambodia. The third most important agricultural commodity exported by Cambodia was ornamental fish, live (HS 030110), which accounted for 6.8 per cent of Cambodia's agricultural export earnings. The other main agricultural export items having a share of more than 5 per cent of total exports included rice, husked (brown) (HS100620), maize except seed corn (100590), bovine animals, live, except pure-bred breeding stock (010290), rice, husked (brown) (100630), and manioc (cassava) starch (110814). Salmonidae, not mentioned elsewhere, frozen, whole (HS 030329), and cashew nuts, fresh or dried (HS 080130) each had a share of more than 3 per cent of total exports. These top 10

agricultural exports accounted for about 70 per cent of the total agricultural export earnings of Cambodia.

The product-specific export performance of various commodities in the short and long term can be understood by analysing the rates of growth in exports of individual commodities. In this regard, the rate of growth in the value of exports and the quantity of exported commodities are essential. An analysis of annual compound rates of growth of various agricultural commodities exported by Bangladesh for two periods (1991-2003 and 2000-2003) was carried out. Estimated growth rates are shown in table 9. It is evident from the table that long-term growth (1991-2003) in the export value of fish (not elsewhere specified), frozen, whole (HS 030379) was 0.14 per cent per year while the exported quantity of the commodity experienced a decline at the rate of 1.09 per cent annually. During the same period, long-term growth in the export value of shrimps and prawns,

Table 9. Annual compound rate of growth in agricultural exports (six-digit HS) by Bangladesh, 1991-2003

(Unit: Annual growth rate in per cent)

HS Code	Product	Quantity		Value	
		1991-2003	2000-2003	1991-2003	2000-2003
010600	Animals, live, except farm animals		57.44		
030110	Ornamental fish, live		-8.46		
030192	Eels, live		133.41		
030270	Fish livers and roes, fresh or chilled		-25.69		
030379	Fish nes, frozen, whole	-1.09	-9.15	0.14	-3.17
030410	Fish fillet or meat, fresh or chilled, not liver, roe		61.56		79.15
030420	Fish fillets, frozen		130.40		
030490	Fish meat and mince, except liver, roe and fillets, frozen		173.98		
030530	Fish fillets, dried, salted or in brine, not smoked		-4.56		
030549	Smoked fish and fillets other than herrings or salmon	-2.00	-31.04	2.17	-32.17
030559	Dried fish, other than cod, not smoked	-10.72	-29.18	-9.81	-35.99
030569	Fish nes, salted or in brine, not dried or smoked		-40.64		56.51
030613	Shrimps and prawns, frozen	2.45	-4.29	5.99	-2.80
030623	Shrimps and prawns, not frozen		14.58		-36.30
030710	Oysters		8.68		22.22
050510	Feathers and down used for stuffing	2.29	14.36	7.87	21.62
050610	Ossein and bones treated with acid		-45.83		-26.67
050690	Bones and horn-cores unworked or simply worked nes				-14.96

Table 9 *(continued)*

(Unit: Annual growth rate in per cent)

HS Code	Product	Quantity		Value	
		1991-2003	2000-2003	1991-2003	2000-2003
050790	Whalebone, horns etc., unworked or simply prepared nes	1.35	-7.27	-0.49	13.34
060499	Foliage, branches for bouquets etc., except fresh		-34.02		
070190	Potatoes, fresh or chilled except seed		-0.78		-20.34
070990	Vegetables, fresh or chilled nes			6.64	149.33
071010	Potatoes, frozen, uncooked steamed or boiled		61.39		49.96
071080	Vegetables, frozen nes, uncooked steamed or boiled		-23.65		-9.80
090220	Tea, green (unfermented) in packages > 3 kg	-17.89	-89.96	-20.09	-98.34
090230	Tea, black (fermented or partly) in packages < 3 kg	-1.85	-16.97	-3.00	-3.69
100630	Rice, husked (brown)		35.76		19.17
140110	Bamboo used primarily for plaiting		9.76		11.68
140190	Vegetable materials nes, used primarily for plaiting	26.80	0.58	25.40	-7.20
151620	Vegetable fats, oils or fractions hydrogenated, esterified		-123.67		
190410	Cereal foods obtained by swelling, roasting of cereal		6.17		16.58
190490	Cereals, except maize grain, prepared nes		-14.01		-23.69
190590	Communion wafers, rice paper, bakers wares nes		-50.62		-24.94
210690	Food preparations nes	31.00	12.44	31.76	23.95
220300	Beer made from malt	21.49	-96.26	17.79	-94.21
220830	Whiskies	2.58	-102.24	-11.17	-103.50
240110	Tobacco, unmanufactured, not stemmed or stripped		31.05		104.26
240120	Tobacco, unmanufactured, stemmed or stripped	-3.68	90.36	0.02	39.30
240130	Tobacco refuse				0.41
240220	Cigarettes containing tobacco	11.38	129.60	22.17	69.14
240290	Cigars, cheroots, cigarettes, with tobacco substitute				-26.22
240399	Products of tobacco, substitute nes, extract, essences		27.64		-59.21

Source: Author's calculation based on data compiled from UNCOMTRADE.

frozen (HS 030613) was 5.99 per cent while the annual compound growth rate in export quantity of the commodity was 2.45 per cent. It may be recalled that the shares of fish not elsewhere specified, frozen, whole (HS 030379) and shrimps and prawns, frozen (HS 030613) in total agricultural exports from Bangladesh during 2002-2004 were 3 per cent and 77.57 per cent, respectively. Two commodities – vegetable materials, not elsewhere specified, used primarily for plaiting (HS 140190) and food preparations, not elsewhere specified (HS 210690) – experienced very high growth (more than 25 per cent per year) in export value and export volume during 1991-2001. Feathers and down used for stuffing (HS 050510) and cigarettes containing tobacco (HS 240220) showed positive growth both in export value and volume. On the other hand, dried fish, other than cod, not smoked (030559), tea, green (unfermented) in packages > 3 kg (HS 090220) and tea, black (fermented or partly) in packages < 3 kg (HS 090230) showed negative long-term growth, both in export value and export volume.

Short-term growth (2000-2003) in agricultural exports, both in value and volume of exports, was very high (more than 10 per cent) for commodities such as fish fillet or meat, fresh or chilled, not liver, roe (HS 030410), feathers and down used for stuffing (HS 050510), potatoes, frozen, uncooked steamed or boiled (HS 071010), rice, husked (brown) (HS 100630), food preparations not elsewhere specified (HS 210690), tobacco, unmanufactured, not stemmed or stripped (HS 240110), tobacco, unmanufactured, stemmed or stripped (HS 240120) and cigarettes containing tobacco (HS 240220). In the case of animals, live, except farm animals (HS 010600), eels, live (HS 030192), fish fillets, frozen (HS 030420), and fish meat and mince, except liver, roe and fillets, frozen (HS 030490), growth rates in quantity of exports were very high. Due to non-availability of the values for these commodities, the growth rates of export values could not be estimated.

Analysis of the export growth of various agricultural commodities from Cambodia during 2000-2004 reveals some important insights. Both the value and quantity of exports of bovine animals, live, except pure-bred breeding (HS 010290), Salmonidae, nes, frozen, whole (030329), shrimps and prawns, frozen (HS 030613), mushrooms and truffles, dried, not further prepared (HS 071230), beer made from malt (HS 220300) and tobacco, unmanufactured, stemmed or stripped (HS 240120) experienced high growth (table 10). On the other hand, both the value and volume of exports declined for ornamental fish, live (HS 030110), fish live, except trout, eels or carp (HS 030199), trout, fresh or chilled, whole (HS 030211), shrimps and prawns, not frozen (HS 030623), mussels, frozen, dried, salted or in brine (HS 030739), nuts edible, fresh or dried, not specified elsewhere (HS 080290), alcoholic liqueurs not specified elsewhere (HS 220890) and cigarettes containing tobacco (HS 240220). During the same period, lobsters (Homarus) frozen (HS 030612) and animals, live, except farm animals (HS 010600) recorded positive growth in both export value and quantity. Although the exported quantity of fish, not specified elsewhere, fresh or chilled, whole (HS 030269) increased at the rate of 3.2 per cent per annum, the value of exports declined at the rate of 5.7 per cent per annum. In the case of rice, husked (brown) (HS 100630), the export value showed high growth at the rate of 13.9 per cent per year; however, the exported quantity of rice declined at the rate of 10.6 per cent per year.

Table 10. Annual compound rate of growth in agricultural exports (six-digit HS) by Cambodia, 2000-2004

(Unit: Annual growth rate in per cent)

HS Code	Product	Value	Quantity
010290	Bovine animals, live, except pure-bred breeding	111.09	186.93
010600	Animals, live, except farm animals	13.46	4.92
030110	Ornamental fish, live	-41.07	-22.14
030199	Fish live, except trout, eel or carp	-75.25	-75.16
030211	Trout, fresh or chilled, whole	-10.60	-12.69
030269	Fish nes, fresh or chilled, whole	-5.73	3.22
030329	Salmonidae, nes, frozen, whole	47.69	39.44
030612	Lobsters (Homarus) frozen	7.20	7.61
030613	Shrimps and prawns, frozen	38.64	38.14
030623	Shrimps and prawns, not frozen	-119.20	-107.05
030739	Mussels, frozen, dried, salted or in brine	-30.60	-11.12
030760	Snails, edible (except sea snails)		40.24
071230	Mushrooms and truffles, dried, not further prepared	17.46	15.94
080290	Nuts edible, fresh or dried, nes	-95.21	-94.67
100630	Rice, husked (brown)	13.91	-10.61
220300	Beer made from malt	23.87	18.01
220890	Alcoholic liqueurs nes	-64.74	-37.28
240120	Tobacco, unmanufactured, stemmed or stripped	22.02	7.53
240220	Cigarettes containing tobacco	-18.46	-2.30

Source: Author's calculation based on data compiled from UNCOMTRADE.

Products with export potential

One way of identifying the export potential of various agricultural commodities is to calculate the comparative advantage of the product at the export parity level, which is an arduous task and often constrained by non-availability of necessary data. Another way of identifying export potential is to analyse the growth trends in exports of the commodity in recent years. In this regard, the estimated rates of growth in exports of various agricultural commodities described in tables 9 and 10 can provide some assistance. Two commodities, tobacco, unmanufactured, stemmed or stripped (HS 240120) and cigarettes containing tobacco (HS 240220), experienced high growth rates in export values and export volumes during 2000-2003. These commodities each had a share of about 1 per cent of the total agricultural exports by Bangladesh. Therefore, the high growth in the export value and volume of these commodities indicates that possibly they will become important export items of Bangladesh in the future.

Several commodities such as fish fillet or meat, fresh or chilled, not liver, roe (HS 030410), feathers and down used for stuffing (HS 050510), potatoes, frozen, uncooked steamed or boiled (HS 071010), rice, husked (brown) (HS 100630), food preparations not

elsewhere specified (HS 210690) and tobacco, unmanufactured, not stemmed or stripped (HS 240110) had relatively very low shares (less than 0.22 per cent) of the total exports by Bangladesh. However, they recorded high growth (generally more than 10 per cent per year) in export value and volume during 2000-2003. Therefore, these commodities may also play an important role in future exports of agricultural commodities from Bangladesh. It is pertinent to mention here that two recent studies (Shahabuddin and others, 2002; Shahabuddin, 2002) estimated the comparative advantage in crop production (using the domestic resource cost method on input-output prices, market distortions and production coefficients for 2000) found that Bangladesh had a comparative advantage in the production of Aman rice, jute and vegetables at export parity prices. In other words, Bangladesh could gain from increased production of these crops, provided that the surplus production could be exported to the world market.

The Cambodian situation may be understood from table 10, which shows the rate of growth in export values and volumes of agricultural exports. Two commodities, bovine animals, live, except purebred breeding (HS 010290), and shrimps and prawns, frozen (HS 030613), each recorded a share of more than 5 per cent of total agricultural exports by Cambodia as well as high growth in export values and volumes during 2000-2004. This indicates that these commodities could play an important role in the export basket of Cambodia. On the other hand, both the value and quantity of exports of Salmonidae, not specified elsewhere, frozen, whole (HS030329), mushrooms and truffles, dried, not further prepared (HS 071230), beer made from malt (HS 220300), tobacco, unmanufactured, stemmed or stripped (HS 240120), lobsters (Homarus) frozen (HS 030612), animals, live, except farm animals (HS 010600) showed high growth in export value and volume during 2000-2004. However, they held a relatively lower share than the commodities mentioned earlier. The implication of the high export growth of these products is that in the future they will play an important role in agricultural exports by Cambodia.

2. Diversity in agricultural trade

Diversity in agricultural trade is very important for sustainability of trade performance. Diversity in trade minimizes the risk of price falls as well as other negative outcomes in the market. It is also argued that in one way or another, such diversity helps to ensure better utilization of resource endowments and distribution of trade benefits to a wider group of the economically active population. Therefore, diversity in agricultural trade (exports and imports) of Bangladesh and Cambodia has been estimated. Diversity in agricultural exports is likely to indicate the implications for producers. On the other hand, diversity in imports will be helpful in understanding the situation of consumers.

In estimating diversity indices, the Hirschman-Herfindahl Index (HHI) was used. The index is traditionally used to understand the concentration of market share. If the value of the index is 1, then the market is fully concentrated, i.e., only one firm has all the shares. On the other hand, if the value of index is 0, then the market is fully dispersed, i.e., numerous firms have a share in the market.

In the present study, the concept of HHI of Concentration (HHIc) has been used to examine the relative contribution (i.e., market share) of each agricultural commodity to total agricultural exports, with the relative contributions expressed as proportions of the total agricultural exports of the country. HHIc may therefore be defined as:

$$HHIc = \sum_{i=1}^{n} (p_i)^2 \quad (1)$$

where $p_i = q_i/Q$, q_i is the value of exports from i^{th} commodity, Q is the total agricultural exports by the country, and n is the total number of agricultural products exported from the country.

The Hirschman-Herfindahl Index of Diversity (HHId) is defined as:

$$HHId = 1 - HHIc \quad (2)$$

Alternatively,

$$HHId = 1 - \sum_{i=1}^{n} (p_i)^2 \quad (3)$$

Using equation (3), trends in diversity of agricultural exports from Bangladesh and Cambodia have been estimated for 1991-2004. Estimated diversity indices are shown in table 11. Bangladesh has a low level of diversity (for example, 0.42 in 2004) in its agricultural exports, indicating that only a few agricultural commodities dominate its export basket. An analysis of trends in diversity of agricultural exports revealed a fluctuating situation (for example, 0.52 in 1991, 0.27 in 2000 and 0.42 in 2004). This indicates that Bangladesh's export basket is not stable over time. In the case of Cambodia, diversity in agricultural exports is reasonably high and stable. The value of the diversity index of agricultural exports from Cambodia during 2000-2004 was more than 0.80 while in 2004 it was 0.85. On the other hand, estimated values of diversity in agricultural imports by Bangladesh ranged between 0.80 and 0.91, indicating that Bangladesh imports a large number of agricultural products. The estimated value of the diversity index of agricultural imports by Cambodia ranges between 0.72 and 0.75, indicating that Cambodia also depends on a large number of imported agricultural commodities.

3. Agricultural products relevant to NTB analysis

The major points that emerge from the above discussion are that:

(a) Both Bangladesh and Cambodia display significant export concentration (especially Bangladesh) and will therefore be vulnerable if they face unfavourable market conditions arising from NTBs in their major markets;

(b) Agricultural exports account for a small share of total exports from Bangladesh and even more so from Cambodia; and

(c) Export performance is varied among products, with some doing better than others.

Table 11. Trends in diversity of agricultural exports and imports by Bangladesh and Cambodia, 1991-2004

Year	Hirschman-Herfindahl Index of Diversity (HHId) for agricultural exports from		Hirschman-Herfindahl Index of Diversity (HHId) for agricultural imports by	
	Bangladesh	Cambodia	Bangladesh	Cambodia
1991	0.52		0.80	
1992	0.53		0.84	
1993	0.51		0.87	
1994	0.51		n.a.	
1995	0.37		0.86	
1996	0.33		0.85	
1997	0.43		0.86	
1998	0.48		0.90	
1999	0.29		n.a.	
2000	0.27	0.87	0.88	0.72
2001	0.30	0.86	0.89	0.73
2002	0.36	0.82	0.86	0.75
2003	0.34	0.93	0.88	0.72
2004	0.42	0.85	0.91	0.73

Source: Author's estimation based on data compiled from UNCOMTRADE and foreign trade statistics of Bangladesh.

The detailed analysis carried out so far has enabled the identification of potential agricultural products for detailed tracking of NTBs (table 12). NTBs applied to these products are analysed in detail in the next section.

C. Nature and extent of NTBs imposed on exports from Bangladesh and Cambodia

An empirical analysis of NTBs applied to agricultural products needs to be carried out at two levels: (a) types of NTBs practiced; and (b) NTBs used on specific products that are of export interest of Bangladesh. Analysis of the types of NTBs in operation would be helpful to negotiations while an understanding of product specific NTBs would be useful in establishing export strategies. In addition to information about NTBs, knowledge about the practice of TRQs used by the countries under the purview of the present study would be useful. Since TRQs are expressed in terms of tariffs, TRQs are therefore tariff barriers. So, TRQs can be ignored in an analysis of NTBs such as this study. However, it is widely known that TRQs have a clear adverse effect on trade of non-beneficiaries, equivalent to a physical restriction on trade. Therefore, TRQs are noted as barriers to trade in the

Table 12. Agricultural products relevant to analysis of non-tariff barriers

HS Code	Product	Export interest
010290	Bovine animals, live, except purebred breeding	Cambodia
010600	Animals, live, except farm animals	Bangladesh, Cambodia
020629	Bovine edible offal, frozen except livers and tongues	Cambodia
030110	Ornamental fish, live	Cambodia
030199	Fish live, except trout, eels or carp	Cambodia
030211	Trout, fresh or chilled, whole	Cambodia
030269	Fish nes, fresh or chilled, whole	Bangladesh, Cambodia
030310	Salmon, Pacific, frozen, whole	Bangladesh
030329	Salmonidae, nes, frozen, whole	Bangladesh, Cambodia
030339	Flatfish except halibut, plaice or sole, frozen, whole	Bangladesh
030376	Eels, frozen, whole	Bangladesh
030379	Fish nes, frozen, whole	Bangladesh
030410	Fish fillet or meat, fresh or chilled, not liver, roe	Bangladesh
030420	Fish fillets, frozen	Bangladesh
030490	Fish meat and mince, except liver, roe and fillets, frozen	Bangladesh, Cambodia
030510	Flour, meal and pellets of fish for human consumption	Cambodia
030520	Liver and roe, dried, smoked, salted or in brine	Bangladesh
030530	Fish fillets, dried, salted or in brine, not smoked	Cambodia
030549	Smoked fish and fillets other than herrings or salmon	Bangladesh
030551	Cod dried, whether or not salted but not smoked	Bangladesh
030559	Dried fish, other than cod, not smoked	Bangladesh
030613	Shrimps and prawns, frozen	Bangladesh, Cambodia
030614	Crabs, frozen	Bangladesh
030619	Crustaceans nes, frozen	Bangladesh
030622	Lobsters (Homarus), not frozen	Bangladesh, Cambodia
030623	Shrimps and prawns, not frozen	Bangladesh, Cambodia
030624	Crabs, not frozen	Bangladesh
030729	Scallops other than live, fresh or chilled	Cambodia
030749	Cuttlefish, squid, frozen, dried, salted or in brine	Cambodia
030791	Aquatic invertebrates nes, fresh or chilled, live	Cambodia
040210	Milk powder < 1.5% fat	Cambodia
050510	Feathers and down used for stuffing	Bangladesh
050610	Ossein and bones treated with acid	Bangladesh
060499	Foliage, branches for bouquets etc., except fresh	Bangladesh
070320	Garlic, fresh or chilled	Cambodia
070390	Leeks and other alliaceous vegetables, fresh or chilled	Bangladesh
070820	Beans, shelled or unshelled, fresh or chilled	Cambodia
070910	Globe artichokes, fresh or chilled	Bangladesh
070990	Vegetables, fresh or chilled nes	Bangladesh
071190	Vegetables nes and mixtures provisionally preserved	Cambodia

Table 12 *(continued)*

HS Code	Product	Export interest
071230	Mushrooms and truffles, dried, not further prepared	Cambodia
080130	Cashew nuts, fresh or dried	Cambodia
090230	Tea, black (fermented or partly) in packages < 3 kg	Bangladesh
090240	Tea, black (fermented or partly) in packages > 3 kg	Bangladesh
100190	Wheat except durum wheat, and meslin	Cambodia
100510	Maize (corn) seed	Cambodia
100590	Maize except seed corn	Cambodia
100620	Rice, husked (brown)	Cambodia
100630	Rice, husked (brown)	Bangladesh, Cambodia
110220	Maize (corn) flour	Cambodia
110814	Manioc (cassava) starch	Cambodia
140110	Bamboo used primarily for plaiting	Bangladesh
150790	Refined soya-bean oil, not chemically modified	Bangladesh
170111	Raw sugar, cane	Bangladesh
190410	Cereal foods obtained by swelling, roasting of cereal	Bangladesh
190510	Crispbread	Cambodia
200310	Mushrooms, prepared or preserved, not in vinegar	Cambodia
200980	Single fruit, vegetable juice nes, not fermented or spirits	Bangladesh
210690	Food preparations nes	Bangladesh
220300	Beer made from malt	Cambodia
220820	Spirits obtained by distilling grape wine, grape marc	Cambodia
240110	Tobacco, unmanufactured, not stemmed or stripped	Bangladesh, Cambodia
240120	Tobacco, unmanufactured, stemmed or stripped	Bangladesh, Cambodia
240130	Tobacco refuse	Bangladesh, Cambodia
240210	Cigars, cheroots and cigarillos, containing tobacco	Cambodia
240220	Cigarettes containing tobacco	Bangladesh, Cambodia
240290	Cigars, cheroots, cigarettes, with tobacco substitute	Bangladesh
240310	Cigarette or pipe tobacco and tobacco substitute mixes	Cambodia

Source: Author's calculations.

following discussion. LDCs such as Bangladesh and Cambodia may take advantage of this information in formulating their WTO negotiation strategies.

An attempt has been made to document the various types of NTBs as well as product-specific NTBs that are in place in the European Union, India, Japan, Thailand and the United States. Research findings on various types of NTBs in the study countries are detailed in tables 13-17. Table 13 illustrates the quantitative restrictions practiced by these countries. All five countries use tariff quotas for imports of agricultural products. India also uses export quotas for certain agricultural products. Licensing is required for imports of several agricultural commodities in the European Union, the United States and Thailand. Licensing is required for exports from India of some agricultural commodities. India also maintains export restraints on a voluntary basis. A summary of customs and administrative

Table 13. Quantitative restrictions and similar specific limitations

Indicator	European Union	United States	Japan	Thailand	India
Import quotas*	The European Commission has 89 tariff quotas on agricultural products, managed by the Commission on the basis of first-come, first-served (20), historic imports (22), and mixed allocation methods (47). The average filling ratio for tariff quotas is 67% each year. Tariff quotas affect about 38% of EC agricultural production (World Bank, 2003). **Quota for fishery products**: (1) Cod and fish of the species *Boreogadus saida*, salted or in brine, but not dried or smoked (An autonomous quota opened for three years. Quota for 2001-2003: 10,000 tons at zero per cent for each year); (2) shrimps and prawns, cooked and peeled (an autonomous quota opened for three years. Quota for 2001-2003: 5,000 tons at 6% for each year); (3) tuna loins (an autonomous quota opened for three years.	Most of the highest United States tariffs are applied to agricultural products subject to tariff quotas (TQ). **Products are**: (1) Beef: fresh, chilled or frozen; (2) cream; (3) evaporated/ condensed milk; (4) non-fat dried milk; (5) dried whole milk; (6) dried cream; (7) dried whey/buttermilk; (8) butter; (9) butter oil/ substitutes; (10) dairy mixtures; (11) blue cheese; (12) Cheddar cheese; (13) American-type cheese; (14) Edam and Gouda cheese; (15) Italian type cheese; (16) Swiss/ Emmental cheese; (17) gruyere processed cheese; (18) Other cheese, NSPF; (19) low-fat cheese; (20) peanuts; (21) chocolate crumb; (22) low-fat chocolate crumb; (23) infant formula containing oligo; (24) saccharides; (25) green ripe olives; (26) place packed stuffed olives; (27) green olives, other;	Tariff quotas apply mainly to agricultural products, including dairy products, rice wheat and barley, silkworm cocoons and raw silk, starches, prepared dibble fat, corn ad groundnuts, dried vegetables; they cover some 1.6% of all tariff lines. In-quota import of rice, wheat and barley, certain milk products, and raw silk are handled mainly by state trading entities. However, certain amounts of all products except raw silk may be imported by private entities. Import quotas also apply to certain fish products.	Twenty-three agricultural products remain subject to tariff quota. The products are: (1) Longans, dried (HS 0813.40); (2) copra (1203.00.0005); (3) milk and cream, not concentrated, not containing added sugar or other matters (including flavoured milk) (0401, 2202.90); (4) milk and cream, concentrated or containing added sugar or other sweetening matter, in powder, granules or other solid forms, or a fat content, by weight, not exceeding 1.5% (0402.10.0007); (5) potatoes, fresh or chilled (0701); (6) onions, fresh, chilled, dried, whole, cut, sliced, broken or in powder, but not further prepared, mixed (0703.10.0005, 0712.20 0104, 0712.20.0200, 0712.40.0304); (7) garlic, fresh or chilled, whether or not as powder (0703.20.0007, 0712.90.0115,	Tariff quotas are maintained on several products including some edible oils (1512.11 and 1514.90), maize and milk powder.

Table 13 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
	Quota for 2001-2003: 4,000 tons at 6% for each year); (4) herring, fresh, chilled or frozen (an autonomous quota opened for three years. Quota for 2001-2003: 20,000 tons at zero per cent between 1 November and 31 December of each year); (5) herring, spiced/vinegar cured, in brine, preserved in barrels of at least 70 kg net drained weight (an autonomous quota opened for three years. Quota for 2001-2003: 5,000 tons at 6% for each year).	(28) green whole olives; (29) mandarin oranges (Satsuma); (30) peanut butter and paste; (31) ice-cream; (32) animal feed containing milk; (33) raw cane sugar; (34) other cane or beet sugars or syrups; (35) other mixtures, more than 10% sugar; (36) sweetened cocoa powder; (37) mixes and doughs; (38) mixed condiments and seasonings; (39) tobacco; (40) short staple cotton; (41) harsh or rough cotton; (42) medium staple cotton; (43) long staple cotton; (44) cotton waste; (45) cotton processed but not spun.		0712.90.0128); (8) coconut, fresh or dried, whether or not chilled or peeled including desiccated (0801.10.0106, 0801.10.0207); (9) coffee, whether or not roasted or decaffeinated; coffee husks and skins, coffee substitutes containing any portion of coffee (0901); (10) tea (0902); (11) pepper, dried, whether or not crushed or ground (0904.11.0003, 0904.12.0004); (12) maize, for feedstuff (Ex. 1005.90); (13) rice (including paddy, broken) (1006); (14) soya beans, edible and inedible, whether or not broken (1201.00.1000, 1201.00.9001); (15) onion seeds (1209.91.0106); (16) soya-bean oil and its fractions, whether or not refined, but not chemically modified (1507.10.0001, 1507.90.0006); (17) palm oil and its fractions, whether or not refined, but not chemically modified	

Table 13 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
				(1511, 1513.21.0004, 1513.29.0007); (18) coconut oil and its fractions, whether or not refined, but not chemically modified (1513.11.0008, 1513.19.0005); (19) cane or beet sugar and chemically pure sucrose in solid form (1701); (20) instant coffee and other extracts, essences and concentrates, of coffee, and preparations with a basis of these extracts, essences or concentrates or with a basis of coffee (2101.1); (21) soya-bean cake (2304.00.0008); (22) unmanufactured tobacco, tobacco leaves (2401); (23) raw silk; 5002.00.0003).	
Export quotas					Export quotas are maintained for a number of agricultural products. **Products are:** onions; whole and infant milk; pure milk; butter (unless exported as branded products in consumers packs not exceeding 5 kg); wheat and wheat products;

Table 13 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
					coarse grains; brown seaweed and agarophytes, excluding G-adulis of Tamil Nadu coast origin in processed form; sandalwood oil; and cotton yarn.
Licensing requirement for imports	Import licences are required for quota management purposes of all agricultural products (subject to tariff quotas), such as cereals and cereal products, rice, sugar, oils and fats, milk products, beef and veal, sheep and goat meat, fresh fruit and vegetables, and processed fruit and vegetables.	Import licensing on plants and animals and their products, fish and wildlife, narcotic drugs, alcohol and tobacco.		A range of products including fishmeal, gunny bags, jute and kenaf remain subject to non-automatic import licensing. Twenty-three agricultural products (mentioned above) are subject to import licensing.	
Licensing requirement for exports					Licensing is required for cattle, milk, cereals, edible oils and pulses.
Voluntary export restraints					India maintains export prohibitions on certain products, including wild animals, exotic birds, tallow, wood products, beef and sandalwood products.
Prohibitions					A number of products are subject to import prohibitions. These are: (1) tallow, fat and/or oils, rendered,

Table 13 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
					unrendered or otherwise, of any animal origin, including (i) lard stearine, oleo stearine, tallow stearine, lard oil, oleo oil and tallow oil not emulsified or mixed or prepared in any way, (ii) Neat's-foot oil and fats from bone or waste, (iii) poultry fats, rendered or solvent extracted, (iv) fats and oils of fish/marine origin, whether or not refined, excluding cod liver oil, squid oil containing Eicospentaenoic acid and De-cosahexaenoic acid, and (v) margarine, imitation lard and other prepared edible fats of animal origin; (2) animal rennet; (3) wild animals, including their parts and products and ivory; and (4) beef and products containing beef in any form.
Import monitoring					India has a list of 300 sensitive items, the import of which it monitors; these items include milk products, fruit and nuts, coffee, tea,

Table 13 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
					spices, cereals, oilseeds and edible oils.
Counter trade				Counter trade policy stipulates that all procurement contracts by government agencies and state enterprises that involve imports above Baht 300 million must have a related counter trade transaction of at least one half of the procurement value.	According to the authorities there is no law requiring Indian exporters to enter into agreements on counter trade.

Sources: WTO (2004a), *Trade Policy Review of the European Union*, Report by the Secretariat; WTO (2003a), *Trade Policy Review of the USA*, Report by the Secretariat; WTO (2004b), *Trade Policy Review of Japan*, Report by the Secretariat; WTO (2003b), *Trade Policy Review of Thailand*, Report by the Secretariat; and WTO (2002), *Trade Policy Review of India*, Report by the Secretariat.

* Although TRQs are tariff barriers, in view of the adverse effects of TRQs on the trade of non-beneficiaries they are noted here as barriers to trade, so that LDCs such as Bangladesh and Cambodia can take advantage of this information in formulating their WTO negotiation strategies.

procedures that act as NTBs in the United States, the European Union, Japan, Thailand and India is given in table 14. Table 15 provides a summary of non-tariff charges and related policies that affect imports. A comprehensive summary of measures and practices related to government participation in trade, restrictive practices and policies that are more general is given in table 16. Table 17 summarizes various technical barriers in place in the United States, the European Union, Japan, Thailand and India.

As mentioned above, NTBs on a product specific basis (six-digit HS level) for all major agricultural commodities exported by Bangladesh and Cambodia were documented. A summary of the findings given in table 18 shows that the European Union imposes import quotas on, and provides domestic support for fish products. However, as a result of the European Union EBA, Bangladesh and Cambodia do not face import quotas for their products exported to the European Union. The European Union also imposes an import licence requirement on vegetables and rice, and provides export subsidies for tobacco-related products, wheat, rice and vegetables. As explained above, fish and tobacco-related products are the most important export items of Bangladesh, whereas fish, rice and tobacco are the main export items of Cambodia. Thus, products of Bangladesh and Cambodia with greater export potential face NTBs in the European Union market.

Major NTBs imposed by the United States on agricultural products include import licensing, import quotas, export subsidies, among others. The United States requires import licences for fish, tobacco and vegetables, imposes import quotas on sugar and tobacco, and provides export subsidies for vegetables, rice, maize and wheat, implying that United States also imposes NTBs on agricultural products having export potential for Bangladesh and Cambodia. On the other hand, notable NTBs used by Japan are tariff quota, state trading and state procurement, among others. Japanese NTBs on agricultural products are imposed mainly on tobacco, raw sugar and cereal products. It thus appears that developed countries protect their agriculture with stringent NTBs, and that products with strong potential for export by Bangladesh and Cambodia are associated with NTBs.

LDCs face NTBs not only in developed country markets but also in the developing countries. Among the developing countries, Thailand and India are considered in this study. Thailand's trade barriers related to agricultural products are the imposition of tariff quotas on tobacco, raw sugar, rice and maize. Thailand also imposes an import surcharge on maize. On the other hand, major barriers imposed on agricultural products by India are import monitoring, import quotas, government procurement and state trading, among others. India monitors imports of rice, maize, tea and vegetables while it procures wheat and rice, and imposes an import quota on maize. A detailed list of product-specific NTBs (two-digit, four-digit, six-digit and seven- to nine-digit) applied by Thailand is given in table 19.

(a) Incidence of non-tariff measures

The most comprehensive collection of publicly available information on NTMs is the UNCTAD Database on Trade Control Measures, which is available in UNCTAD Trade Analysis and Information Systems (TRAINS). TRAINS reports the NTM incidence at the

Table 14. Customs procedures and administrative practices

Indicator	European Union	United States	Japan	Thailand	India
Customs classification procedures	EC customs procedures have been established in accordance with the relevant provisions of its treaty and are influenced by the customs-related arrangements of international organizations, the United Nations Economic Commission for Europe (UNECE), and World Customs Organization (WCO). Customs declarations are not required for imported goods entering certain free zones (of protocol type 1) and free warehouses.		Imports are valued based on cif value (which is taken to be the transaction value of the imports). Customs duty can be paid through a multi-payment network system introduced on 22 March 2004, which connects teller institutions (government authorities) with financial institutions.	Under new custom procedures, details on invoices and other related documents (including country of origin, quantity composition of value, and description of goods) are taken into consideration for valuation purposes. Thailand uses the cif (cost insurance and freight) prices of imports as the basis for customs valuation.	The value of imported goods is based on their transaction value, which is defined as the price actually paid, or is payable for the goods when sold for exports to India, adjusted for the value of certain costs and services including commissions and brokerage charges, container and packing costs (customs valuation). For imports, three documents are normally required: the invoice, packing list and bill of lading or airways bill. Health certificates, plant certificates and phytosanitary certificates are required for certain goods; import permits, to be obtained from the relevant Government departments, are also required for items such as plants, plant materials and livestock products.

Table 14 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
Customs surcharges				Import surcharges for maize (corn) (1005.90), fishmeal with protein content more than 60% (HS 2301.200.106), and oil cake residues from the extraction of soya-bean oil (2304.00.0008).	
Excise	Excise duties are applied at the same rates on imports and domestically produced goods. The rates are harmonized among EC member States. Nevertheless, common definitions, units of measurement and minimum rates are required on alcoholic beverages, manufactured tobacco products and mineral oils.			Excise tax on imports at the same rate as on domestic goods.	Excise duties, additional duties and special additional duties are imposed, but it is not clear that they are levied on all import items or simultaneously.

Sources: WTO (2004a), *Trade Policy Review of the European Union*, Report by the Secretariat; WTO (2003a), *Trade Policy Review of the USA*, Report by the Secretariat; WTO (2004b), *Trade Policy Review of Japan*, Report by the Secretariat; WTO (2003b), *Trade Policy Review of Thailand*, Report by the Secretariat; and WTO (2002), *Trade Policy Review of India*, Report by the Secretariat.

Table 15. Non-tariff charges and related policies affecting imports

Indicator	European Union	United States	Japan	Thailand	India
Variable levies		The Harbour Maintenance Tax (HMT), introduced in 1986, is an ad valorem levy of 0.125% collected by the CBI (Caribbean Basin Initiative) (formerly the US Customs Service) on port use.			
Value-added tax	VAT applies to imports and locally produced goods at the same rates. While the tax base is fully harmonized, the rates applied by member States are not. The European Commission legislation requires a standard VAT rate that is not less than 15%, with one or two reduced rates not less than 5%. Under specific conditions, VAT exemptions are also granted upon final importation of certain agricultural products or products intended for agricultural use.				

Table 15 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
Rules of origin	The European Commission applies both non-preferential and preferential rules of origins. In determining both non-preferential and preferential origin of products that are not wholly produced in a country, the European Commission uses the sufficient work or process test, defined through: (1) criteria based on the change of tariff headings; (2) economic criteria based on value-added; and (3) technical or industrial criteria based on processing operations. The European Commission's preferential rules of origin are more sensitive for products with higher preferential margins, such as beverages and tobacco.	For many agricultural products (e.g., eggs, meat and poultry), country of origin marking and labelling regulations are used to provide consumers with information regarding the origin of the product, and are mandatory. The United States applies preferential and non-preferential rules of origin. While the substantial transformation criterion is central to all United States rules of origin, its definition varies according to the product and the preferential arrangement. The basic non-preferential United States rules of origin state that the product is considered to have been produced in a country when (1) the goods are wholly the growth, product, or manufacture of that country, or (2) the goods have been in that country and "substantially transformed into a new or different article	Preferential tariff offered under GSP to 140 developing countries and 15 territories, including 47 LDCs. As of April 2003, Japan increased the number of agricultural and fishery products for which LDCs were granted duty-free treatment. Simple average tariff rates under GSP, LDCs and Japan-Singapore Economic Agreement for a New Age Partnership (JSEPA) are lower than the simple average MFN tariffs.	Thailand does not have specific laws, judicial decisions or administrative rulings of general application relating to non-preferential rules of origin. Imports from ASEAN countries are subject to the rules of origin for the ASEAN CEPT Scheme.	Does not apply rules of origin for imports from MFN sources. Preferential rules of origin are applied under bilateral and regional trade agreements.

Table 15 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
		of commerce" with a name, character or use that is distinct from that of the article or articles from which it was so transformed.			

Sources: WTO (2004a), *Trade Policy Review of the European Union*, Report by the Secretariat; WTO (2003a), *Trade Policy Review of the USA*, Report by the Secretariat; WTO (2004b), *Trade Policy Review of Japan*, Report by the Secretariat; WTO (2003b), *Trade Policy Review of Thailand*, Report by the Secretariat; and WTO (2002), *Trade Policy Review of India*, Report by the Secretariat.

Table 16. Government participation in trade, restrictive practices and more generalized policies

Indicator	European Union	United States	Japan	Thailand	India
Subsidies and other aids	The European Union provides export subsidies for wheat and wheat flower, coarse grains, rice, rapeseed, olive oil, butter and butter oil, skim milk powder, cheese, other milk products, beef meat, pig-meat, poultry meat, eggs, wine, fresh and processed fruit and vegetables, raw tobacco and alcohol. The products receiving the highest share of export subsidies were sugar (18.8%), "incorporated products" (16%), milk products (15.6%), beef (15.1%), butter and butter oil (12.6%) and cheese (7.3%). Although the European Commission does not have a policy of direct or indirect assistance to exports, such assistance can be offered by individual member States, subject to community rules. In marketing year 2000/2001, the EC-15's total Aggregate Measurement of Support	The United States has committed to spending total outlays not exceeding US$ 594 million, per annum on subsidizing exports of 13 product groups comprising cereals, oilseeds, dairy products and vegetables. Actual export subsidies in 2000 amounted to US$ 15 million, and were concentrated on exports of cheese, other milk products and poultry. A total of 91% of total exports of skimmed milk powder were subsidized, up from 71% in 1999. In 2001, export subsidies amounted to US$ 55 million, and covered only dairy products. From October 1999 to September 2000, AMS was US$ 17 billion for agricultural products. Direct payments for soya beans, other oilseeds and peanuts, wheat, corn, barley, upland cotton, oats, rice and sorghum. Loan programmes that	Total transfers to agriculture amounted to 1.4% of GDP in 2002, while the sector's share of GDP was 1%. Total transfers to agriculture amounted to 1.4% of GDP in 2002, while the sector's share of GDP was 1%.	Thailand's production subsidy and support programmes for agriculture include a pledging scheme, soft loans and price interventions in agriculture.	India provides indirect subsidies for exports, including exemptions from tax and import duty, but it does not provide direct subsidies for exports. Minimum support price (MSP) for rice, wheat, oil seeds etc; price support for pulses, oilseeds and other products. Market Intervention Scheme (MIS) for a number of horticultural products, including oranges, coriander seed, apples, oil palm, potatoes, red chillies, areca nut, ginger and onions.

Table 16 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
	(AMS) amounted to 43,654 million pounds, while domestic support through green box and blue box measures reached 21,845 million pounds and 22,223 million pounds, respectively. The producer subsidy estimate for EC remains very high, particularly for beef and veal, wheat and other grains, sugar, milk and sheep meat; eggs benefit the least.	provide a fixed revenue floor per unit of production for producers of eligible crops, and thus provide incentives to continue production when price falls which covers rice, corn, sorghum, barley and oats, extra long staple (ELS) and upland cotton, soya beans, other oilseeds, wheat, peanuts, wool, mohair, honey, dry peas, lentils, and small chickpeas. Price guarantee programme for tobacco. Counter-cyclical payment for wheat, corn, sorghum, barley, oats, upland cotton, rice, soya beans, other oilseeds and peanuts. Aside from the Step 2 programme for cotton, it is eligible for direct payments, loan programmes and counter-cycle payments.			

Table 16 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
State trading		State trading on wheat, corn, oilseeds, cotton (upland and extra long staple), rice, tobacco, small chick peas, lentils and dry peas, milk and milk products, barley, oats, grain sorghum, mohair, other wool, honey, peanuts and sugar.	State trading activities involve leaf tobacco, opium, rice, wheat and barley, milk products and raw silk.		Imports subject to state trading include urea, whether or not in aqueous solution; ammonium sulphonitrite; coconut oil and its fractions; copra; some cereals (wheat, rye, oats, maize, rice, grain sorghum, buckwheat, millet, canary seed, jawar, bajra, ragi and other cereals).
Goods subject to specialized management by line ministries				A few export items (e.g., orchids, longans and durian) require registration with the Department of Agriculture.	
State procurement policy				State procurement policy exists.	Wheat, rice and edible oils are procured by the Government and provided to consumers through the Public Distribution System.

Sources: WTO (2004a), *Trade Policy Review of the European Union*, Report by the Secretariat; WTO (2003a), *Trade Policy Review of the USA*, Report by the Secretariat; WTO (2004b), *Trade Policy Review of Japan*, Report by the Secretariat; WTO (2003b), *Trade Policy Review of Thailand*, Report by the Secretariat; and WTO (2002), *Trade Policy Review of India*, Report by the Secretariat.

Table 17. Technical barriers to trade

Indicator	European Union	United States	Japan	Thailand	India
Health and sanitary regulations and quality standards	The plant health regulations cover protective measures against diseases of plants and pesticide residues, and the marketing of seeds and the propagating materials for agriculture, horticulture and forestry.	Assessment of conformity with SPS requirements, especially for plants and animal products, is generally carried out by the US Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) and Food and Safety Inspection Service (FSIS) inspectors located at the borders. It requires issuing country of origin labelling guidelines for voluntary use by retailers who wish to notify their customers of the country of origin of beef (including veal), lamb, pork, fish, perishable agricultural commodities, and peanuts.	Voluntary standards in Japan comprise Japan Industrial Standards (JIS) and Japan Agricultural Standards (JAS) with 9,293 and 243 standards, respectively in 2004. Revised regulations under the Food and Sanitation Law introduced specifications and standards for food and food additives, in order to prohibit the use of bovine vertebral column as an ingredient of processed foods if it is derived from cattle originating in a country or zone where bovine spongiform encephalopathy (BSE) has occurred.		Under a notification issued in October 2001, "livestock products" include products, eggs and seeds of all aquatic animals. Imports of all these products require a sanitary import permit issued by the Department of Animal Husbandry and Dairying. All imports of primary agricultural products are subject to bio-security and SP compliance.
Safety and industrial standards and regulations		APHIS has regulatory responsibility for safeguarding United States animal and plant resources from exotic pests and			The Bureau of Indian Standards (BIS) endeavours to align Indian standards as far as possible with international standards.

Table 17 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
		diseases. Its Import Authorization System (IAS) allows importers to submit applications for permits to import fruit and vegetables, and animal products and organisms.			As of 1 April 2001, 3,020 Indian Standards (some 17%) had been harmonized with international standards; from 1998 to 2001, however, the percentage of standards that were harmonized with international standards was considerably higher, averaging around 42%. The BIS Certification Mark was made mandatory for 133 items (both locally produced and imported).
Packaging and labelling regulations			Food and food additives must be labelled with the name of the substance, date of minimum durability, ways of storing and the manufacturer. Labelling is mandatory only for designated food processed in Japan. The Agricultural Products Inspection Law requires mandatory inspections of rice, wheat and		Information required on packaging and labelling for all packaged products includes: (a) name and address of the importer; (b) generic or common name of the commodity; (c) net quantity in terms of standard unit of weights and measures (or its equivalent if given in any other unit); (d) month and year in which the commodity was manufactured, packeted or imported; and (e) maximum

Table 17 *(continued)*

Indicator	European Union	United States	Japan	Thailand	India
			barley as well as soya beans.		retail sale price (including all taxes, freight, transport charges, commission payable to dealers, and all other charges including advertising, delivery and packing).
Others measures	In marketing year 2000/2001, the European Commission invoked the price-based special safeguard (SSG) clause under the WTO AoA for sugar, molasses and a number of poultry products, while the volume-based SSG clause was made operational for some fruit and vegetable products.		SSGs were taken during 2002-2004 for a number of products, including rice, small red beans, wheat flour, starch, inulin, butter and food preparations of flour, meal or starch.		

Sources: WTO (2004a), *Trade Policy Review of the European Union*, Report by the Secretariat; WTO (2003a), *Trade Policy Review of the USA*, Report by the Secretariat; WTO (2004b), *Trade Policy Review of Japan*, Report by the Secretariat; WTO (2003b), *Trade Policy Review of Thailand*, Report by the Secretariat; and WTO (2002), *Trade Policy Review of India*, Report by the Secretariat.

Table 18. Non-tariff barriers imposed by the European Union, Japan, India, Thailand and the United States on major export items of Bangladesh and Cambodia

HS Code	Product	Export interest of	European Union	United States	Japan	Thailand	India
030613	Shrimps and prawns, frozen	Bangladesh, Cambodia	Import quota, European Regional Development Fund (ERDF) support	Import licence			
240220	Cigarettes containing tobacco	Bangladesh				Tariff quota, import licence	
090230	Tea, black (fermented or partly) in packages < 3 kg	Bangladesh					Import monitoring
240120	Tobacco, unmanufactured, stemmed or stripped	Bangladesh, Cambodia	Export subsidy, more restrictive rules of origin	Import quota, import licence, state trading	State trading		
070910	Globe artichokes, fresh or chilled	Bangladesh					
030269	Fish nes, fresh or chilled, whole	Bangladesh	Import quota, ERDF support				
030420	Fish fillets, frozen	Bangladesh	Import quota, ERDF support	Import licence			
060499	Foliage, branches for bouquets etc., except fresh	Bangladesh					
170111	Raw sugar, cane	Bangladesh		Import quota	State procurement (price support)	Tariff quota, import licence	

Table 18 *(continued)*

HS Code	Product	Export interest of	European Union	United States	Japan	Thailand	India
070990	Vegetables, fresh or chilled nes	Bangladesh	Import licence, export subsidy	Export subsidy, application for import permit			
030329	Salmonidae, nes, frozen, whole	Bangladesh, Cambodia					
090240	Tea, black (fermented or partly) in packages > 3 kg	Bangladesh					
030614	Crabs, frozen	Bangladesh					
030379	Fish nes, frozen, whole	Bangladesh	Import quota, ERDF support	Import licence			
240290	Cigars, cheroots, cigarettes, with tobacco substitute	Bangladesh	Minimum rate of excise duty varying among the member countries				
070390	Leeks and other alliaceous vegetables, fresh or chilled	Bangladesh	Import licence, export subsidy	Export subsidy, application for import permit			
200980	Single fruit, vegetable juice nes, not fermented or spirit	Bangladesh	Import licence	Application for import permit			
240110	Tobacco, unmanufactured, not stemmed or stripped	Bangladesh, Cambodia	Export subsidy, more restrictive rules of origin	Import quota, import licence, state trading	State trading	Tariff quota, import licence	

Table 18 *(continued)*

HS Code	Product	Export interest of	European Union	United States	Japan	Thailand	India
200490	Vegetables nes and mixtures, prepared, frozen	Bangladesh	Import licence	Export subsidy, application for import permit			
100630	Rice, semi-milled or wholly milled	Bangladesh, Cambodia	Import licence, export subsidy, high producer subsidy	Export subsidy, state trading	Tariff quota, state trading, inspection, price-based safeguard in financial year 2002, state procurement (price support)	Tariff quota, import licence	Import monitoring, state trading, minimum support price, government procurement
060491	Foliage, branches for bouquets etc., fresh	Bangladesh					
080290	Nuts edible, fresh or dried, nes	Bangladesh					
190590	Communion wafers, rice paper, bakers' wares nes	Bangladesh					
190410	Cereal foods obtained by swelling, roasting of cereal	Bangladesh					
050510	Feathers and down used for stuffing	Bangladesh					
210690	Food preparations nes	Bangladesh					
200190	Vegetables, fruit, nuts nes prepared or preserved with vinegar	Bangladesh		Application for import permit			Import monitoring

Table 18 *(continued)*

HS Code	Product	Export interest of	European Union	United States	Japan	Thailand	India
100620	Rice, husked (brown)	Bangladesh	Tariff quota, import licence, export subsidy, high producer subsidy	Export subsidy, state trading	Tariff quota, state trading, inspection	Tariff quota, import licence	Import monitoring, state trading, minimum support price, government procurement, import licence
110520	Potato flakes, granules and pellets	Bangladesh					
220290	Non-alcoholic beverages nes, except fruit, vegetable juices	Bangladesh				Tariff quota, import licence	Support by market intervention scheme
100590	Maize except seed corn	Cambodia		Export subsidy		Tariff quota, import licence, import surcharge	Import quota, import monitoring, state trading, import licence
110814	Manioc (cassava) starch	Cambodia					
240130	Tobacco refuse	Cambodia	Export subsidy, more restrictive rules of origin	Import quota, import licence, state trading			
010290	Bovine animals, live, except pure-bred breeding	Cambodia					
240220	Cigarettes containing tobacco	Cambodia				Tariff quota, import licence	
070320	Garlic, fresh or chilled	Cambodia				Tariff quota, import licence	

Table 18 *(continued)*

HS Code	Product	Export interest of	European Union	United States	Japan	Thailand	India
030110	Ornamental fish, live	Cambodia		Import licence			
030211	Trout, fresh or chilled, whole	Cambodia					
020629	Bovine edible offal, frozen except livers and tongues	Cambodia					
110220	Maize (corn) flour	Cambodia					
220820	Spirits obtained by distilling grape wine, grape marc	Cambodia					
080130	Cashew nuts, fresh or dried	Cambodia					
100190	Wheat except durum wheat, and meslin	Cambodia	Export subsidy, state trading, high producer subsidy	Export subsidy, state trading	Tariff quota, state trading, inspection, state procurement (price support)		Minimum support price, government procurement
190510	Crispbread	Cambodia					
100510	Maize (corn) seed	Cambodia		Export subsidy		Tariff quota, import licence, import surcharge	Import quota, import monitoring, state trading, import licence
071190	Vegetables nes and mixtures provisionally preserved	Cambodia	Import licence, export subsidy	Export subsidy, application for import permit			
070820	Beans, shelled or unshelled, fresh or chilled	Cambodia					
080110	Coconuts, fresh or dried	Cambodia					

Table 18 *(continued)*

HS Code	Product	Export interest of	European Union	United States	Japan	Thailand	India
071230	Mushrooms and truffles, dried, not further prepared	Cambodia					
	All agriculture items		VAT (15%) with one or two reduced rates not lower than 5%; under certain conditions VAT exemptions are granted for certain agricultural product imports; AMS 43,654 million pounds in 2000/2001; excise duty at the same rate on imports and domestic production	Harbour Maintenance Tax at an ad-valorem rate of 0.125%, AMS US$ 17 billion subsidy from October 1999 to September 2000	Transfer to agriculture 1.4% of GDP in 2002	Excise tax, VAT (7%), municipality tax, production subsidy and support programme for agriculture, which includes a pledging scheme, soft loans and price interventions	Indirect export subsidy including exemptions from tax and import duty; all imports of primary products are subject to a bio-security and SP compliance.

Sources: WTO (2004a), *Trade Policy Review of the European Union*, Report by the Secretariat; WTO (2003a), *Trade Policy Review of the USA*, Report by the Secretariat; WTO (2004b), *Trade Policy Review of Japan*, Report by the Secretariat; WTO (2003b), *Trade Policy Review of Thailand*, Report by the Secretariat; and WTO (2002), *Trade Policy Review of India*, Report by the Secretariat.

Table 19. Non-tariff barriers applied by Thailand to agricultural commodities

HS Code				NTM type	Description
2-digit	4-digit	6-digit	7/8/9-digit		
02	0202 to 0210	–	–	Technical measure	Quality inspection required by Ministry of Agriculture
07	0702	–	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
07	0703	0703.10	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
07	0712	0712.20, 0712.90	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
08	0801	0801.11, 0801.19	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
08	0811	–	–	Technical measure	Quality inspection required by Thailand Industrial Standard Institute (TISI)
08	0813	0813.40	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
09	0901	–	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
09	0901	0901.21	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
09	0902	–	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
09	0904	0904.11, 0904.12	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce / Ministry of Agriculture
10	1005	1005.90	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
10	1006	1006.10, 1006.20, 1006.30, 1006.40	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
12	1201	1201.00	1201.001	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
12	1201	1201.00	1201.009	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture

Table 19 *(continued)*

HS Code				NTM type	Description
12	1203	1203.00	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
12	1209	1209.91, 1209.99	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
14	1401	1401.20	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
19	–	–	–	Quantity control measure	Import controlled by Food and Drug Administration
20	2008	2008.20	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
20	2009	2009.41	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
21	2101	2101.11	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
22	–	–	–	Import licence and technical measure	Import is subject to licensing, testing, inspection and quarantine requirements by Food and Drug Administration
23	2301	2301.20	2301.20.0106	Import licence: Non-automatic licensing	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture
23	2304 to 2305	–	–	Import licence	Import licence required by Department of Foreign Trade, Ministry of Commerce/ Ministry of Agriculture

Source: ASEAN website www.aseansec.org (accessed on 17 October 2005).

product level. NTM data reported in TRAINS are at the six-digit classification level in the Harmonized System and cover "core" NTMs or relatively restrictive NTMs. A core NTM includes three major categories of non-tariff measures: (a) quantity control measures, excluding tariff quotas and enterprise-specific restrictions; (b) finance measures, excluding regulations concerning terms of payment and transfer delays, and (c) price control measures (Bora and others, 2002a and 2002b).

The product-specific incidence of NTBs for all major agricultural commodities of export interest to Bangladesh and Cambodia is shown in table 20. These data were obtained from TRAINS. Before interpreting the numbers reported in the table, it is pertinent to mention the procedure followed by UNCTAD in calculating these numbers. UNCTAD used the most conventional tool for quantifying the incidence of NTMs, i.e., the frequency index, which shows the number of tariff lines covered by some pre-selected groups of the NTM. By way of illustration, consider a six-digit code comprising four subheadings that

Table 20. Product-specific incidence (frequency ratio percentage) of non-tariff measures

HS Code	Product	Export interests of	European Union	India (1997)	Japan (2001)	Thailand (2001)	United States (1999)
010290	Bovine animals, live, except pure-bred breeding	Cambodia	1	100	0	100	100
10600[a]	Animals, live, except farm animals	Bangladesh, Cambodia		100		100	
020629	Bovine edible offal, frozen except livers and tongues	Cambodia	87	100	0	100	100
030110	Ornamental fish, live	Cambodia	50	100	100	100	50
030199	Fish live, except trout, eel or carp	Cambodia	5	100	100	100	50
030211	Trout, fresh or chilled, whole	Cambodia	0	100	100	100	100
030269	Fish nes, fresh or chilled, whole	Bangladesh, Cambodia	1	100	100	100	100
030310[a]	Salmon, Pacific, frozen, whole	Bangladesh		100		100	
030329	Salmonidae, nes, frozen, whole	Bangladesh, Cambodia	25	100	100	100	100
030339	Flatfish except halibut, plaice or sole, frozen, whole	Bangladesh	0	100	100	100	100
030376	Eels, frozen, whole	Bangladesh	0	100	100	100	100
030379	Fish nes, frozen, whole	Bangladesh	1	100	100	100	100
030410	Fish fillet or meat, fresh or chilled, not liver, roe	Bangladesh	4	100	100	100	100
030420	Fish fillets, frozen	Bangladesh	2	100	100	100	100
030490	Fish meat and mince, except liver, roe and fillets, frozen	Bangladesh, Cambodia	2	100	100	100	100
030510	Flour, meal and pellets of fish for human consumption	Cambodia	50	100	100	100	100
030520	Livers and roes, dried, smoked, salted or in brine	Bangladesh	16	100	100	100	100
030530	Fish fillets, dried, salted or in brine, not smoked	Cambodia	7	100	100	100	100
030549	Smoked fish and fillets other than herrings or salmon	Bangladesh	7	100	100	100	100
030551	Cod dried, whether or not salted but not smoked	Bangladesh	0	0	100	100	100

Table 20 *(continued)*

HS Code	Product	Export interests of	European Union	India (1997)	Japan (2001)	Thailand (2001)	United States (1999)
030559	Dried fish, other than cod, not smoked	Bangladesh	15	0	100	100	100
030613	Shrimps and prawns, frozen	Bangladesh, Cambodia	0	100	100	100	100
030614	Crabs, frozen	Bangladesh	0	100	100	100	100
030619	Crustaceans nes, frozen	Bangladesh	0	100	100	100	100
030622	Lobsters (Homarus), not frozen	Bangladesh, Cambodia	0	0	100	100	100
030623	Shrimps and prawns, not frozen	Bangladesh, Cambodia	0	0	100	100	100
030624	Crabs, not frozen	Bangladesh	0	0	100	100	100
030729	Scallops other than live, fresh or chilled	Cambodia	0	100	100	100	100
030749	Cuttlefish, squid, frozen, dried, salted or in brine	Cambodia	0	100	100	100	100
030791	Aquatic invertebrates, nes, fresh or chilled, live	Cambodia	50	100	100	100	100
040210	Milk powder < 1.5% fat	Cambodia	0	100	100	100	100
050510	Feathers and down used for stuffing	Bangladesh	0	100	0	100	100
050610	Ossein and bones treated with acid	Bangladesh	50	100	100	100	100
060499	Foliage branches for bouquets etc., except fresh	Bangladesh	16	100	0	100	100
070320	Garlic, fresh or chilled	Cambodia	0	100	0	100	100
070390	Leeks and other alliaceous vegetables, fresh or chilled	Bangladesh	0	100	0	100	100
070820	Beans, shelled or unshelled, fresh or chilled	Cambodia	0	100	0	100	100
070910	Globe artichokes, fresh or chilled	Bangladesh	0	100	0	100	100
070990	Vegetables, fresh or chilled, nes	Bangladesh	12	100	0	100	88
071190	Vegetables, nes and mixtures provisionally preserved	Cambodia	0	100	0	100	60
071230[a]	Mushrooms and truffles, dried, not further prepared	Cambodia		100		100	
080130[b]	Cashew nuts, fresh or dried	Cambodia					

Table 20 *(continued)*

HS Code	Product	Export interests of	European Union	India (1997)	Japan (2001)	Thailand (2001)	United States (1999)
090230	Tea, black (fermented or partly) in packages < 3 kg	Bangladesh	0	100	0	100	0
090240	Tea, black (fermented or partly) in packages > 3 kg	Bangladesh	0	100	0	100	100
100190	Wheat except durum wheat, and meslin	Cambodia	0	0	100	100	100
100510	Maize (corn) seed	Cambodia	0	0	0	100	100
100590	Maize except seed corn	Cambodia	0	0	0	100	100
100620	Rice, husked (brown)	Cambodia	0	0	100	100	100
100630	Rice, husked (brown)	Bangladesh, Cambodia	0	0	100	100	100
110220	Maize (corn) flour	Cambodia	0	100	0	100	0
110814	Manioc (cassava) starch	Cambodia	0	0	100	100	0
140110	Bamboos used primarily for plaiting	Bangladesh	0	0	0	0	0
150790	Refined soya-bean oil, not chemically modified	Bangladesh	0	100	0	100	0
170111	Raw sugar, cane	Bangladesh	0	0	0	100	100
190410	Cereal foods obtained by swelling, roasting of cereal	Bangladesh	100	100	75	100	100
190510	Crispbread	Cambodia	0	0	0	100	100
200310	Mushrooms, prepared or preserved, not in vinegar	Cambodia	0	100	0	100	50
200980	Single fruit, vegetable juice, nes, not fermented or spirits	Bangladesh	0	100	0	100	100
210690	Food preparations nes	Bangladesh	0	100	100	100	97
220300	Beer made from malt	Cambodia	0	100	0	0	100
220820	Spirits obtained by distilling grape wine, grape marc	Cambodia	0	100	0	0	100
240110	Tobacco, unmanufactured, not stemmed or stripped	Bangladesh, Cambodia	0	0	0	0	0
240120	Tobacco, unmanufactured, stemmed or stripped	Bangladesh, Cambodia	0	0	0	0	0
240130	Tobacco refuse	Bangladesh, Cambodia	0	0	0	0	0
240210	Cigars, cheroots and cigarillos, containing tobacco	Cambodia	0	100	0	100	0
240220	Cigarettes containing tobacco	Bangladesh, Cambodia	0	100	0	100	0

Table 20 *(continued)*

HS Code	Product	Export interests of	European Union	India (1997)	Japan (2001)	Thailand (2001)	United States (1999)
240290	Cigars, cheroots, cigarettes, with tobacco substitute	Bangladesh	0	100	0	100	0
240310	Cigarette or pipe tobacco and tobacco substitute mixes	Cambodia	0	100	0	100	0

Source: United Nations Conference on Trade and Development, 2004, TRAINS Database. Data coverage of TRAINS on Internet, 1 November 2004.

Note: Dates in the parentheses indicate reference year for NTM incidence.

[a] Obtained for 2001.

[b] Obtained for 1995.

include separate lines for apples and bananas, pineapples, grapes and melons, and oranges. An import licence applies to apples and oranges, while an advance import deposit applies to grapes and melons. In this example, the NTM incidence is 100 per cent for the oranges tariff line, since they are subject to licensing, 50 per cent for apples as they are only affected by licensing, zero per cent for pineapples, and 100 per cent for grapes and melons. It is important to note that the percentage term indicates only the incidence and not the impact of NTMs. Furthermore, the number calculated is dependent on the number of lines that are affected, not the number of measures.

The prevalence of 100 in table 20 indicates that most of the major agricultural export items from Bangladesh and Cambodia face NTMs in all the study countries. An important note of caution needs to be mentioned here – a value of 0 (zero) may indicate data not available or no incidence of NTBs. Therefore, researchers always use other evidence and information for interpreting zero values. Since verification from other sources was not possible, zero values have not been interpreted.

Product-specific NTM incidence is very important for the formulation of export strategies. However, comprehensive measures are needed for quick understanding. Therefore, researchers report these values of aggregation at the HS two-digit level. A more popular way is to use a classification that reflects industry categories according to a Standard International Trade Classification (SITC). Bora and others (2002a) reported NTMs under four broad categories: primary products; manufactures; other consumer goods; and other products. A comparison of NTM coverage of agricultural products in the study countries is reported in table 21. The difference in reference years limits cross-country comparisons of NTMs. However, in the absence of data for all countries in the same year, this had to be done based on available data. Therefore, this limitation needs to be kept in mind. It is evident from table 20 that coverage of NTMs is generally higher for agricultural products than the average coverage applicable for primary products and for all products. Among the study countries, NTM coverage for agricultural products is highest in India (42.24), followed by Japan, Thailand and the United States.

Table 21. Non-tariff measure coverage of agricultural products in the study countries

Country	Reference year	NTM coverage		
		Agricultural products (0-2, 4)	Primary products (0-4, 68)	All products (0-9)
United States	1999	4.56	4.69	5.08
European Union		2.30	1.98	5.79
Japan	2001	7.69	7.49	5.61
Thailand	2001	6.67	6.32	3.97
India	1997	42.24	35.37	34.66

Sources: Bora and others (2002a); TRAINS database.

Bacchetta and Bora (2001) reported the frequency of NTBs faced by LDCs for their agricultural exports (table 22). Three important messages are evident from the table:

(a) The frequency of non-tariff measures is generally higher for agricultural products than for manufactures, and minerals and fuels;

(b) In the case of agricultural products, developed countries and Quad countries (United States, Canada, the European Union and Japan) have a higher frequency of NTBs than that of other countries;

(c) Developed countries and Quad countries have a higher level of frequency of NTBs for agricultural commodities of export interest to Bangladesh and Cambodia, such as crustaceans (live), other fish than agricultural products for which they cannot compete (coffee and substitutes with coffee, and oilseeds).

Bhattacharya and Mukhopadhaya (2002) reported NTMs faced by exports from Bangladesh. In 1998, Bangladesh exported US$ 2.3 billion worth of products to the European Union, US$ 2.1 billion to the United States and US$ 0.1 billion to Japan (table 23). Exports facing NTMs as a percentage of total exports to the European Union, the United States and Japan were 91 per cent, 94 per cent and 68 per cent, respectively. The share of exports facing multiple NTMs in the European Union, the United States and Japan were 93 per cent, 91 per cent and 63 per cent, respectively. Non-traditional NTMs such as SPS, TBT and related measures were the most prevalent measures, accounting for about 96 per cent in the European Union, 95 per cent in the United States and 64 per cent in Japan.

(b) Rules of origin as a barrier to trade

Rules of origin can also act as NTBs. Brenton (2003) pointed out that both Bangladesh and Cambodia had high relevance of EBA (i.e., exports eligible for preferences are more than 30 per cent of total exports to the European Union) as well as high take-up

Table 22. Frequency of non-tariff measures faced by exports of agricultural commodities from LDCs

Description	Developed countries	South Asia	Middle East and North Africa	Latin America and the Caribbean	Europe and Central Asia	East Asia and the Pacific	Sub-Saharan Africa	QUAD
Agricultural and fishery products	48.24	14.87	57.69	34.24	32.93	24.42	18.58	41.98
Crustaceans (live)	58.64	8.33	75.00	30.98	43.56	22.22	20.00	50.00
Other fish	64.49	14.07	75.16	30.96	43.85	22.87	20.28	55.43
Edible fruit and nuts	53.95	19.21	54.61	37.09	32.36	24.21	28.20	54.67
Coffee and substitutes with coffee	32.26	17.86	44.64	28.10	20.36	26.19	18.18	21.43
Oil seeds and miscellaneous grain, seeds and fruit	53.93	14.20	68.55	40.75	38.49	28.71	25.12	37.41
Other agricultural and fishery products	43.50	11.11	52.08	35.28	28.59	32.87	17.80	27.50
Minerals and fuels	6.72	3.29	5.73	6.64	6.72	4.52	0.16	6.53
Manufactures	10.67	7.20	10.96	11.68	7.15	5.57	1.74	16.78

Source: Bacchetta and Bora (2001).

of preferences (i.e., more than 30 per cent of exports are eligible for preferences). Actual take-up of preferences in 2001 was 36 per cent for Cambodia and 50 per cent for Bangladesh, and about 50 per cent for all non-ACP LDCs. The value of implied transfer that may have entered duty-free (i.e., the value of exports that requested duty-free access multiplied by the MFN tariff) in 2001 was Euro 1.9 billion for Bangladesh and Euro 2.3 million for Cambodia. The study added that if EBA had delivered duty-free access to all exports recorded as having come from Bangladesh and Cambodia, there would have been an additional transfer of Euro 1.93 billion to Bangladesh and Euro 3.7 million to Cambodia. For Bangladesh, EBA led to a transfer (or a margin of preference) equivalent to 5.65 per cent. However, the lack of full utilization of the available preferences means that Bangladesh faced a trade-weighted average tariff paid by many non-preferential exporters to the European Union. Cambodia faced relatively higher average tariffs (7.66 per cent) when exporting to the European Union, after taking into account the fact that only a proportion of exports could have entered the European Union duty-free.

Table 23. Non-tariff measures faced by exports from Bangladesh, 1998

Indicators	European Union	United States	Japan
Total exports (US$ billion)	2.3	2.1	0.1
Exports subject to NTMs (US$ billion)	2.06	1.93	0.08
Exports facing NTMs in total exports (%)	91.01	93.86	68.41
Export subject to single NTM (US$ billion)	0.14	0.18	0.03
Export subject to multiple NTMs (US$ billion)	1.92	1.76	0.05
Share of exports facing single NTM (%)	6.6	9.1	36.6
Share of exports facing multiple NTMs (%)	93.4	90.9	63.4
Distribution of NTMs faced by Bangladesh			
NTM incidences			
Tariff quota			13
Anti-dumping measures	10	10	
SPS, TBT and related measures	265	176	25
Percentage share			
Tariff quota			33.3
Anti-dumping measures	5.4	3.6	2.6
SPS, TBT and related measures	96.4	94.6	64.1

Sources: Calculations made by Bhattacharya and Mukhopadhaya (2002), Tables A6 to A10; based on United Nations Conference on Trade and Development TRAINS database.

Brenton and Manchin (2003) argued that the prime suspects for the lack of utilization of European Union trade preferences were the rules of origin, both in terms of the nature of the rules defining specific processing requirements, with the constraints that this entailed for international sourcing from the lowest cost locations, and the costs of providing the necessary documentation to prove conformity with the rules. The costs of documentation related to the rules of origin are compounded by the requirement that goods for which preferences are requested must be shipped directly to the European Union. If they are in transit through another country (which will be the case for most LDCs), then documentary evidence must be provided to show that the goods remained under the supervision of the customs authorities of the country of transit, did not enter the domestic market there and did not undergo operations other than unloading and reloading. In practice, it may be very difficult to obtain the necessary documentation.

D. Impacts of NTBs on exports from Bangladesh and Cambodia

Among the various NTMs, SPS is the most crucial for agricultural exports from Bangladesh, Cambodia and other LDCs. Bhattacharya and Mukhopadhaya (2002) reported that almost all exports from Bangladesh to the European Union market were subject to

SPS and TBT measures. Using TRAINS-UNCTAD data, they noted that of 275 NTM incidences faced by Bangladesh in the European Union in 1998, about 96.4 per cent were due to of SPS-TBT measures. Ferrer (2005) observed that exporters to the European Union were experiencing a constant rise of barriers due to SPS regulations, to levels that were at times widely viewed as protectionist NTBs rather than genuine and scientifically based safety needs. He argued that an indication of the rising SPS requirements could be seen in the increasing number of rejections of imported goods to the European Union, up from 230 cases in 1998 to 1,520 cases in 2003. This was due to the increase in the number, and the tightening of standards. The study added that the rejections concentrated on fish and crustaceans, meat, fruit and vegetables. Section B of this chapter shows that Bangladesh and Cambodia have a comparative advantage in these products.

Non-compliance with SPS requirements can have devastating consequences for the exporting country. Bangladesh has already suffered the impacts of an SPS-related trade ban in 1997, when the European Union banned the import of shrimps as SPS requirements were not correctly fulfilled. The ban remained effective for five months, between August and December 1997. Cato and Santos (2000) carried out an in-depth study of the negative impact of the ban, and estimated that the cost of the European Union ban to Bangladesh was about US$ 65.1 million. Some of the plants did succeed in diverting a large part of their intended European Union shipments to the United States and Japan, thereby reducing their losses. Yet, despite such efforts, the estimated net loss was equivalent to about US$ 14.7 million. These were evidently short-term losses. The medium- to long-term losses stemming from the sector's reduced momentum, market diversions and erosion in price offered to exporters were, in all probability, much higher. The Government of Bangladesh and the shrimp entrepreneurs had made substantial investment in ensuring Hazard Analysis and Critical Control Point (HACCP) compliance. The total cost of upgrading the facilities and equipment, and training the staff and workers in order to achieve acceptable standards was about US$ 18 million, while the annual cost of maintaining the HACCP programme was estimated to be US$ 2.4 million (Cato and Santos, 2000). Khatun (2006) discussed in detail the impacts of SPS and the trade ban on poverty levels and livelihoods of farmers, transporters, processing factories, and male and female processing workers.

Bora and others (2002b) assessed the effects of trade policy initiatives aimed at improving market access for LDCs in Quad countries (Canada, European Union, Japan and the United States). The study simulated two policy scenarios: (a) the elimination of all tariff and non-tariff barriers against LDCs in the European Union; and (b) the elimination of tariff and non-tariff barriers faced by LDCs in all Quad markets. The simulations were performed with the GTAP5 version database. For the first simulation, the policy simulation generated an expected improvement in allocative efficiency, which was especially evident for LDCs. In percentage terms, the big gainers were small sub-Saharan African countries (Malawi, the United Republic of Tanzania, and Zambia), whose gains were above one percentage point, while Bangladesh and Uganda enjoyed the smallest gains. In the second scenario, Bangladesh gained the most, both in absolute (US$ 1,200 million) and percentage (3 per cent) terms.

E. Implications for policy and WTO negotiation strategy

The present study has important research findings related to NTBs practiced by the importing countries on agricultural products exported by LDCs, particularly from Bangladesh and Cambodia. The study revealed that:

(a) Both the developed and developing countries use a number of NTBs in the form of quantity control, price control and finance measures;

(b) NTBs limit exports from Bangladesh and Cambodia;

(c) Rules of origin compliance is often cumbersome due to certification and documentation requirements and, thus, acts as an NTB in agricultural trade; and

(d) Simpler rules of origin and enlargement of the scope of cumulation are likely to result in better utilization of preferences.

In view of the research findings and challenges faced by Bangladesh and Cambodia, particularly in the area of NTBs, they need to intervene at the domestic policy level and to engage more proactively at the WTO negotiations.

1. Implications for domestic policy

At the domestic level, both Bangladesh and Cambodia need to pursue a broad-based, diversified agricultural production and export strategy. They need to strengthen the capacity of their concerned agencies for issuing the required certificates and for monitoring compliance levels with rules of origin. In view of the numerous agro-producers in those countries, the governments need to design cost-effective SPS-compliant certification systems and infrastructure development that would not only promote exports but would also benefit poor producers of the country. The public sector must provide market information to agro-producers and processors on a regular basis. Awareness building about opportunities and compliance requirements among the producers, processors and exporters would be helpful if it accompanied by a complementary effort towards market diversification.

2. Implications for WTO negotiation strategy

At the WTO level, LDCs (particularly Bangladesh and Cambodia) have to engage more proactively during the ongoing negotiations on agriculture in order to safeguard their interests. Given the fact that agro-products from LDCs are often constrained by various NTBs and stringent standards imposed on SPS grounds, LDCs must demand WTO compliance and transparent criteria for NTMs. They should also demand that standards will in no way be set beyond the required scientific limit. In addition, LDCs may also ask for exemption from all trade remedy measures for exports of their agricultural products.

Under the Aid for Trade package, LDCs may also negotiate for allocation of funding for technical assistance in improving their facilities and capacities for compliance with certification system and related requirements.

LDCs have to implement the decisions reached through the Hong Kong Declaration (World Trade Organization, 2005). It is pertinent to recall that WTO members agreed that developed country members, and developing country members declaring themselves in a position to do so, would:

(a) Provide duty-free and quota-free market access, on a lasting basis, for all products originating from all LDCs by 2008 or no later than the start of the implementation period, in a manner that ensures stability, security and predictability; and

(b) Members facing difficulties at this time in providing market access, as set out above, will afford duty-free and quota-free market access for at least 97 per cent of the products originating from LDCs, defined at the tariff line level, by 2008 or no later than the start of the implementation period.

They also agreed to ensure that preferential rules of origin applicable to imports from LDCs are transparent and simple, and that they contribute to facilitating market access.

Considering the Hong Kong decisions, LDCs including Bangladesh and Cambodia may demand (a) harmonized rules of origin applicable in all developed countries, (b) simpler rules of origin, and (c) a system that requires less documentation and certification. In this connection, LDCs may also consider the proposals put forward by UNCTAD (2003) which include proposals for: (a) harmonizing and simplifying the percentage criterion; and (b) designing product-specific rules of origin that match the industrial capacity of LDCs. The UNCTAD report explained that if rules of origin based on a percentage criterion were to be used under some unilateral preferences of GSP schemes, it would be desirable for them to be based on a maximum import criterion rather than a minimum value-added requirement. The report added that a logical extension of the “import content” approach was value-added tariffs for determining duty. The problem with all rules of origin is the arbitrary cut-off point above which one gets preferences and below which one pays MFN. With value-added tariffs, the preferential rate is paid on the preferential component and MFN on the remainder. On the issue of development of product-specific rules of origin matching the industrial capacity of LDCs, the report put forward specific suggestions:

(a) For products under HS heading No. Chapter 16 (preparations of meat, fish or crustaceans, molluscs or other aquatic invertebrates), manufactured from meat of chapter 2 or fish of chapter 3. However, the simple addition of seasoning or preservatives will not be a conferring operation.

(b) For products under HS heading No. Chapter 20 (preparations of vegetables, fruit, nuts or other parts of plants), manufactured from fruit, nuts and vegetables of chapters 7 and 8, including reconstitution of juices in retail packing from concentrate of juices.

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IX. REGIONAL AGRICULTURAL TRADE LIBERALIZATION: PRIORITIES FOR POLICY MAKERS AND FUTURE RESEARCH NEEDS

By Allan N. Rae

A. Overview of the regional studies

The preceding chapters amply demonstrate that regional trade arrangements and ongoing negotiations over new BTAs and RTAs are numerous in the Asia-Pacific region. In South Asia, SAPTA/SAFTA is the most extensive, bringing together seven regional economies (Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan and Sri Lanka). However, some of these countries also have bilateral trade agreements among themselves – including India-Sri Lanka (the India-Lanka FTA), Sri Lanka – Pakistan, India – Bhutan, India – Nepal and India – Bangladesh. Some are also members of trade agreements with other Asian countries outside of South Asia, such as:

(a) APTA, which brings Bangladesh, India and Sri Lanka together with the Republic of Korea, the Lao People's Democratic Republic and China;

(b) The Thailand – Bangladesh preferential trade agreement; and

(c) The economic cooperation between Bangladesh, India and Sri Lanka with Thailand and Myanmar (BIMSTEC).

South Asian countries are also involved in negotiating or studying additional agreements with economies within Asia and beyond.

Preferential trade agreements in East Asia and South-East Asia are much more numerous, which is perhaps not surprising given the number of countries in this region. Chapter III lists 20 agreements in force, 26 under negotiation and another 29 under study. Of those in force at the time of writing, seven of the completed agreements were solely between East Asian or South-East Asian economies. Of those economies, Singapore is included in most agreements, with 11 in force and another 18 under negotiation or study. The Republic of Korea is also active, with three agreements in force (one with Singapore and the other two with non-Asian partners) and 14 under negotiation or study. By far the most extensive in terms of the number of partner countries is AFTA (comprising the 10 ASEAN members), which is seeking further broadening through negotiations or studies underway with another three Asian countries (Republic of Korea, India and Japan) as well as the United States, Australia and New Zealand (CER) and the European Union.

The South Asian economies have experienced favourable economic growth in recent years, but this has not always been experienced within their agricultural sectors. In some countries of the region, rural poverty and income inequality have worsened and are

major issues given the high share of rural residents in the total population. Despite the geographic proximity of the South Asian economies, agricultural competitiveness shows some variation across countries, suggesting scope for trade expansion under liberalized regional trade policies; however, up to the present, intraregional trade has accounted for advantage was shown to be relatively strong for fish in Maldives and Bangladesh, tea, and spices in Sri Lanka and India, and cereals and sugar in Pakistan and India.

Following completion of the Uruguay Round negotiations (all except Bhutan are WTO members) these countries bound agricultural tariffs at generally high levels, although applied rates are often much lower. On average, Bangladesh and India face lower agricultural tariffs for their exports to the South Asian region than the tariffs they impose on other South Asian imports, which is a broad indication of scope for gains from further regional cooperation. Of the South Asian economies, Maldives and Sri Lanka were shown to be the most open to agricultural trade and India the least open. Considerable economic liberalization has taken place in the region, including the agricultural sector. Nevertheless, high agricultural bound tariffs remain, together with para-tariffs, quantitative restrictions on agricultural trade and state import monopolies in some countries. Domestic support, such as input and other subsidies, is also provided to farmers – the levels of which vary across the region and are relatively higher in India than elsewhere – and in some cases, export subsidies are used.

SAPTA[1] includes a number of agricultural products offering concessions to the member countries. However, many of the agricultural tariff preferences offered under this agreement were said to be irrelevant to the member countries, with the real interests of such countries being subject to sensitive listings. The agreement also provides for technical assistance and special concessions to its least developed members. Member countries have agreed to implement the agreement by various dates, with the process to be completed by 2015. Analysis has shown that, so far, it has had a significant agricultural trade creation effect. The other intra-/interregional and bilateral trade agreements of the South Asian economies have included very few additional agricultural products for further liberalization. Some of the bilateral agreements take similar approaches to product coverage and rules of origin; they may classify agricultural products as “sensitive” or use tariff rate quotas to allow limited imports at concessional or zero rates. The India-Lanka agreement, which has encouraged quite rapid growth in bilateral agricultural trade, has less stringent rules of origin than does SAPTA. The interregional agreements do not include a significant number of agricultural concessions. It should also be noted that the domestic support and export subsidy policies of some countries in the region, together with the activities of state trading enterprises, have not been explicitly addressed in any of the agreements, in contrast to efforts in multilateral trade negotiations.

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[1] SAPTA, which was superseded by the implementation of SAFTA, was to have begun in 2006. However, some problems remain that are related to the extension of MFN treatment of India by Pakistan, and SAFTA therefore has not yet been fully implemented.

Turning to South-East Asia and East Asia, agriculture is also found to be a sensitive issue in bilateral and regional trade negotiations. Many of the agreements in place exhibit sensitive subsectors within agriculture that are either permanently or temporarily excluded, or contain liberal extension times for transition and subsequent adjustment. Nevertheless, some successes have been achieved in liberalizing agricultural trading conditions. Of particular note is the ASEAN approach to incorporating agricultural products within the scope of AFTA preferences. This agreement initially excluded unprocessed agricultural products from tariff concessions, but they were gradually incorporated through the use of temporary exclusion lists and sensitive lists. The time frame for moving such products from exclusion and sensitive lists to the inclusion list differs among ASEAN members, recognizing their particular concerns and stages of development.

Likewise, final concessionary tariff rates also can vary among member countries. At the time of writing, only a handful of unprocessed agricultural products remain on the sensitive list while any that have not already been liberalized are on track for eventual liberalization. As a result, average agricultural concessionary tariffs of ASEAN countries are well below MFN rates, and the dispersion of concessionary tariffs is also less than that of MFN rates. Perhaps because of the similarity of agricultural commodities produced in the ASEAN region, or because agricultural products were included relatively recently in the AFTA agreement, there has not as yet been a marked increase in intra-ASEAN agricultural trade that might be attributed to that agreement. The AFTA process of stepwise tariff reductions, phased transitions and other flexible arrangements illustrates how AFTA intends to eventually achieve agricultural trade reforms that were earlier thought impossible. It could constitute a model to be adopted elsewhere in order to influence the political economy, where it currently favours agricultural protectionism, towards a more liberal stance.

Also of note is the way in which agriculture was handled in the China – ASEAN agreement. Through its the Early Harvest Programme, most ASEAN countries have included nearly all agricultural tariff lines for accelerated tariff reduction. Reciprocity requires that China exactly matches the concessions for the same products. These ASEAN economies appear eager, therefore, to engage in more open agricultural trading with China and are prepared to permit Chinese access to their own markets in order to experience improved access to China's market. The Republic of Korea – Chile agreement also provides wide coverage of agricultural liberalization despite strong opposition from Korean farmers, although some products are subject to tariff rate quotas, exclusions lists and other lists of products that are to be negotiated once the Doha negotiations have been completed.

China is a relative latecomer to regional trade agreements. In force are the 2003 agreement with ASEAN and the 2004 agreements with Hong Kong, China, and Macao, China. However, China is negotiating or studying trade agreements with Australia, Chile, India, Japan, Republic of Korea, Malaysia, New Zealand and Singapore. China is a major producer and consumer of agricultural products and is becoming an increasingly important international trader of some of these products. The economic reforms of the 1980s and 1990s contributed to this process and, more recently, to the lowering of China's own trade barriers as a consequence of joining WTO in 2001. In addition to the non-tariff barriers

that impede the international trade of China (and many other countries covered in this study), China's potential gains from bilateral and regional trade agreements are currently restricted by its policy on grains self-sufficiency. Earlier quotas and now a price support system encourage grain production and thus discourage the shift of land use towards more labour-intensive activities, such as fruit and vegetable cultivation and livestock raising, in which China arguably has a comparative advantage.

One of the results of the Early Harvest Programme of the China – ASEAN free trade agreement is that China is taking market share for horticultural products away from ASEAN's traditional suppliers. Between 2002 and 2005, China's share of ASEAN's horticultural imports rose from 31 per cent to 38 per cent while that of the United States, Australia and New Zealand, for example, declined from 28 per cent to 20 per cent. However, China also has a comparative advantage relative to ASEAN in non-rice grain production, and this FTA could move against the imperative for China to reallocate land for horticultural and other labour-intensive farming activities.

Using an applied global general equilibrium model, potential gains from various bilateral and regional trade agreements are quantified and presented in chapter IV of this publication. Only agricultural tariffs have been eliminated in these studies. Therefore, they are valuable in that they are indicative of the gains that might be realized should member countries choose to extend preferences to all agricultural trade, including sensitive products such as rice. Before summarizing some of the main findings and implications of that work, a number of points need to be borne in mind. Only agricultural tariffs have been reduced in these analyses, so any existing domestic subsidies to agriculture, or agricultural export subsidies, remain untouched. Tariffs were completely eliminated by the member countries for all agricultural products – no sensitive or excluded products were recognized. The results provide a snapshot of outcomes at some time in the future when all those tariffs will have been eliminated by all parties to the agreement; implications of the timing of tariff reductions across products and countries, the resulting adjustment costs or the competitive and productivity gains often associated with freer trade have not been addressed. The studies recognize non-agricultural tariff preferences within existing agreements only to the extent that they were reflected in the 2001 base year database that was employed. (They are not recognized at all in hypothetical regional agreements analysed.) However, these non-agricultural preferences may have impacts on the agricultural sector; expansion or contraction of manufacturing sectors will have an impact on wages and resources available to the primary sector while changes in manufactured prices will affect the costs of agricultural activities that use such products (chemicals, machinery etc.). Finally, the analyses assume that trade will respond to tariff elimination – that is, there is no friction in trading channels, such as that due to non-tariff barriers, which will prevent agents responding to changes in price signals.

The analyses proceeded by first simulating an assumed Doha outcome, and then explored the additional welfare gains or losses from a range of regional trade agreements. Some were based on actual agreements such as SAFTA, AFTA and the India – Lanka agreement while others considered the addition of China, Japan, the Republic of Korea

and India to AFTA as well a wider grouping involving most ESCAP economies. Some of the conclusions arising from this work are detailed below.

For smaller bilateral agreements such as SAFTA, and also for AFTA, the gains to member countries tend to be small and much less than might be enjoyed following a successful Doha outcome, perhaps due to the similarity of their agricultural sectors. Within each agreement, the larger countries and/or those with a comparative advantage in agriculture (India and Pakistan, Thailand) gain the most from a regional agreement being extended to include agriculture. Agriculture is heavily protected in Japan and the Republic of Korea, so when these countries are added to the ASEAN – China trade agreement and agricultural tariffs are eliminated, they may be expected to dominate in terms of welfare gains. This is also the case, although with smaller gains, for China and most ASEAN economies. Viet Nam is shown to gain from agricultural liberalization within AFTA, but not in the extended AFTA, suggesting that this country may be competitive relative to other ASEAN countries but not with respect to China.

All members of this expanded AFTA agreement benefit from the addition of India, which is also currently very protective of its agriculture. It also appears that India stands to gain more by linking up with ASEAN and the North Asian economies, than with other South Asian partners. In most of these analyses, moderate trade diversion was found to occur. This appeared to be a greater problem with a Thailand – Japan agreement, since Japan's agricultural imports could be diverted from other competitive suppliers such as some in South-East Asia. Should all the Asia-Pacific economies (with the exception of the United States) come together in a pan-Pacific agreement, all members with the exception of Bangladesh and Sri Lanka are shown to gain from including agriculture. In fact, in many cases, the gains are larger than those resulting from participation in regional agreements involving fewer countries. A major conclusion is that the larger the group, and the more diverse the group in terms of both developed and developing country representation and economic structures, the larger the aggregate welfare gains from the inclusion of agriculture – with no exceptions – in regional agreements are likely to be.

B. Future shape of regionalism in Asia

Quantitative research conducted during this study and by others (for example, Gilbert, Scollay and Bora, 2001; Scollay and Gilbert, 2001) shows that larger regional trade groupings in Asia are economically preferable to a spaghetti bowl of smaller and bilateral groupings. Scollay and Gilbert (2001) demonstrated that an Asia-Pacific Economic Cooperation (APEC)-wide agreement combined with "open regionalism", an APEC preferential trade agreement, and a Western Pacific grouping are all preferable to other possible arrangements in the Asian region, with aggregate economic benefits declining in that same order. The superiority of the "open regionalism" approach is that preferences are also extended to non-members. This has the advantage of greatly simplifying administration procedures (for example, rules of origin would not be required), and trade diversion costs would not exist. A question is whether current efforts are likely to lead to such an expanded group.

As a continuing proliferation of smaller groupings and bilateral agreements would impose costs on non-members through trade diversion, this fact encouraged Gilbert, Scollay and Bora (2001) to wonder whether such costs would lead to friction within wider political forums such as APEC, or encourage non-members to actively pursue wider arrangements. While negotiating within smaller groupings might offer the path of least resistance from a political point of view, trade friction could result with non-members that might well add to political friction. In addition, when countries are involved in negotiations over a larger number of smaller groupings, scarce negotiating resources are absorbed that could be directed in other directions that offer greater economic gains.

The history of smaller bilateral or regional agreements within Asia, and the successive addition of new members may be viewed positively (Levy, 2006) as taking smaller steps forward is often politically easier (for example, adjustment costs may be less) while at the same time creating a certain momentum for regional integration. This process of progressive expansion and the potential amalgamation of smaller regional groups may also assist in sensitizing entrenched domestic interests and lobby groups to the benefits of liberalization and, therefore, the erosion of vested interests. This process might also provide what Levy called an "incubator" to enable domestic firms to adjust to new competitive pressures and learn to trade regionally without being abruptly exposed to fuller international competition.

From an Asian perspective, Scollay and Gilbert (2001) demonstrated that the progressive expansion of groups generally benefited new as well as existing members, and that amalgamation of groups generally benefited the members of the groups being merged. There is encouraging evidence that Asian economies are moving in that direction, especially involving the regional powerhouses of Japan and China. ASEAN has expanded to embrace China, is in negotiations with the Republic of Korea and India, and is conducting studies with Japan and Australia – New Zealand (CER). In addition, of course, there is much bilateral activity involving, among others, individual ASEAN countries, North-East Asian economies, India, Pakistan, Australia and New Zealand. Eventually, should ASEAN – China link up with CER, a Japan – Republic of Korea BTA and SAPTA, the gradual process will have resulted in the wider Asia grouping. Obviously, many impediments stand in the way of such an achievement, including the vexing issue of agricultural reforms. Some priorities for easing or removing these barriers and facilitating progress are discussed below.

C. Priorities for policymakers

The formation, extension and subsequent amalgamation of regional trade agreements can be facilitated through the harmonization of approaches in a number of areas as well as the adoption of what Harrigan (2006) referred to as "good practices".[2]

[2] These include product coverage, rules of origin, customs procedures, intellectual property protection, foreign direct investment, anti-dumping and dispute resolution, government procurement, competition and technical barriers to trade.

Implementation of WTO procedures (for example, those of the safeguards, SPS, TBT, rules of origin, trade facilitation and agricultural agreements) as well as various international standards will contribute to the harmonization of regional rules as well as with the rules of the multilateral system. Because regional agreements involve relatively few members, it may be possible to achieve deeper integration than is afforded by multilateral agreements.

The trade agreements in effect in Asia currently vary widely, as discussed in the previous chapters of this publication. They can differ, for example, in terms of product coverage (contents of positive, negative and exclusion lists), the depth of preferences, timelines, their use of non-tariff barriers such as tariff rate quotas and safeguards, and varying and complex rules of origin, SPS and TBT rules, all of which can be reflective of underlying protectionism.

1. Product coverage and preferences

The agreements studied here vary widely in terms of their agricultural product coverage, ranging from quite comprehensive coverage in some cases to very restrictive coverage in others. There is some evidence that sensitive sectors can be addressed in regional agreements, albeit sometimes with long transitional periods and further progress an obvious priority in existing as well as new agreements. Wider coverage of agricultural products, using negative rather than positive lists and with less diversity of excluded products across agreements, should also assist in the harmonization of agreements and their possible amalgamation.

AFTA provides an example of a step-by-step approach to agricultural inclusivity, defining temporary exclusion, sensitive and highly sensitive product lists. These products are being liberalized according to an agreed timetable and end-of-period tariffs. As a result, very few agricultural products are excluded from the common preferential tariff scheme, a degree of liberalization not considered possible a decade ago.

The Early Harvest Programme of the China – ASEAN agreement is another notable example of where substantial agricultural coverage has been negotiated – several ASEAN countries including Thailand have not excluded any products and, because of reciprocity, China will exactly match those concessions. Selected use of safeguard mechanisms, which could be harmonized if based on WTO safeguard rules and tariff rate quotas, may also ease problems associated with the inclusion of sensitive products if applied over a strictly transitional period.

Where current applied tariffs and preferences for any product differ widely between members and potential new members, or between agreements, reaching a harmonized set is no easy task. Nevertheless, solutions have been found within existing agreements that can be applied to wider amalgamations. These include different treatment of each country by stage of economic development, transitional safeguards (whose application may be restricted to least developed members) and, if meaningful progress is to be made in some cases, recognition of some countries' unique strategic or social objectives when attempting to harmonize negative lists.

2. Rules of origin

Rules of origin are used in regional trade agreements to determine eligibility for preferential treatment. They raise important issues in the trading of agricultural products, for example, because processed foods may combine raw materials from several countries. For agricultural products, the country of origin may be determined in terms of whether or not the product was wholly produced in the exporting country (especially applicable to raw agricultural materials), by a process criterion (substantial transformation) or the percentage of product content or value-added. Documentary evidence is usually required by the importer, and sometimes traceability. Problems arise when a country belongs to two or more regional agreements and the applicable rules are determined by the intended destination of trade. This complexity adds to compliance costs, which are exacerbated when the rules are not especially transparent, and the increased costs may be perceived by the exporter as outweighing the value of the preferences.

Rules of origin may lead to inefficiencies in production, when imported raw materials (such as for processed foods) are diverted from the lowest-cost supplier in order to help meet origin rules and therefore have the potential to discourage external sourcing. Regulations that do not permit cumulation, or permit only partial cumulation, will have a similar effect when they discourage purchases of inputs from low-cost countries within the regional agreement. Rules of origin may be more stringent for sensitive products, and may provide a mechanism for increasing protection levels through their use as trade policy instruments.

An earlier chapter in this book concludes that the low utilization by some Asian developing countries of duty-free agricultural preferential access could well be due to problems associated with rules of origin. A priority is to amend the rules in order to allow the preferences written into regional trade agreements to be more fully realized. This requires that:

(a) Attention is given to opportunities for harmonization and simplification of content requirements;

(b) The rules are symmetrical between importer and exporter;

(c) Rules of origin are set with recognition of the processing and technical capacity of exporters, and without reference to the political sensitivity of the product concerned;

(d) Certification and administration procedures are simplified, and extension of cumulation covers all members of the regional agreement.

Bonapace and Mikic (2005) describe how the proliferation of trade agreements is “spinning a complex RoO web” and its trade deflecting or restricting effects. They draw attention to APTA’s rules of origin, which are simple, general and liberal, with a flat rate of 45% of local value content, reduced to 35% for LDCs.

Harrigan and others (2006) go further by suggesting that all Asian bilateral and regional trade agreements allow cumulation across the Asian region to avoid the prospect

of discouraging efficient production networks that might raise trade costs rather than lowering them. Such an approach to cumulation would also assist in the enlargement and eventual amalgamation of regional agreements. Exporters could be offered a choice between alternative rules – an equivalence approach – such as maximum non-originating value or minimum originating value, since the costs of applying different rules may not be the same. Special and differential treatment might also be considered by applying different rules to the least developed members of the trade agreement in order to allow them to take better advantage of tariff preferences. Should WTO eventually adopt a harmonized set of rules of origin, countries within regional trade agreements could be encouraged to apply them in their own rule-making in order to assist in achieving harmonized rules, both within and between preferential trade agreements.

3. SPS and TBT regulations

Progress on regional harmonization of SPS issues is found in some of the agreements. Adherence to the WTO SPS (and TBT) agreements and international standards should encourage a harmonized approach to these issues within and across regions, hence facilitating expansion and future amalgamation of agreements. It will also contribute to harmonization with the multilateral system, and will contribute to reducing related frictions in internal trade. Thus, in the case of products imported from other member countries:

(a) Treatment should be no less favourably than domestic products;

(b) Food safety and health regulations should be based on scientific principles and risk assessments;

(c) Regulations should not deliberately create obstacles to trade between member countries, should be no more restrictive than necessary to achieve their objectives, and should be based on international standards where they exist to encourage harmonization;

(d) Equivalence should apply, and information on regulations and standards should be transparent.

Some progress in these aims is reflected in the various regional trade agreements to a greater or lesser extent. AFTA, for example, makes provision for harmonization, equivalence, mutual recognition and technical cooperation in respect of SPS measures (Organisation for Economic Co-operation and Development, 2004). Chapter VIII, however, notes that of the many non-tariff measures in the ASEAN economies, a large proportion are applied to agricultural products, especially in the form of technical measures or health and safety standards. In other cases, there is more to be done in terms of facilitating the application of the SPS provisions of the agreements, in monitoring compliance, and in assisting the development of SPS regulations and inspection procedures among member countries that do not have well-developed regulatory regimes. Developed country partners, in particular, can and do provide assistance in these areas, perhaps as part of SDT components of regional agreements. Although in some cases such assistance may be provided initially to facilitate imports from foreign-based subsidiaries, they serve as examples

of what can be done; the institutions and processes so created may be generally available, or may serve as models of good practice for all traders.

4. Domestic agricultural policies

Domestic policies that provide assistance to farmers, such as price support, subsidies on farm inputs or transport and marketing activities – together with the use of state trading monopolies in exporting or importing, and export subsidies – are utilized by some Asian economies. The levels of protection of agriculture in Japan and the Republic of Korea are among the highest in the world, although there has been some decline in those levels since the mid-1980s (Organisation for Economic Co-operation and Development, 2005). There is also evidence that the level of protection is rising in some of the developing Asian countries, or at least becoming less negative. Despite recent agricultural reforms, Indonesia's agriculture sector has been protected during the past 20 years, with an increase in protection in recent years of some commodities including rice and sugar (Thomas and Orden, 2004). In Viet Nam, most agriculture was effectively taxed up until the mid-1990s; since then, however, rice, sugar and the agricultural sector in aggregate have been increasingly protected (Nguyen and Grote, 2004). In China, a trend increase in protection is evident, while in India support is largely counter-cyclical and exhibited liberalization during the 1990s and protection more recently with increased importance placed on input subsidies (Mullen and others, 2004 and 2005). Although the levels of protection in South Asia or South-East Asia have not reached the scale of protection in North-East Asia, the trend towards increasing protection bears some resemblance to similar trends that occurred in Taiwan Province of China, the Republic of Korea and Japan earlier in the twentieth century (Anderson and Hayami, 1986) that led to the high level of protection that is observed today.

Domestic assistance programmes may cause friction in trade among member countries of a trade agreement through a perception of unfair competition, and may distort intraregional trade. In addition, the use of domestic support policies can reduce the potential gains from formation of a trade agreement. Where such support involves the use of administered output price schemes, or subsidies on tradeable inputs, the price changes signalled through tariff reductions may not be transmitted to producers; as a result, the efficient reallocation of resources will be impeded. The corollary to this has been observed in NAFTA (Burfisher and others, 1998), where domestic policy changes in the member countries have allowed the strengthening of market signals and increased farmers' responsiveness to changing prices that were the result of NAFTA implementation. In fact, domestic policy changes were found to have had a greater impact on the region's agriculture than did NAFTA. By encouraging greater specialization within each country, the changes also enhanced the trade creation effect, and diminished trade diversion caused by formation of the regional agreement. The quantitative work of Burfisher and others illustrated that NAFTA provided greater welfare gains under the new farm policies than under the old ones. If these results could be replicated in Asia, they would provide sound reasons for the reform of domestic farm policies within the region's trade agreements.

Yet none of the agreements discussed in the previous chapters or in RTAs in general (Organisation for Economic Co-operation and Development, 2004) address domestic support. An obvious reason is that domestic subsidies cannot be reduced preferentially, as production for internal trade is generally not separable from other farm production. For such commodities that might be primarily destined for intraregional markets, or for products that are intensively traded at the regional level, the trade distortive effects of domestic support could be addressed, and more deeply than is achieved through the WTO process. Caution would have to be exercised in order to ensure that such subsidy cuts were not reapplied to other farm products. At the least, arrangements could be considered that mandate consultation when domestic subsidies are considered to be affecting internal trade. Export subsidies (either explicit or implicit) are sometimes also not included in regional trade agreements, although unlike domestic subsidies, export incentives can be reduced or eliminated preferentially. Within Asia, they are not mentioned in the AFTA, ASEAN – China or Republic of Korea – Chile agreements; however, export subsidies are not permitted under the New Zealand-Singapore bilateral agreement (Organisation for Economic Co-operation and Development, 2004). They are also not addressed in the South Asia trade agreements. Other non-Asian trade agreements may prohibit export subsidies on internal trade, or (as in NAFTA) they may allow such subsidies to be applied on internal trade if the importing country agrees to them, or the importer is benefiting from subsidies from other countries.

5. Trade facilitation

Trade facilitation is the simplification and harmonization of international trade procedures, and the topic is clearly relevant to agricultural products, especially perishable items. Inefficiencies in border procedures and within handling and transport systems can result in opportunities created through the formation of regional trade agreements not being fully realized. The design and efficient implementation of trade facilitation measures throughout the Asian region is a priority if the potential benefits of increased trade flows and opportunities, lower trade transaction costs, increased government tariff revenues and encouragement of FDI are to be fully realized. The costs that result from poor trade facilitation may become magnified in the case of overlapping trade agreements when the applicable tariff preferences and classification, rules of origin and other trade regulations vary across regions. For example, consider a Sri Lankan exporter wishing to sell to India – does he/she do business under the SAPTA rules, those of the India – Lanka agreement, or those of APTA? Given the information and transaction costs imposed by the complexity of trading arrangements – which are magnified if facilitation mechanisms are weak – it is possible that the trader will find it least costly to trade under MFN conditions and hence will be denied the potential benefits of the regional agreements.

A number of studies have demonstrated substantial welfare gains from reductions in transaction costs, sometimes in excess of the potential gains from tariff liberalization. Past studies have clarified priorities for improvement in the Asian region. An Asia-Pacific investigation (APEC, 2000) that was restricted to border procedures, listed complexity and lack of information on customs regulations as well as problems with customs appeals

mechanisms as major concerns of traders. An ARTNeT study (ESCAP, 2006) identified a number of areas requiring improvement as a result of a private sector survey in five countries. These included improvement of information completeness and timely availability, elimination of corrupt official practices, improved coordination among official agencies, simplification of documentation requirements, and improvements related to customs classification and valuation procedures. The continuing work of the WTO trade facilitation negotiating group will contribute to some harmonization of approaches within Asian regional trade agreements, although the WTO negotiations cover only a subset of facilitation measures. For example, the group's work does not extend to the application of TBT and SPS measures or rules of origin, or to infrastructural issues.

6. Capacity-building, infrastructure and technical assistance

Numerous priorities are to be found in the areas of capacity-building and infrastructure development, with the objective of permitting fuller realization of the potential gains of trade liberalization. Infrastructure can be thought of as both physical capacity (transport networks and facilities, and communication networks, for example) and "soft" infrastructure, which includes the essential elements of trade facilitation. Overcoming infrastructural deficiencies in conjunction with relevant capacity-building in institutions, processes and people can be vital to regional trade integration and growth, and the alleviation of poverty (Asian Development Bank, 2005). By reducing trade and transport margins, it can intensify comparative advantages, raise productivity and improve both international terms of trade, together with those of rural households (Roland-Holst, 2006). The pro-poor benefits of infrastructure in the context of agricultural liberalization are especially relevant to the connection of rural farmers through transport and information networks and markets to ports – it will allow them to engage in new trading opportunities opened up through regional integration, not to mention in urban domestic markets where prosperity and demand may be enhanced through trade liberalization.

Relative to their trade with the rest of the world, there is comparatively little trade between the regions of South Asia, South-East Asia and China – North-East Asia. Infrastructural deficiencies contribute to this state of affairs, and overcoming them will assist wider integration across Asia and spread the benefits of growth. Trade agreements per se may not address infrastructural issues, but infrastructural development could be facilitated should the agreements extend to services and foreign investment. Where trade agreements include both developing and developed countries, the latter may agree to provide financial, technical and capacity-building assistance of various kinds. This is already occurring in some instances, such as the development of soft infrastructure to better allow developing country partners to achieve effective compliance with various regulations and standards, such as rules of origin and standards associated with TBT and SPS.

In addition to technical assistance and financing received through existing bilateral and international processes, consideration should be given to how the "aid for trade" mandate of the WTO Doha Round might work in concert with regional trade agreements in Asia. While specifics have yet to be decided, the aid for trade concept is to assist least

developed and other developing countries to benefit from trade liberalization, by providing aid for trade-facilitating capacity-building and trade-related infrastructure and adjustment through new funding provided by donors. The recommendations of the aid for trade task force (World Trade Organization, 2006) include strengthening the processes for identifying cross-border and regional needs, and requesting countries to consider the merits and mechanisms for establishing regional cooperation and coordination. Arrangements already in place for the study, negotiation and ongoing administration of regional trade agreements could provide the opportunity to play a prioritizing and coordination role with regard to aid for trade.

7. Research priorities

Several areas exist where the quantitative analysis of agricultural liberalization in the Asian and Pacific region can be enhanced and extended. In a dynamic setting, trade liberalization can encourage gains due to the impact of increased competition on firms and their productivity as well as the impacts of investment flows on economic performance. Dynamic CGE models attempt to include such phenomena, and can specify time-dependent behavioural models for producers and consumers as well as quantify an economy's transition path over time due to new investment and factor accumulation. Compared with static CGE models, the dynamic formulations promise a more complete analysis of the impacts of trade liberalization on economic growth and poverty reduction.

Interest is growing in the relationship between liberalization, income inequality and poverty reduction. Some evidence points to increased inequality resulting from economic liberalization, but this may or may not be accompanied by reductions in the prevalence of absolute poverty. Work on this aspect, using both CGE models and more detailed models of household behaviour and income distribution, is at an early stage and further progress would be of value in informing policy makers of possible poverty-reducing approaches to liberalization. Global trade models can demonstrate welfare gains from trade liberalization, but are usually silent about the adjustments costs that must be incurred in the process of realizing those gains. In developing countries especially, where labour, financial and information markets might be weak, and where underdeveloped infrastructure and education systems impose barriers to skills improvement and regional migration, these adjustment costs can fall disproportionately on the poorest people.

Yet another area for further research is how trade liberalization in the Asia-Pacific agricultural sector might have an impact on the natural environment. Will land be abandoned or farmed more or less intensively? What will be the results in terms of biodiversity, deforestation, water and air pollution, and water scarcity?

Finally, where trade models such as GTAP are used to simulate the creation of new or expanded regional trade arrangements, further efforts can be made to ensure that the model structure, parameters and policy data are relevant to the study. For example, despite the best efforts of database creators, the databases may not incorporate the appropriate base-year tariff data, which can be crucial to the evaluation of preferential trade arrangements.

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