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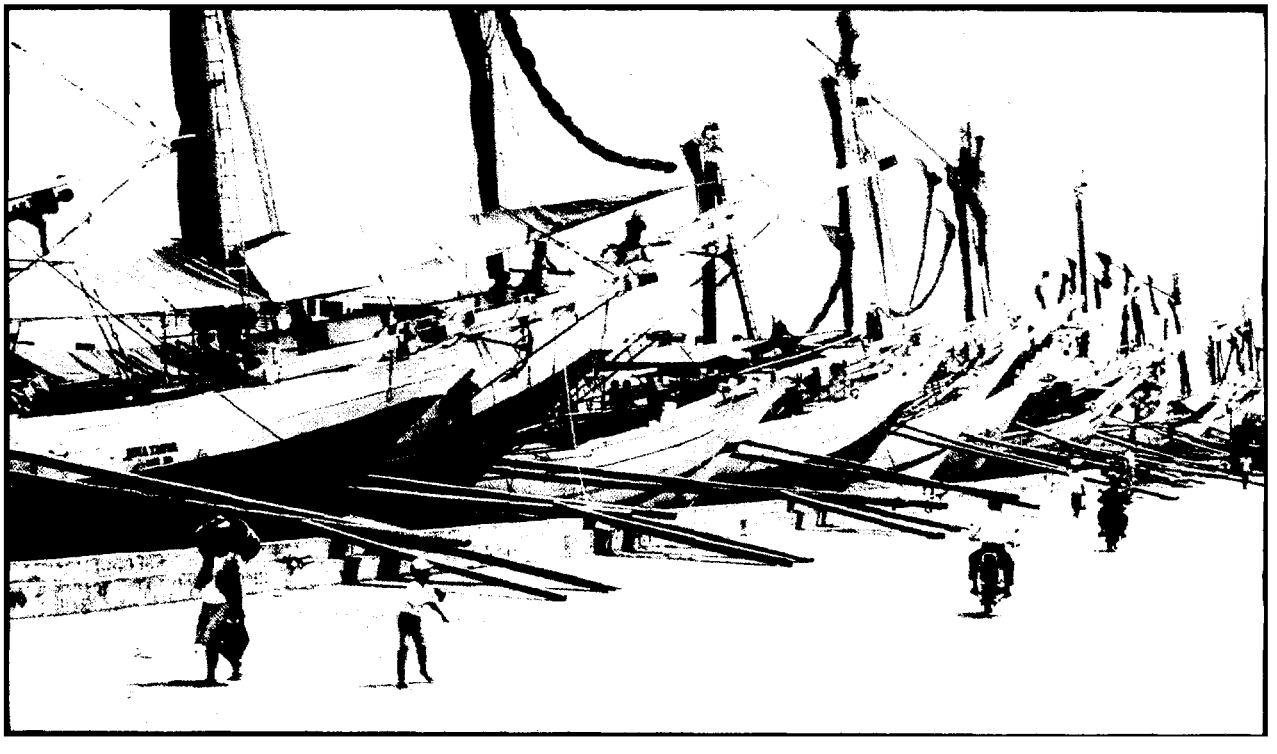
Free Trade Area Membership as a Stepping Stone to Development

The Case of ASEAN



Emiko Fukase
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Free Trade Area Membership as a Stepping Stone to Development

The Case of ASEAN

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Contents

Foreword

After decades of war and isolation, poverty is a critical problem in the new member countries of ASEAN-- Cambodia, the Lao PDR, Myanmar, and Vietnam. Policy makers in these countries have now recognized the need to take advantage of the opportunities created by trade in order to lift their people out of poverty, and have taken many of the hard steps needed to open their economies to the world. Accession to the ASEAN Free Trade Area (AFTA) is potentially a very important step in the development of these economies.

Membership in AFTA builds on the unilateral reforms taken by these countries since they began the process of transition. It will undoubtedly raise the efficiency of their firms by exposing them to greater competition. It has already provided the stimulus for policy reforms including the upgrading of customs procedures, reductions in protection, and the elimination of nontariff barriers, and has increased the credibility of these reforms.

However, as this report demonstrates, accession to AFTA is not a panacea. The trade liberalization that it involves is discriminatory, and will cause trade diversion—a tendency to buy imports from partner countries rather than from the lowest-cost suppliers. This trade diversion has both static and dynamic costs that are likely to be serious unless external trade barriers are reduced. It is therefore important that participation in AFTA is seen as a building block, rather than a stumbling block, on the path to broader trade reform and economic development.

The new wave of enthusiasm for regional arrangements in Asia-Pacific suggests one potential approach to broader reform. As the Bank's recent research report on *Trade Blocs* has demonstrated, many of the benefits of regional arrangements for developing countries are greater if the agreements include more advanced countries whose trade is more technology-intensive.

A key element of trade policy for ASEAN members is to continue with their own reforms to lower their barriers to trade with non-members of ASEAN. These reforms reduce the problem of trade diversion, as do trade barrier reductions agreed in WTO negotiations. For those countries that are not currently WTO members, accession to the WTO would provide an opportunity for them to use the multilateral process approach in improving their own trade regimes, and in pressing for improved market access in current and potential export markets.

This report is the product of close collaboration between the East Asia Region of the World Bank and the Bank's Development Research Group, and benefited greatly from feedback given by policy makers and analysts in the region. We believe that the study is greatly strengthened by the collaborative process used in its preparation and we look forward to similar benefits in other areas of our collaboration.

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Abstract

This study investigates the economic impacts of accession to the ASEAN Free Trade Area (AFTA) by the new member countries of Cambodia, the Lao PDR, Myanmar, and Vietnam. The trade policies of these countries are examined, and a series of quantitative analyses were undertaken to evaluate the impacts of accession. The results showed that the static impacts of reducing tariffs against ASEAN members are beneficial, although the magnitude of the net gains is diminished by the trade diversion resulting from the discriminatory nature of the reforms. The binding commitments on protection rates under the AFTA plan provide an important initial step to more broader and more beneficial trade reforms. The study focuses on some of the key country-specific policy challenges associated with trade liberalization-- such as declining tariff revenues in Cambodia, and the negative impacts on sensitive domestic industries in Vietnam. The study recommends that accession to AFTA be viewed as an important transitional step in the broader process of trade reform and institutional development needed for successful development and poverty alleviation.

Acknowledgments

This volume is produced as a part of the ASEAN Free Trade Area (AFTA) Expansion Project which was organized jointly by the Development Research Group and by the East Asia Region in the World Bank. The project is aimed to analyze the economic impacts of the regional arrangement for the new member countries, Cambodia, the Lao PDR, Myanmar, and Vietnam. We would particularly like to thank: Alan Winters and Michael Walton for their help in initiating this project; Richard Newfarmer, Victoria Kwakwa and Christina Wood for managing and coordinating the project; Linda Schneider, Kazi Matin and Duc Minh Pham for their support during missions; Guy Darlan, Stefan Koeberle, Roland Peters, Su Yong Song and Thang-Long Ton for their support and generous sharing of information; and Aban Daruwala, Rebecca Martin, Vu Tran Phuong Anh, Lili Tabada and Robert Simms for logistical support.

The chapters in this volume are based on four country reports and one general paper on dynamic issues, which are in turn based on data and information obtained during missions to the Lao PDR (July, 1997), Vietnam (August, 1998), and Cambodia (July 1997/April, 1999 and January 2000). The draft reports for these countries were discussed with the government officials during a dissemination mission in April, 1999. We are extremely grateful for the time and cooperation of many government officials, without which this project would have been impossible. We would like to especially thank the following officials: Sayphet Aphayvanh and Somchith Inthamith in the Lao PDR for providing us with the data and helping us understanding of the trade regimes; Aun Porn Moniroth for his help in coordinating our mission in April, 1999, and Kun Nhem for extremely useful data on Cambodia; and Nguyen Van Chi and Vu Chi Long for reviewing an earlier version of the Vietnam paper.

We would also like to express our gratitude to the ASEAN Secretariat, and in particular to Suthad Setboonsarng, Robert R. Teh Jr. and their staff for their invaluable cooperation. Thanks also go to the following individuals and organizations for sharing their expertise and findings: Neal Forster, Frank Flatters, and Adam McCarty of the UNDP; Bob Warner of the Centre for International Economics; James Robertson of the Services Group and International Economics-Washington; Mya Than and Carolyn L Gates of the Institute of Southeast Asian Studies (ISEAS); Atsushi Masuda and Elizabeth Sumar of the IMF.

Drafts of the papers were presented at a Trade Workshop organized by the Institute of Economics and Vietnam Resident Mission in Hanoi in April, 1999; a Trade Workshop organized by Vietnam Resident Mission and the Economic Institute in Ho Chi Minh City in April, 1999; a seminar at the ASEAN Secretariat, Jakarta in April, 1999; and a World Bank Trade Seminar in June, 1999. We benefited substantially from the insightful comments made by the discussants and participants at the seminars including: Pham Xuan Ai, Nguyen Thi Canh, Nguyen Truong Son, Maurice Schiff, Vu Quoc Huy, Kazi Matin, Marcus Noland, Isidro Soloaga, David Tarr, Nguyen Thang, Ha Huy Thanh, Vo Tri Thanh, Vo Thanh Thu, Ha Huy Tuan, and Alan Winters. The remaining errors are those of the authors alone and the views expressed in this volume should not be attributed to the World Bank.

Abbreviations and Acronyms

AFTA	ASEAN Free Trade Area
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South East Asian Nations
CEPT	Common Effective Preferential Tariff
CES	Constant Elasticity of Substitution
CET	Constant Elasticity of Transformation
CGE	Computable General Equilibrium
CMEA	Council for Mutual Economic Assistance
ERP	Effective Rate of Protection
EU	European Union
EV	Equivalent Variation
FDI	Foreign Direct Investment
GATT	General Agreement on Tariffs and Trade
GEL	General Exceptions List
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
HS	Harmonized Commodity Description and Coding System
GDP	Gross Domestic Product
IMF	International Monetary Fund
MFA	Multifibre Agreement
MFN	Most Favored Nation
NAFTA	North American Free Trade Agreement
NEM	New Economic Mechanism
NIE	Newly Industrialized Economies
NTB	Non-Tariff Barrier
OECD	Organization for Economic Cooperation and Development
PTA	Preferential Trading Agreement
QR	Quantitative Restrictions
R&D	Research and Development
RIA	Regional Integration Arrangement
SITC	Standard International Trade Classification
SL	Sensitive List
SOE	State-Owned Enterprise
TEL	Temporary Exclusion List
TFP	Total Factor Productivity
UNCTAD	United Nations Conference for Trade and Development
UNDP	United Nations Development Program
VAT	Value Added Tax
WCO	World Customs Organization
WTO	World Trade Organization

1 Introduction and Summary

The creation of the ASEAN Free Trade Area (AFTA) in 1992 and ASEAN enlargement to the current 10 members were two major achievements of ASEAN in the 1990s. The Association of Southeast Asian Nations (ASEAN)[1] was founded in 1967 and initially focussed primarily on security concerns and political cooperation. Economic integration objectives were relatively modest prior to 1992, although the Preferential Trading Agreement (PTA) and some investment cooperation existed. The end of the Cold War brought the resolution of regional conflicts in Southeast Asia, and this in turn led a shift of ASEAN focus toward more economic cooperation. The resurgence of regionalism since the late 1980s further spurred this direction. The new political and economic environment set the stage for Vietnam's ASEAN accession in 1995 followed by the full memberships of the Lao PDR and Myanmar in 1997. The admission of Cambodia into ASEAN on 30 April 1999 as the 10th ASEAN member marked the culmination of ASEAN's efforts to achieve regional cohesion. Despite these changes, the new member countries remain very low income economies after decades of war and subsequent isolations. Joining a regional group with their higher-income ASEAN predecessors may be an important stepping stone in the development process, allowing them to begin their long-delayed process of catching up with their neighbors and of reentering the world economy.

Since the second half of the 1980s, the new member countries have made significant initial progress in undertaking policy reforms toward market-oriented economies and unilaterally liberalized their trade and investment policies. Vietnam embarked on comprehensive economic reform (*doi moi*) in 1986 and the Lao PDR followed suit introducing the New Economic Mechanism (NEM). Myanmar began to reform its economic policies and started to take steps during the late 1980s to open its economy and increase the role of markets. The end of the Cold War led to a UN-sponsored election in 1993 in Cambodia and it implemented a bold plan for reconstruction and rehabilitation. The accession to ASEAN by the new member countries can be seen as a logical step in accelerating their integration into the Southeast Asian and the global economy. With ASEAN accession, the member countries are required to participate fully the ASEAN Trade Area (AFTA). Binding liberalization schedules with AFTA can be a useful tool for maintaining an outward-looking strategy given the temptation to slow reform efforts in the face of economic shocks.

This volume brings together a series of studies produced under the AFTA Expansion Project which is in turn a joint project, a cooperative venture of the Development Research Group and the East Asia Region of the World Bank. This Chapter introduces and summarizes the Chapters that follow. Chapter 2 presents an overview of the mechanism of AFTA and theoretical framework used to analyze it. Individual country papers in Chapters 3 to 6 are aimed to provide quantitative assessments on the *static* costs and benefits of the regional arrangement. Chapter 7 adopts a different approach by providing a survey on the potentially important *dynamic* benefits from ASEAN membership.

After assessing the trade regimes in each country, we use a set of Computable General Equilibrium (CGE) models to provide a quantitative assessment of the effects of tariff reductions under AFTA both by new member countries and their ASEAN partners. We deal with three broad themes. The first is the *trade creation* and *trade diversion* impacts that have been central to the evolution of

[1] The original members were Indonesia, Malaysia, Singapore, the Philippines, and Thailand. Brunei joined in 1984.

discriminatory regional integration agreements since the seminal work of Viner (1950). Whereas AFTA creates additional trade with the ASEAN partner countries and this is clearly welfare improving (trade creation), the discriminatory nature of regional integration bears the risk that the trade may be diverted from the most efficient suppliers in non-member countries by less efficient producers in member countries (trade diversion). In dealing with this issue, we *quantify* whether or not AFTA is trade creating or diverting. The second theme is the specific challenges and policy adjustments required in each country. These include dealing with declines in tariff revenues in Cambodia and pressures on import substituting industries in Vietnam. Given the high concentration of the Lao PDR's exports on a few commodities, what happens to the terms-of-trade of these commodities is another important question. In Chapters 3-6, we analyze country-specific problems related to AFTA and trade policy in general. The third theme is the implications of the country's policy towards non-member countries. This study investigates the possibility of using AFTA as a "stepping stone" for further liberalization, i.e. by extending AFTA commitments to the rest of the world.

Given the second best nature of Regional Integration Arrangements (RIAs), theory alone cannot determine whether they are beneficial. However, a Computable General Equilibrium (CGE) framework is suitable for evaluating the impacts of policy choices by integrating economies and their partner countries. The CGE model has become perhaps the most important tool used to quantify the costs and the benefits of RIAs. CGE models have made two distinct contributions to the evaluation of RIAs (Baldwin and Venables, 1995). First, they have been used to provide quantitative estimates of the effects of actual or proposed RIAs. Second, used as "theory with numbers" by Baldwin and Venables, the models can help us to understand the theoretical interactions of key economic variables. Although the results of CGE models are sensitive to key parameter values and the specification of functional forms, the order of magnitudes of different policies predicted by models of RIAs are frequently quite robust. This in turn allows us to be better informed about the potential impacts of RIAs and provides us with a useful ingredient for better policy formulation.

Two recent studies by DeRosa (1995) and Lewis and Robinson (1996) investigated the effects of AFTA for the ASEAN-5 using CGE models and found AFTA to be trade creating for these members. However, the AFTA plan was found to yield generally only small improvements to economic welfare in the ASEAN countries, except in Singapore and to a lesser extent in Malaysia. These two highest-income ASEAN countries benefit from the diversion of trade in other ASEAN countries, and end up supplying the largest proportion of the increased intra-regional demand for manufactures (DeRosa, 1995). Both studies report that alternative scenarios in which the trade regimes of the ASEAN countries are liberalized on an MFN basis rather than a preferential basis yield substantially larger gains in trade and economic welfare.

The application of CGE models to the new member countries has been seriously constrained by data availability. We use different types of CGE models depending on the availability of data and parameter values. For Vietnam, a set of data on production structure, trade, and protection is available from the Global Trade Analysis Project (GTAP), and we use this model which is a relatively standard multi-region and multi-sector general equilibrium model. For the Lao PDR and Cambodia, data on domestic production structure were not available. Thus, we created small single-country models with only one production sector and highly disaggregated tradable sectors. For Myanmar, data availability was extremely limited. To analyze the key impacts of discriminatory trade liberalization, we used a highly stylized EXCEL® spreadsheet model.

We start our analyses in Chapter 2 by overviewing the mechanism of the Common Effective Preferential Tariff (CEPT) Scheme which is the key instrument for determining the scope and speed of liberalization. A unique feature of the CEPT is that the concessions are granted on a *reciprocal*, product by product, basis. Since concessions are received from partners only for the items that the country is itself liberalizing, the member countries have an incentive to include as many tariff lines as possible in their liberalization schemes. The process of implementing AFTA involves a number of technical changes such as harmonizing Customs nomenclatures based on the Harmonized Commodity Description and Coding System (HS) and implementing the GATT Valuation Agreement. Also in Chapter 2, we use a diagrammatic approach to illustrate the framework used to evaluate the AFTA/CEPT. We decompose the sources of welfare change into three components: 1. welfare improvements resulting from *trade creation*; 2. welfare losses resulting from *trade diversion*, and 3. welfare gains resulting from *terms-of-trade* improvements in the country's exports. We show that the net effect of AFTA depends on the simultaneous changes in these three components and discuss what determines the magnitude of these changes. The key variables include: size, openness and factor endowments; trade patterns and protection structure of integrating and partner countries; and key parameter values such as the elasticity of substitution between domestic goods and imports and between imports from different sources.

The Lao PDR is a small land-locked country whose economy is highly dependent on neighboring ASEAN countries. Chapter 3 investigates the effects of AFTA using a small single-country general equilibrium model. Given the very limited information available to us on the domestic production structure, we developed a model incorporating only a single production sector. Because of the focus of the study on trade and given the availability of detailed trade and protection data, we considered relatively disaggregated traded-goods sectors. The simulation results suggested that accession to AFTA will be economically beneficial. On the import side, the effect of reducing tariffs against ASEAN is trade creating rather than trade diverting. This reflects the high share of ASEAN countries in the Lao PDR's imports and the slightly higher initial tariff rates levied on ASEAN goods. On the export side, the export structure of the Lao PDR is highly concentrated in a very few commodities shipped to a limited number of export destinations, hence its economy is sensitive to the external shocks to them. We found that AFTA has positive effects on the Lao PDR's most important export commodities, namely wood products to ASEAN and garments shipped to the EU. Given a high initial volume of wood products shipped to ASEAN, the Lao PDR is likely to benefit from the terms-of-trade improvement resulting from ASEAN partners' concessions. One simulation result shows that the benefits of retaining the Generalized System of Preferences (GSP) status with the EU are significant. ASEAN membership provides an indirect benefit in this regard, allowing *regional cumulation of origin* across ASEAN, rather applying these conditions on a single-country basis, and thereby, facilitating retention of GSP status. This provision is especially helpful for the Lao PDR's garment industry, which is highly dependent on imports of inputs from Thailand. In addition, the model results showed that AFTA is likely to help stimulate exports in such sectors as processed food, animal products, and some labor-intensive industries, reducing the Lao PDR's vulnerability to shocks associated with its current reliance on a small number of exports.

Chapter 4 explores the implications for Cambodia of its recent entry into the ASEAN Free Trade Area. The analysis takes into account the special features of Cambodia's trade regime, including its heavy reliance on Customs duties as a source of revenue, and its reliance on a relatively small set of products for the bulk of these revenues. In 1998, Cambodia derived 41 percent of its revenues (56 percent of its tax revenues) from customs duties, with two thirds of these levied on imports from ASEAN countries. Quantitative analysis is undertaken using a small model of the Cambodian

economy designed to highlight the trade creation and trade diversion consequences of this preferential liberalization as well as its fiscal implications. We find that the static benefits of a likely AFTA liberalization package are relatively small because trade diversion offsets the benefits of trade creation and the terms-of-trade gains from improved access to partner markets are limited. Since Cambodia excluded some goods that are important sources of tariff revenues, such as oil products and beer, from the initial AFTA package, the effects on tariff revenues are relatively small. While these exclusions help preserve revenues in the short term, this approach creates strong incentives for inefficient domestic production of these goods that will reduce revenue collections over the medium term. More ambitious, broader, liberalization that builds on AFTA entry yields substantially larger welfare gains, but will require greater attention to the development of alternative revenue sources. The introduction of a Value Added Tax (VAT) in January 1999 means that both domestic production and imports of these goods will continue to generate some revenues despite reductions in tariff rates. For Cambodia, entry into AFTA has clearly been important in stimulating development of new revenue sources such as VAT and will create a need for strengthening other tax bases in the future.

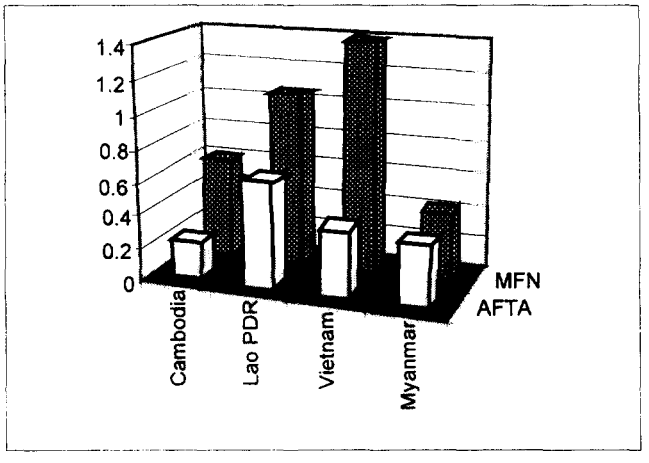
Whereas further integration into the international trading system is clearly beneficial for Vietnam's economic development, the effects of liberalization on certain domestic industries remain a controversial issue among Vietnam's policy makers. Chapter 5 uses a multi-regional, multi-sector computable general equilibrium (CGE) model to evaluate how different trade liberalization policies of Vietnam and its main trading partners affect Vietnam's welfare, taking into account the simultaneous impacts on trade, output, and industrial structure. We find that the static economy-wide effects of AFTA liberalization are relatively small, but its welfare increases substantially if Vietnam extends its AFTA commitments to all of its trading partners on a most-favored-nation (MFN) basis. The small benefit from regional liberalization is partly attributable to the initially small share of Vietnam's trade with ASEAN. Further, since most of Vietnam's exports to ASEAN are shipped to Singapore whose protection is close to zero, the gains from improved access to partner markets are likely to be limited. In contrast, Vietnam stands to gain substantially from MFN liberalization because of its relatively high initial protection, the elimination of trade diversion, and more efficient allocation of resources among Vietnam's industries. Chapter 5 explores how trade liberalizations would affect Vietnam's industries in different ways. AFTA appears to benefit Vietnam's agriculture by giving it better access to ASEAN markets. Broader unilateral liberalization beyond AFTA is likely to shift labor from agriculture and certain import competing activities toward relatively labor-intensive manufacturing. These sectors conform to Vietnam's current comparative advantage and taking this step now seems a promising way to facilitate the subsequent development of competitive firms in more capital and skill intensive sectors. By contrast, more intense import competition may lead some import substitution industries (now dependent on protection) to contract. The higher level of welfare resulting from more comprehensive liberalization implies that the sectoral protection currently given to capital-intensive and "strategic" industries is costing Vietnam's economy as a whole, imposing substantial implicit taxes on the rest of the economy.

Assessment of Myanmar's accession to AFTA is constrained by data availability. Chapter 6 uses a simple EXCEL model which was developed to provide an initial indication of whether the benefits of AFTA accession might outweigh their costs. The model is deliberately minimalist in its data and software requirements to allow it to be implemented in countries with extremely limited and poor data. Its structure, however, allows it to provide both numerical estimates and insights into the sources of benefits and costs from participation. Myanmar's current tariff protection appears to be relatively low, with a simple average rate of 5.8 percent submitted to the WTO. A stylized

simulation suggests that AFTA accession is likely to be economically beneficial. However, the magnitude of the gains is small, reflecting the low initial tariff rates. Further studies are required to assess the full effects of AFTA since it seems likely that more important trade barriers exist in the form of non-tariff barriers such as the dual exchange rate system and various government controls.

The static welfare benefits from simulation results of AFTA and MFN liberalizations for the four new member countries are summarized in Figure 1.1.[2]

Figure 1.1 Percentage Change in Real Income AFTA vs. MFN



Note: The figures of AFTA are based on the Sensitive List (SL) liberalization.
Source: Chapters 3-6.

All the simulation results showed that the economic impacts of AFTA are positive for all of the new member countries, although they are typically relatively small. The benefits increase if the new member countries extend AFTA commitments on a non-discriminatory basis. This overall conclusion is consistent with the findings of DeRosa (1995) and Lewis and Robinson (1996) for the ASEAN-5 countries. These results suggest that AFTA may be used as a useful stepping stone to further liberalization because it exposes domestic industry to greater competition, and creates a situation where there are substantial benefits from reducing the trade diversion associated with discriminatory liberalization. Encouragingly, both Indonesia and the Philippines have announced their intention to generalize their AFTA concessions as a way to advance their unilateral MFN-based liberalization policies (APEC, 1996).

In a context where the *static* welfare benefits of regional integration are generally small, Chapter 7 discusses the possible *dynamic* benefits of economic integration for the new members of ASEAN. Dynamics were defined as anything that affects a country's rate of economic growth over the medium to long term (Winters, 1996). Direct evidence on regional integration and growth is weak, but three indirect channels are possible. Firstly, openness increases access to foreign knowledge, which could help productivity growth. Secondly, trade liberalization generally increases the returns to capital, and so could stimulate investment. Thirdly, binding liberalization under AFTA might help "lock-in" and accelerate liberal economic reforms. These gains are not automatic, however. Discriminatory liberalization will switch imports from sources with high stocks of knowledge

[2] The welfare effects are not strictly comparable due to the differences in the specifications of the models and those in the base years.

towards ASEAN countries, which have lower stocks, and so may lower productivity growth. We term this "dynamic" trade diversion. In addition, local absorptive capabilities must be developed to benefit fully from technology transfer. Finally, we recommend extending AFTA commitments on an MFN basis in order to avoid both static and dynamic problems of trade diversion.

2 Preferential Trade Liberalization under the ASEAN Free Trade Area (AFTA)–Overview

The creation of the ASEAN Trade Area (AFTA) in 1992 was spurred by the resurgence of regionalism since 1990.[3] Unlike the former ASEAN Preferential Trading Arrangement (PTA) whose impacts were limited because of narrow commodity coverage and small margins of preference, AFTA covers, in principle, all industrial and agricultural goods. ASEAN countries have made substantial commitments to the AFTA scheme. With the recent accession of the new member countries, ASEAN 10 creates a diverse group with a combined GDP of $675 billion with 487 million people. AFTA remains the only major Free Trade Area (FTA)[4] in the East Asia Region and ASEAN as a group plays an important role in the Asia-Pacific region and in multilateral fora such as the WTO.

This chapter provides an overview of the mechanism of AFTA and the theoretical framework used to analyze preferential liberalization. The impacts of regionalism are frequently dependent upon the size of the economy and the economic structure of the integrating and partner countries. Thus, section 2.1 reviews the key economic indicators of ASEAN 10 countries. Section 2.2 analyses the mechanism of the Common Effective Preferential Tariff (CEPT) Scheme, followed by the theory of preferential liberalization, and the trade pattern and protection structure of the ASEAN countries.

2.1 Economic Structure and Comparative Advantage

Table 2.1 presents some key economic indicators for the ASEAN countries. ASEAN is a diverse group with a combined GDP in 1997 of $675 billion and a population of 487 million -- 2.3 percent of world GDP and 8.4 percent of world population respectively (World Bank, 1999a). ASEAN consists of countries at different stages of development. Singapore belongs to the "high-income" group with GDP per capita of $32,106 in 1997. Malaysia was classified as "upper-middle income" with a per capita income of $4,689, while Thailand, the Philippines, and Indonesia belonged to the "lower-middle income" group with per capita incomes of $2,565, $1,141 and $1,091 respectively. The new member countries, -Lao PDR, Cambodia, Myanmar,[5] and Vietnam are classified as "low-income" countries with per capita incomes of only $351 (Lao PDR), $304 (Cambodia), and $331 (Vietnam) (World Bank, 1999a).

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[3] Of the 194 agreements notified to the GATT/WTO, 87 were since 1990 (World Bank, 2000b). This includes the formation of North American Free Trade Area (NAFTA) in 1994 and the creation of the European Union (EU) in 1995.

[4] Regional integration arrangements are usually considered with reference to four degrees of economic integration: free trade area, customs union, common market, and economic union. Under a free-trade area, members eliminate tariffs among themselves but keep their own tariffs against the outside world. Under a Customs Union, members not only eliminate tariffs among themselves but also form a common tariff against the outside world. A common market is a customs union in which unrestricted movement of labor and possibly other primary factors of production is permitted, and an economic union is a common market in which fiscal, monetary, and other major economic policies are harmonized or otherwise closely coordinated.

Table 2.1 Key Economic Indicators of ASEAN Countries

	GDP 1997	Average Annual Growth Rate 1990-97	Population	GDP Per Capita	Imports 1997	Exports 1997	Openness Index	Arable Land 1994-1996	Gross Enrollment Ratio of Secondary Education
	($ mil.)	(%)	(mil.)	($)	($ mil.)	($ mil.)	(%)	(hectares per capita)	(%)
Indonesia	214995	7.5	197	1091	62830	63238	58.6	0.09	48
Cambodia	3044	5.5	10	304	1252	896	70.6	0.37	29
Lao PDR	1753	6.7	5	351	715	417	64.6	0.17	29
Malaysia	98473	8.6	21	4689	91522	92897	187.3	0.09	61
Myanmar	Na	6.3	44	na	2415	1187	na	0.22	30
Philippines	82157	3.3	72	1141	50477	40365	110.6	0.07	77
Singapore	96319	8.5	3	32106	144168	156252	311.9	0	67
Thailand	153909	7.4	60	2565	72437	72415	94.1	0.29	56
Vietnam	24848	8.6	75	331	13465	11485	100.4	0.07	47
Total	675498		487		439281	439152			

Source: World Bank, *World Development Indicators 1999.*

The economies of Cambodia and the Lao PDR are very small, representing only 0.5 percent and 0.3 percent of ASEAN respectively. Although Vietnam with 75 million people is the second most populous ASEAN member after Indonesia, its share of GDP in ASEAN remains relatively small, at only 3.7 percent. The small sizes of their economies imply that the new member countries have little power to influence their terms-of-trade and suggest that there may be opportunities for them to benefit from economies of scale by accessing larger markets.

The ASEAN countries are relatively open to international trade. Openness Indexes, defined as imports plus exports relative to GDP, demonstrate that the new member countries are impressively open, with openness ratios of 70.6 percent in Cambodia, 64.6 percent in the Lao PDR, and 100.4 percent in Vietnam. Relatively open trade and investment regimes[6] are widely seen as one of the causes of faster growth in East Asia (World Bank, 1993). As shown in Table 2.1, the ASEAN countries had high economic growth rates during the period 1990 to 1997. Although most of these economies were hard-hit during the recent Asian financial crisis, the recovery in the region is now well under way (World Bank, 2000a).

The new member countries are generally well endowed with arable land, although Vietnam's arable land endowment is low at 0.07 hectares per capita. For all of the new members except Vietnam, secondary school enrolment rates are much lower than in the initial members.

[5] Myanmar's GDP in dollar terms varies according to sources because of the multiple exchange rate system.

[6] The share of ASEAN-5 in world trade increased from 3.5 percent in 1985 to 6.2 percent in 1995 (IMF, 1999a).

Revealed Comparative Advantage (RCA) for the ASEAN 10

The trade structure of each country is determined by its resource endowments, technology, the market opportunities available to it, and its policy regime. Revealed Comparative Advantage (RCA) can be a useful summary indicator of the combined effects of these determinants of its trade patterns (Balassa, 1965). Table 2.2A and Table 2.2B present RCAs for the 10 ASEAN countries for the average of 1990-1995 and 1997 respectively. Following Balassa, "Revealed" Comparative Advantage is defined as the share of a product group in one country's exports divided by that product group's share in world trade.

$RCA_{ij} = (x_{ij} / x_{wj}) / (\sum_j x_{ij} / \sum_j x_{wj})$,

where x_{ij} is country i's export of commodity j;

x_{wj} is world's exports of commodity j;

$\sum x_{ij}$ is country i's total exports;

$\sum x_{wj}$ is the world's total exports.

Because it is normalized to remove the effects of price fluctuations and the importance of particular commodities in world markets, this index is preferable to the simple share of a group of products in a country's total exports. It allows clearer comparisons between countries at any time, and allows changes in comparative advantage to be tracked over time. The measure reflects the underlying comparative advantage of the country in particular commodities as determined by technology and factor endowments, modified by government policies designed to draw resources into favored sectors. A value of greater than 1 is broadly suggestive of a revealed comparative advantage in sector j. In the analysis, the RCA indexes of ASEAN 10 exports were generally computed at the SITC 2-digit level although some important items are reported at the 3-digit level.

The RCA indexes reveal that the new members' comparative advantage currently lies mainly in primary commodities and in some labor-intensive manufacturing products such as clothing. The Lao PDR's exports are highly concentrated in wood, coffee and clothing. Similarly, Cambodia's main exports are wood, rubber and clothing. Vietnam's export structure appears to be more diversified. Myanmar seems to have a comparative advantage in agricultural commodities.

The export structure of the new members appears to be broadly complementary with higher-income ASEAN members such as Singapore and Malaysia. However, the new members are likely to compete with ASEAN countries in certain commodities. For instance, Indonesia, Malaysia, Cambodia and Thailand are the leading exporters of rubber and the Lao PDR, Malaysia and Myanmar are major exporters in wood. Labor-intensive manufacturing commodities such as clothing remain important export categories for low-middle income ASEAN countries.

In comparing RCAs between the average for the period 1990-1995 and 1997, some clear changes are evident. For instance, exports of *footwear* (SITC85) had become important in the Lao PDR, Cambodia and Myanmar by 1997 whereas they had been very small in the first half of the 1990s. The RCA index for footwear in Vietnam increased from 4.0 (1990-95 average) to 18.7 in 1997. Some changes in RCA reflect the external shocks. For instance, a significant

increase in Cambodia's RCA of *clothing* (SITC 84) from 4.8 to 14.7 reflects the United States' granting it most-favored-nation (MFN) status whereas the decrease in RCA of *wood, lumber and cork* (SITC 24) reflects the decline in demand due to the regional financial crises. Finally, RCA can be influenced by government policy. For example, rice was one of Myanmar's leading export commodities in the first half of the 1990's, with an RCA of 27.6. However, Myanmar's RCA for rice decreased substantially in 1997 to 1.3, reflecting the government's use of controls on its rice exports (see Chapter 6).

2.2 Nature of the ASEAN Free Trade Area (AFTA)

2.2.1 Common Effective Preferential Tariff (CEPT) Scheme

The ASEAN Free Trade Area (AFTA) was formally established in 1992 to realize an FTA within the 15 years beginning 1 January 1993. The Common Effective Preferential Tariff (CEPT) scheme was designed to bring down tariffs on all manufactured and processed agricultural products to 0-5 percent within a 15 year time-frame. In September 1994, during the 26th ASEAN Economic Ministers (AEM) Meeting, the time frame was shortened from the original fifteen years to ten years, with the aim of achieving the AFTA goals by the year 2003.[7] Another important accomplishment of that meeting was the inclusion of all unprocessed agricultural products in the CEPT scheme.

Under the CEPT scheme, four lists, — the Inclusion List (IL), the Temporary Exclusion List (TEL), the Sensitive List (SL), and the General Exceptions List (GEL), — are used as key instruments to determine the pace and scope of liberalization. The IL consists of the items subject to tariff reductions immediately to bring them down to the range of 0-5 percent by the year 2003. During the 6th ASEAN Summit in December 1998, the six original ASEAN members agreed to accelerate the implementation of AFTA by one year from 2003 to 2002 for most of the items in the Inclusion List.[8] The items in the TEL were initially excluded from tariff reductions, but these items are to be transferred to the IL by 2000 in 5 equal installments beginning from 1996 and then reduced to 0-5 percent by 2002. The SL is the list of unprocessed agricultural products to be phased into the IL between 2001 and 2003 and to be in the 0-5 percent range by 2010. In principle, the GEL is intended to consist only of items that satisfy Article XX of the GATT (ASEAN Secretariat 1993a). Such goods may be permanently excluded from tariff reductions for reasons such as national security, protection of public morals, protection of human, animal and plant life and health, or the protection of articles of artistic, historic or archaeological value.

A key feature of the CEPT is that the concessions are granted on a reciprocal, product-by-product basis. There are three conditions for a product to be eligible for concessions under the CEPT. 1) The product has to be included in the IL of both the importing and exporting countries; 2) To receive all concessions, a country must have a CEPT tariff of 20 percent or below on that product. If the tariff on a product that a country has included in the CEPT is above 20 percent, then it is eligible for concessions only in those member countries that also impose a

[7] By 2006 for Vietnam, 2008 for the Lao PDR and Myanmar, and 2010 for Cambodia. The difference in time frames reflects difference in their accession dates, with the same time period provided for their tariff reductions.

[8] www.aseansec.org

CEPT rate that is higher than 20 percent; 3) it has to satisfy the local content requirement of 40 percent. In the short-run, the reciprocal nature of the CEPT scheme provides incentives for member countries to include commodities they wish to export in the IL and to reduce tariffs below 20 percent to receive concessions. Following inclusion, all tariffs must be phased down to the 0 to 5 percent range.

Another important feature of the CEPT is that member countries are required to eliminate quantitative restrictions on products on which they receive CEPT concessions, and eliminate other non-tariff barriers within five years after receiving concessions. Based on the UNCTAD classification of NTBs, a working definition of NTBs covers para-tariff measures, price control measures, finance measures, monopolistic measures, and technical measures (ASEAN Secretariat, 1995).

2.2.2 The Liberalization Schedules of ASEAN Member Countries

In contrast with the former Preferential Trading Arrangement (PTA) scheme, the AFTA/CEPT scheme has achieved substantial liberalization between ASEAN members. Table 2.3 shows the number of tariff lines that the member countries had included in each list by 1998.

Table 2.3 the ASEAN-9 CEPT Package, 1998

	IL		TEL		SL		GEL		
Country	Tariff Lines	Share (%)	Tariff Lines	Share (%)	Tariff Lines	Share (%)	Tariff Lines	Share (%)	Total
Brunei	6105	94.0	135	2.1	14	0.2	239	3.7	6493
Indonesia	6622	91.8	545	7.6	4	0.1	45	0.6	7216
Lao PDR	533	15.0	2831	79.7	96	2.7	91	2.6	3551
Malaysia	8648	95.1	276	3.0	104	1.1	63	0.7	9091
Myanmar	2356	43.1	2987	54.6	21	0.4	108	2.0	5472
Philippines	5221	91.6	385	6.8	68	1.2	28	0.5	5702
Singapore	5739	98.0	0	0.0	0	0.0	120	2.0	5859
Thailand	9040	99.1	79	0.9	7	0.1	0	0.0	9126
Vietnam	1718	57.0	1147	38.0	23	0.8	127	4.2	3015
	45982	82.8	8385	15.1	337	0.6	821	1.5	55525

Source: ASEAN Secretariat, CEPT Product Lists (December, 1998)

Overall, 54,367 tariff lines out of 55,525 lines were either in the IL or TEL. This means that 97.9 percent of tariff lines will be between 0-5 percent by 2002/2003 (by 2006 for Vietnam and 2008 for the Lao PDR and Myanmar). The share of the SL and GEL appears to be small relative to the IL and TEL. However, caution is needed in interpreting these figures since some commodities with high trade value and/or high tariff rates have been included in the GEL by some member countries.[9] The process of transferring tariff lines to the liberalization lists is ongoing, and significant progress has been made in a number of countries since 1998 in areas such as reducing the number of tariff lines in the GEL.

[9] For instance, if the import values are assigned to the items in Vietnam's GEL, they account for some 37 percent of Vietnam's imports from ASEAN. In addition, since Vietnam's GEL includes some high tariff items, about 65 percent of tariff revenues from ASEAN are shielded from the CEPT tariff reduction (Chapter 5).

Table 2.2A Revealed Comparative Advantage for ASEAN 10 (1990-1995 Average)

SITC	Description	Brunei	Indonesia	Cambodia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
0	LIVE ANIMALS	0.0	0.0	0.0	1.3	1.8	0.2	0.0	0.0	0.1	0.0
1	MEAT AND PREPARATIONS	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.1
2	DAIRY PRODUCTS AND EGGS	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.2	0.1	0.8
3	FISH AND PREPARATIONS	0.0	3.4	1.6	0.1	0.7	9.5	3.7	0.5	8.7	11.3
4	CEREALS AND PREPARATIONS	0.0	0.1	0.6	0.1	0.2	3.3	0.1	0.2	3.3	6.6
	(Of which 42 RICE)	0.0	0.3	0.0	0.0	0.0	27.6	0.2	0.1	28.7	69.7
5	FRUIT AND VEGETABLES	0.0	0.6	0.1	0.2	0.3	8.3	4.5	0.1	3.1	1.5
6	SUGAR AND PREPS HONEY	0.0	0.5	0.0	0.0	0.5	0.5	3.3	0.1	7.0	0.8
7	COFFEE TEA COCOA SPICES	0.0	4.8	1.2	7.0	1.3	1.7	0.4	0.6	0.8	9.2
	(Of which 71 COFFEE)	0.0	5.2	0.0	14.9	0.0	0.1	0.3	0.1	1.2	16.9
8	ANIMAL FEEDING STUFF	0.0	1.0	0.0	0.0	0.6	1.4	1.3	0.2	1.6	0.1
11	BEVERAGES	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.1	0.1
12	TOBACCO AND MFRS	0.0	0.8	0.0	0.0	0.1	0.1	1.0	0.4	0.8	0.1
21	HIDES,SKINS,FURS UNDRSSD	0.0	0.1	3.3	4.1	0.1	1.9	0.0	0.0	0.1	2.7
22	OIL SEEDS,NUTS,KERNELS	0.0	0.1	7.6	0.5	0.1	16.7	0.5	0.1	0.1	7.0
23	RUBBER CRUDE,SYNTHETIC	0.0	12.1	64.5	0.0	10.8	7.5	0.5	1.8	14.2	3.4
24	WOOD LUMBER AND CORK	0.0	2.4	48.0	53.9	9.2	45.4	0.7	0.3	0.2	3.6
25	PULP AND WASTE PAPER	0.0	0.6	0.0	0.0	0.0	0.0	0.5	0.2	0.1	0.0
26	TEXTILE FIBRES	0.0	0.2	1.9	0.1	0.3	0.3	0.4	0.1	0.7	0.7
	(OF WHICH 261 SILK)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9	9.2
27	CRUDE FERTLZR,MINRLS NES	0.0	0.3	0.0	0.3	0.3	0.1	0.4	0.2	1.2	0.3
28	METALLIFEROUS ORES,SCRAP	0.1	2.8	2.8	3.9	0.4	1.7	3.8	0.4	0.1	1.0
29	CRUDE ANIMAL,VEG MAT NES	0.0	0.5	2.3	3.4	0.3	2.4	1.2	0.5	1.4	3.1
32	COAL,COKE,BRIQUETTES	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1
33	PETROLEUM AND PRODUCTS	6.4	2.6	0.0	0.0	1.1	0.1	0.1	1.9	0.1	2.9

Table 2.2A Revealed Comparative Advantage for ASEAN 10 (1990-1995 Average)/Continued

SITC	Description	Brunei	Indonesia	Cambodia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
34	GAS NATURAL AND MANUFCTD	40.3	14.4	0.0	0.0	3.0	0.0	0.7	0.2	0.0	0.0
41	ANIMAL OILS AND FATS	0.0	0.6	0.0	0.0	1.2	0.0	0.3	0.2	0.0	0.0
42	FIXED VEGETABLE OIL,FAT	0.0	6.2	0.0	0.0	15.2	0.0	11.6	1.7	0.1	0.8
43	PROCSD ANML VEG OIL,ETC	0.0	2.7	0.0	0.0	16.2	0.0	3.6	1.5	0.7	0.0
51	CHEM ELEMENTS,COMPOUNDS	0.0	0.3	0.0	0.1	0.2	0.1	0.2	0.8	0.1	0.0
52	COAL,PETROLEUM ETC CHEMS	0.0	0.0	0.0	0.0	0.6	0.0	0.0	4.0	0.1	0.0
53	DYES,TANNING,COLOUR PROD	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.7	0.3	0.0
54	MEDICINAL ETC PRODUCTS	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.3	0.1	0.0
55	PERFUME,CLEANING ETC PRD	0.0	0.4	0.0	0.0	0.4	0.0	0.2	0.5	0.3	0.3
56	FERTILIZERS MANUFACTURED	0.0	1.1	0.0	0.0	0.4	0.0	1.5	0.1	0.0	0.1
57	EXPLOSIVES,PYROTECH PROD	0.0	0.1	0.0	0.0	0.2	0.0	1.5	0.1	0.1	0.0
58	PLASTIC MATERIALS ETC	0.0	0.1	0.0	0.0	0.2	0.0	0.1	0.7	0.3	0.1
61	LEATHER,DRESSED FUR,ETC	0.0	0.6	0.0	0.9	0.1	0.3	0.3	0.1	2.0	0.4
62	RUBBER MANUFACTURES NES	0.0	0.4	0.2	0.0	0.8	0.0	0.2	0.3	0.9	1.3
63	WOOD,CORK MANUFACTRS	0.0	18.5	0.0	3.6	3.6	0.9	2.0	0.6	1.1	1.1
64	PAPER,PAPERBOARD AND MFR	0.0	0.5	0.0	0.0	0.2	0.0	0.1	0.3	0.2	0.1
65	TEXTILE YARN,FABRIC ETC	0.0	1.6	0.1	0.1	0.4	0.0	0.4	0.2	1.2	1.8
66	NONMETAL MINERAL MFS NES	0.1	0.4	0.0	0.0	0.4	3.4	0.4	0.2	1.9	0.4
67	IRON AND STEEL	0.0	0.2	0.0	0.3	0.2	0.1	0.1	0.2	0.2	0.7
68	NON-FERROUS METALS	0.0	0.6	0.0	0.0	0.4	0.2	1.1	0.3	0.1	0.4
69	METAL MANUFACTURES NES	0.0	0.3	0.0	0.0	0.4	0.0	0.3	0.6	0.6	0.3
71	MACHINERY,NON-ELECTRIC	0.0	0.0	0.0	0.0	0.7	0.1	0.5	2.2	1.0	0.1
72	ELECTRICAL MACHINERY	0.0	0.2	0.0	0.0	2.9	0.0	2.5	2.4	1.3	0.1

Table 2.2A Revealed Comparative Advantage for ASEAN 10 (1990-1995 Average)/Continued

SITC	Description	Brunei	Indonesia	Cambodia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
73	TRANSPORT EQUIPMENT	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1
81	PLUMBG,HEATNG,LGHTNG EQU	0.0	0.2	0.0	0.0	0.3	0.0	0.9	0.2	0.8	0.1
82	FURNITURE	0.0	2.0	0.1	0.2	0.9	0.1	2.2	0.4	1.8	0.9
83	TRAVEL GOODS,HANDBAGS	0.0	0.5	0.5	0.1	0.2	0.0	2.0	0.1	2.8	3.5
84	CLOTHING	0.4	2.1	4.8	8.1	1.4	1.5	4.4	0.5	2.2	3.1
85	FOOTWEAR	0.0	4.6	0.1	0.1	0.3	0.1	1.5	0.1	2.9	4.0
86	INSTRMNTS,WATCHES,CLOCKS	0.7	0.1	0.0	0.0	0.6	0.0	1.0	0.8	0.7	0.1
89	MISC MANUFCTRD GOODS NES	2.0	0.4	0.1	0.1	1.4	0.1	1.0	1.2	1.9	0.3
93	SPECIAL TRANSACTIONS	0.4	0.1	2.6	0.3	0.6	0.2	0.6	1.0	0.5	0.2
94	ZOO ANIMALS,PETS	0.0	3.5	0.0	0.0	0.6	2.9	3.5	0.5	1.2	1.9

Source: UN Comtrade System.

Table 2.2B Revealed Comparative Advantage for ASEAN 10 in 1997

		Brunei	Indonesia	Cambodia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
0	LIVE ANIMALS	0	0	0	0.1	1.8	0.8	0	0	0.1	0
1	MEAT AND PREPARATIONS	0	0.1	0	0.4	0	0	0	0	1.3	0.4
2	DAIRY PRODUCTS AND EGGS	0	0.4	0	0.9	0.3	0	0	0.1	0.1	0.4
3	FISH AND PREPARATIONS	0	3.6	3.7	0	0.4	17.3	1.8	0.4	6.8	8.8
4	CEREALS AND PREPARATIONS	0.1	0.1	0.3	0.3	0.2	0.7	0.1	0.2	2.7	4.4
	(Of which 42 rice)	0.7	0	2.4	0	0	1.3	0	0	24.4	43.3
5	FRUIT AND VEGETABLES	0	0.6	0.1	0.5	0.2	13.8	2.4	0.1	1.9	1.1
6	SUGAR AND PREPS HONEY	0	0.4	0	0.2	0.2	0.4	1.5	0	5.7	0.4
7	COFFEE TEA COCOA SPICES	0	4.9	0	15	0.7	0.6	0.2	0.5	0.5	11.8
	(Of which 71 coffee)	0	4.3	0	28	0.1	0.1	0.1	0.1	0.5	19.1
8	ANIMAL FEEDING STUFF	0	0.8	0.1	0	0.3	0.4	0.4	0.1	1.2	0.1
11	BEVERAGES	0	0	0.1	0	0.1	0.8	0.2	0.3	0.2	0.1
12	TOBACCO AND MFRS	0	0.9	0.3	0.7	0.3	0.2	0.5	0.2	0.4	0.2
21	HIDES,SKINS,FURS UNDRSSD	0.1	0	3.2	1.3	0.1	0.3	0	0	0.1	0.7
22	OIL SEEDS,NUTS,KERNELS	0	0	1.1	0.1	0	11.1	0	0	0	1.1
23	RUBBER CRUDE,SYNTHETIC	0	13.5	47.6	0.2	5.9	11.6	0.4	1	15.2	3.7
24	WOOD LUMBER AND CORK	0	2.5	18.5	33.7	4	28.3	0.2	0.2	0.2	0.2
25	PULP AND WASTE PAPER	0.2	2.2	0	0.1	0	0.1	0.4	0.2	0.2	0
26	TEXTILE FIBRES	0.1	0.5	0.1	0.2	0.3	0.6	0.2	0.1	0.6	0.1
	(Of which 261 silk)	0.3	0.1	0	0	0	0	0	0.3	0.6	2
27	CRUDE FERTLZR,MINRLS NES	0.4	0.3	0	0.4	0.4	2.3	0.2	0.1	1.2	0.4
28	METALLIFEROUS ORES,SCRAP	0.1	3.7	0.1	0.8	0.3	0.9	1.9	0.4	0.2	0.2
29	CRUDE ANIMAL,VEG MAT NES	0	0.5	0.5	2.7	0.2	1.6	1.1	0.2	1	1.1

Table 2.2B Revealed Comparative Advantage for ASEAN 10 in 1997/(Continued)

	Brunei	Indonesia	Cambodia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
32 COAL,COKE,BRIQUETTES	0	5.2	0	0.8	0	0	0	0	0	3.2
33 PETROLEUM AND PRODUCTS	4.8	1.8	0	0.4	0.6	0	0.1	1.5	0.2	2.6
34 GAS NATURAL AND MANUFCTD	42.2	10.1	0	0	3.1	0	0.4	0.2	0.1	0
41 ANIMAL OILS AND FATS	0	0.2	0	0	0.2	0.2	0	0.1	0	0
42 FIXED VEGETABLE OIL,FAT	0	8.8	0	0	11.1	0.3	5.5	0.6	0.1	0.9
43 PROCESD ANML VEG OIL,ETC	0	4.1	0	0	8	0	0.9	1	0.3	0
51 CHEM ELEMENTS,COMPOUNDS	0	0.5	0.1	0	0.3	0	0.1	0.9	0.3	0.2
52 COAL,PETROLEUM ETC CHEMS	0	1.9	0	0	1	0	1	2.8	1.5	0
53 DYES,TANNING,COLOUR PROD	0	0.3	0	0.1	0.3	0.1	0	0.6	0.2	0
54 MEDICINAL ETC PRODUCTS	0	0.1	0	0	0	0	0	0.2	0.1	0
55 PERFUME,CLEANING ETC PRD	0	0.5	0	0.4	0.3	0	0.1	0.7	0.4	0.3
56 FERTILIZERS MANUFACTURED	0	0.8	0	0	0.3	0	0.3	0.1	0	0
57 EXPLOSIVES,PYROTECH PROD	0	0.1	0	0.5	0.2	0	0.9	0.2	0.1	0
58 PLASTIC MATERIALS ETC	0	0.4	0	0	0.4	0	0.1	0.7	0.7	0
61 LEATHER,DRESSED FUR,ETC	0	0.6	0.1	1	0.2	0.1	0.1	0.1	1.7	0.7
62 RUBBER MANUFACTURES NES	0	0.7	0	0	0.7	0	0.2	0.3	1	0.2
63 WOOD,CORK MANUFACTRS NES	0	13.1	17.8	5.2	4	1.5	0.9	0.2	1	1.1
64 PAPER,PAPERBOARD AND MFR	0	1.1	0	0.3	0.3	0	0.1	0.2	0.4	0.1
65 TEXTILE YARN,FABRIC ETC	0	1.9	0.2	0.2	0.5	0.1	0.3	0.1	1	0.9

Table 2.2B Revealed Comparative Advantage for ASEAN 10 in 1997/(Continued)

	Brunei	Indonesia	Cambodia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
66 NONMETAL MINERAL MFS NES	0.2	0.4	0	0.1	0.4	2.2	0.3	0.2	1.5	0.7
67 IRON AND STEEL	0	0.2	0	0.1	0.2	0.1	0.1	0.1	0.3	0
68 NON-FERROUS METALS	0	0.6	0	0	0.4	0.1	0.5	0.3	0.2	0.1
69 METAL MANUFACTURES NES	0	0.4	0	0	0.5	0	0.3	0.5	0.6	0.2
71 MACHINERY,NON-ELECTRIC	0	0.2	0	0	1.3	0	1.4	2.7	1.4	0.1
72 ELECTRICAL MACHINERY	0	0.4	0	0	2.7	0.1	3.3	2	1.4	0.5
73 TRANSPORT EQUIPMENT	0.1	0.1	0	0	0.1	0	0.1	0.1	0.1	0
81 PLUMBG,HEATNG,LGHTNG EQU	0	0.3	0	0.2	0.3	0	0.5	0.1	0.6	0.1
82 FURNITURE	0	2.6	0.1	2.1	1.4	0.5	1.5	0.1	1.4	2.6
83 TRAVEL GOODS,HANDBAGS	0	0.8	0.1	0.4	0.1	1.7	2.4	0.1	2.1	8
84 CLOTHING	0.9	2.3	14.7	12.3	1.1	5.4	2.4	0.2	1.6	4.4
85 FOOTWEAR	0	5.7	2.3	3.4	0.1	0.6	1	0.1	1.9	18.7
86 INSTRMNTS,WATCHES,CLOCKS	1.2	0.3	0.1	0	0.6	0	0.9	0.8	0.9	0.1
89 MISC MANUFCTRD GOODS NES	3	0.8	0	0.1	1.5	0.2	0.5	0.9	1.4	0.5
93 SPECIAL TRANSACTIONS	0.2	0.1	0.1	0.2	0.4	0.1	0.6	1	0.6	0.1
94 ZOO ANIMALS,PETS	0	5.1	0.1	0	0.3	0	1.4	0.2	6.2	4.5

Source: UN Comtrade System.

2.2.3 Theory of Preferential Trade Liberalization

In considering the impacts of trade liberalization, it is important to consider the differences between large and small countries. With increased trade volumes, a large country may affect its international terms-of-trade by lowering world prices of its exports, and by raising world prices of its imports. Large countries have an incentive to use external tariffs to improve its terms-of-trade, reducing trade volumes to drive up the price of exports and to reduce the price of imports. In contrast, since a small country cannot influence international terms-of-trade, it faces world prices in its imports and exports. In this volume, since Vietnam is relatively large in some of the products which it trades extensively (e.g. the second largest rice exporter), we use the *large* country assumption in Chapter 5. For the Lao PDR, Cambodia, and Myanmar, it seems reasonable to use the *small* country assumption, given the small size of their economies both in ASEAN and in the world market.

In this section, we outline the framework used to evaluate the effects of preferential liberalization under AFTA. To do this, we first consider the effects of changes in the rates of protection that a new member levies on its imports. Then, we turn to the export side and consider the implications of changes in the protection levied by the new members' trading partners. We follow Armington (1969) in assuming that users of exports from the new members distinguish between imported and domestic goods, and between imports by country of origin. A simple diagrammatic approach to evaluate the welfare implications of policy changes is used in this section; however, this approach can be shown to provide a second order approximation to a rigorous estimate derived from the balance of trade function approach (see Martin 1997).

The Effects on the Import Side: Trade Creation vs. Trade Diversion

The concepts of trade creation and trade diversion are central to the evaluation of import-side impacts of discriminatory trade liberalization. Trade creation measures the gains from expanding trade in the products being liberalized. Trade diversion, by contrast, measures the losses from reductions in trade of other products. A very simple illustration of the concept of trade creation in the market for a good imported from ASEAN partners is given in Figure 2A. The D_{asean} schedule[10] in the diagram represents the net demand for imports of a particular good from ASEAN as a function of the domestic price. The graph is downward sloping because higher prices reduce import demand both by reducing consumer demand and by increasing production.

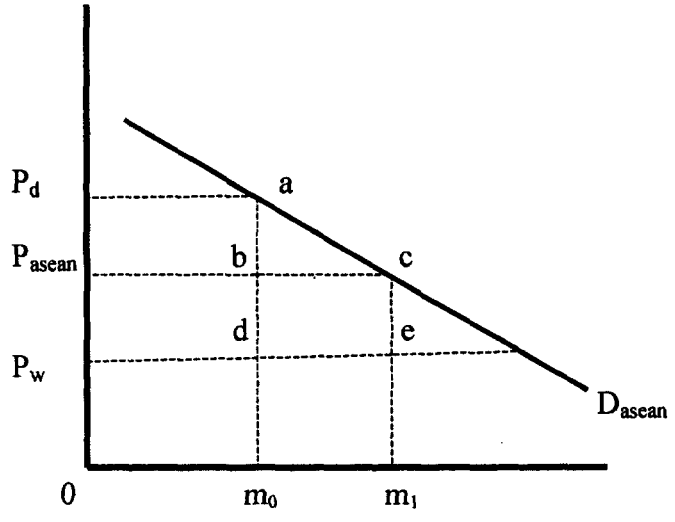
The world price of the good is P_w.[11] Before accession, the new member imposes a tariff t on imports from ASEAN members and all other trading partners, and the domestic price is $P_d = P_w + t$. Let us now introduce a preferential tariff rate t_{asean} through a reduction in the tariff on imports from ASEAN partners. This reduces tariff revenues on initial imports from ASEAN by $P_d\, abP_{asean}$ but generates tariff revenues of bced on newly-induced imports from ASEAN. The gains to users from the tariff reduction are greater than any losses in tariff revenues since users are able to

[10] To use the areas under the curve as an indication of welfare impacts, the curve should be based on a compensated consumer demand curve (Varian, 1992).

[11] In a large country case, the world price increases (decreases) with the country's increase (decrease) in imports. In a small country case, the world price remains unchanged.

increase the quantity of ASEAN goods that they purchase. Following the decline in the domestic price, demand for ASEAN goods rises from initial quantity m_0 to final quantity m_1.

Figure 2.A Welfare Impacts of a New Member's Liberalization of Partner Imports

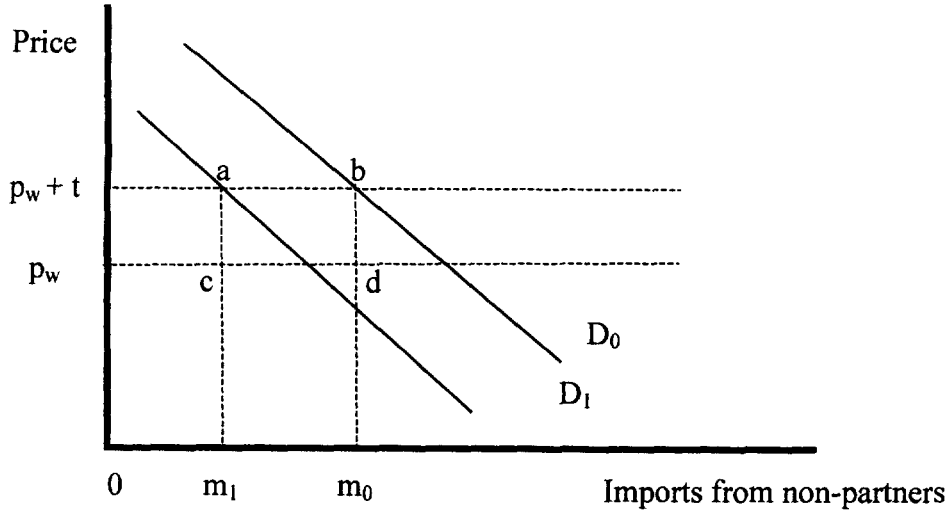


Economic surplus increases by the area P_d abP_{asean} + abc. In addition, with the increase in the imports from ASEAN, the loss of revenues is partially compensated by the area *bced.* In sum, the net gain to a new member in this market is approximated by the area aced. This is the welfare benefit from *trade creation.*

If the import distortion being liberalized were the only distortion in the economy, then the welfare impacts of liberalization could be analyzed by considering only the trade creation effects depicted above. If, however, there are distortions in other markets, the problem is one of the *second best*[12] and the impacts of liberalization on the trade flows through these barriers must be considered. One of the best known types of second-best welfare effect is *trade diversion*, which results from the continuation of protection against suppliers outside the preferential arrangements. In the analytical framework used in this study, this potential source of loss is readily seen by examining conditions in the market for imports from non-partner countries, represented in Figure 2.B.

[12] The theory of *second-best* holds that for distorted economic systems, eliminating one set of distortions does not guarantee an improvement in overall economic welfare so long as other economic distortions remain unchanged. As it applies to the static theory of regional integration arrangements, the theory of second-best implies that reducing tariffs on a discriminatory basis under a regional integration arrangement does not guarantee an improvement in welfare for individual countries or the world economy (Lipsey and Lancaster 1956/57; DeRosa, 1998).

Figure 2.B Impact of Preferential Liberalization on Imports from Non-partner Countries.



Assuming that imports from non-partner countries are substitutes for imports from partner countries, the reduction in the price of imports from partner countries shown in Figure 2.B leads to a reduction in the demand for goods from non-partner countries. This reduction shifts the demand curve for these goods from D_0 to D_1. This has adverse welfare consequences that can be measured by the reduction in the tariff revenues collected on non-partner imports. This reduction in tariff revenues corresponds to a reduction in welfare because each unit of the good that was previously imported was worth p_d to consumers in the import market, but cost the country only p_w to purchase in world markets. The welfare loss from trade diversion is the loss in tariff revenues, shown by the area abdc.

Whether there is a net gain or loss to a new member depends on the relative sizes of the gain in Figure 2.A and the loss in Figure 2.B. As shown in Martin (2000), the gains from trade creation will be larger, the higher the rate of protection initially applied on these trade flows; the larger the reduction in the tariff on intra-regional trades; the more price responsive is the total domestic demand for these goods, (particularly, the more substitutable are domestic and imported goods); and, if the size of the increase in trade is proportional to the initial trade volume, the larger the initial trade volume. Trade diversion costs are likely to be greater the higher the tariffs applied in the non-partner markets and the greater the reduction in the quantity of imports from these markets. Two comparisons that are likely to be instructive are the relative heights of trade barriers against the partner and the rest of the world, and the substitutability of imports relative to domestic goods (that determines net trade creation) versus the substitutability between imports from different sources (that determines trade diversion).

Effects on the Export Side

Import liberalization typically brings about an increase in exports by changing the real exchange rate.[13] Lowering the domestic price of at least some imports will cause consumers to substitute these goods for nontraded goods. The reduction in demand for the nontraded good lowers its price

[13] For the diagrammatic approach, see Figure 6.7-8 in Chapter 6.

relative to the prices of traded goods—a relative price change frequently termed a real exchange rate depreciation (Salter 1959). This reduction in the profitability of nontraded good production makes production for export relatively more attractive and increases the supply of exports.

The real exchange rate depreciation following import liberalization is represented by a shift in the export supply function from ES_0 to ES_1 in Figure 2C-1,2. The outward shift in the export supply curve increases exports from x_0 to x_1. If a new member's exports have market power in this market, the increase in exports pushes the world price down from p_w to p'_w with the size of the decline depending on the slope of the export demand curve. The resulting welfare impact is measured by the area *abcd* (Figure 2C-1). If a country is small in this market, the increase in exports does not affect the world price (Figure 2C-2).

Figure 2.C Terms-of-trade Impacts Resulting from Increased Export Supply

Figure 2.C-1 *Large* Country Case
--The increase in exports leads to terms-of-trade deterioration from P_w to P'_w.

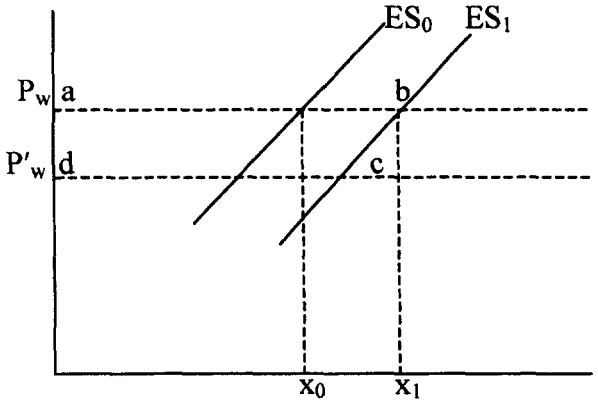
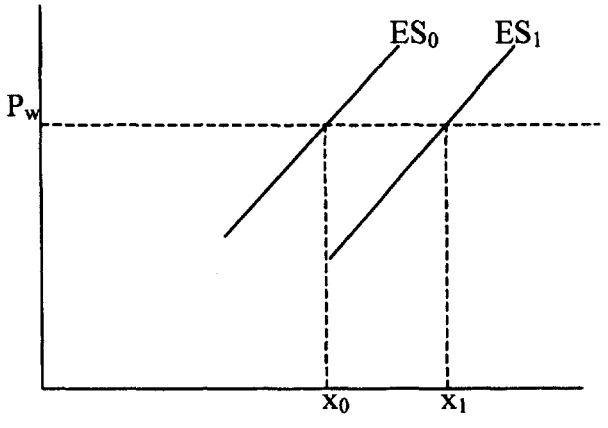


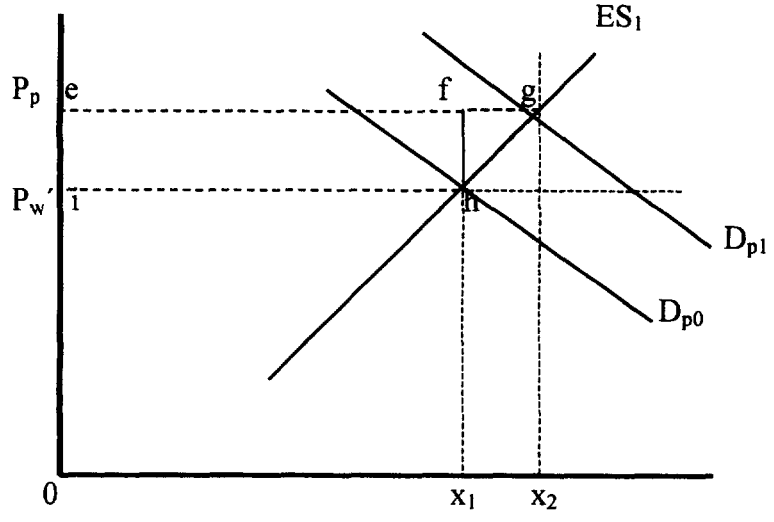
Figure 2.C-2 *Small* Country Case
--The world price is unchanged with an increase in exports



If liberalization in a new member results in reciprocal liberalization by a new member's trading partners on its exports to those partners, then the new member will experience a terms-of-trade gain on the export side (Figure 2.D). The reduction in the ASEAN partners' tariffs on exports from a new member shifts the demand curve for exports from D_{p0} to D_{p1}. The supply of exports from the new member to its ASEAN partner is shown by the supply curve, ES_1 in Figure 2.D. Prior to the formation of the free trade agreement, the price received by the new member was the price in the partner country, P_p less the tariff applied by the partner country, t_p so the net price was $(P_p - t_p)$. This price is equal to the world price, P_w' since the domestic price in the partner is assumed equal to the world price plus the tariff. With the agreement, the price received by the new member is P_p. In Figure 2.D, this gain is shown by the move from price P_w' to P_p. The benefit to the new member is given by the increase in the price, $t_p (= P_p - P_w')$, times the initial quantity of exports, x_1, plus the gains resulting from the new member's ability to increase its export supply to this market, shown by area fgh in Figure 2.D. In the figure, the total gains to the new member are represented by $t_p.x_1$ + fgh.

If we treat the new member as a small country in its export markets, this *terms-of-trade* gain is a net gain to the country. In contrast with the case of trade creation on the import side, no offsetting loss must be considered.[14] For a large country, the net effect of the terms-of-trade depends on the difference between the areas abcd and eghi. Clearly, this analysis of the export side suggests that what happens to trade barriers in the new members' trading partners should be an important part of the evaluation of the proposed free trade agreement. The gains are positively related to the size of the initial barriers imposed against the new members, the price responsiveness of the new members' exports, and to the magnitude of the initial trade flows between partners.

Figure 2.D Terms-of-trade Impacts of Improved Access to Partner Markets.



All of the impacts of discriminatory trade liberalization outlined above need to be taken into account simultaneously in forming an overall assessment of the proposed approach. While diagrams of the type shown above aid understanding, they do not provide a practical basis for making an overall evaluation. By contrast, the quantitative models implemented in Chapters 3 to 6 allow all of these effects to be taken into account at once. They incorporate not only the simultaneous interactions between all of the individual supply and demand relationships, but also interactions involving the real exchange rate.

2.2.4 Trade Patterns and the Structure of Protection for ASEAN Countries

In the light of the theory described above, this section reviews the trade pattern and the structure of protection of the new member countries and their ASEAN partners, which are the key variables determining the costs and benefits of the preferential liberalization.

[14] The specification of the gains to the new member countries from increased access to its partner markets assumes that the partner's external trade barriers remain the same, and that the additional exports supplied by the new member countries are not sufficient to reduce the price in the partner market below $P_w + t$. If sufficiently large suppliers obtain access to this market, this price may fall, reducing the terms-of-trade gains to the new member countries.

Trade Pattern

Table 2.4 summarizes the orientation of the new member countries' trade to ASEAN and non-ASEAN trading partners. It is likely that the larger is initial trade with ASEAN, the larger will be the impacts of liberalization with ASEAN partners. This is because the larger the share of imports from ASEAN, the larger the scope for trade creation; and the larger the exports to ASEAN, the larger the scope for improvement in the terms-of-trade resulting from ASEAN partners' tariff concessions. The trade patterns differ between the new member countries. Whereas the Lao PDR's trade with ASEAN is substantial, that for Vietnam is relatively small on both the import and export sides.

Table 2.4 ASEAN as Source and Destination for Imports and Exports

	Imports	Exports
	(%)	(%)
Lao PDR[a]	75	45
Cambodia	38	41[b]
Vietnam	27	24
Myanmar	52	38

a. The Lao PDR's figures are those assuming its imports and exports to/from Vietnam are 5 percent and 20 percent respectively.
b. If the banknotes (HS4907) are excluded, Cambodia's exports to ASEAN represented only 13 percent in 1998.
Note: The figures represent the years 1995 for the Lao PDR; 1996 for Vietnam and Myanmar; and 1998 for Cambodia.

Protection Structure for the ASEAN Countries

A summary of some key measures of trade-weighted average MFN[15] tariff rates for the period 1988-1997 is given in Table 2.5. The figures presented in the first four columns are applied tariff rates. The figures in the final column are designed to capture the impact of the Uruguay Round. In most cases, they were derived by reducing 1988 tariff rates to the extent necessary to meet the tariff binding commitments offered by these economies in the Uruguay Round. As is evident from Table 2.5, the ASEAN countries have substantially lowered their MFN rates since the late 1980s. The reductions in applied rates have, in most cases, brought applied rates well below the levels that would have resulted only from the liberalizing effect of the Uruguay Round. As a consequence, there is a substantial overhang, where the tariff bindings offered at WTO are frequently much above currently applied rates.

[15] A key concept underlying the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO), is non-discrimination between different sources of the same imported goods. This is achieved by requiring members to give each other most favored nation (MFN) treatment. MFN liberalization has been regarded as the most appropriate path to achieve the "first-best" outcome of world economic integration. However, Article XXIV of the GATT gives exemption of the MFN principle to free trade areas providing they eliminate barriers on "substantially all trade" between members and do not lead to external barriers that are higher or more restrictive than those applying prior to the formation of the bloc. A further complication for developing countries is the *Enabling Clause* introduced in 1979, that significantly relaxes the conditions for creating RIAs that include only developing countries. It drops the conditions on the coverage of trade, and allows developing countries to reduce tariffs on mutual trade in any way they wish, and non-tariff measures "in accordance with criteria which may be prescribed" by the WTO members (World Bank, 2000b). AFTA is one of the preferential arrangements that have been notified under the Enabling Clause.

The relative height of protection against ASEAN and non-ASEAN countries is one of the key influences on the costs and benefits of preferential trade liberalization. On the import side, trade creation is likely to be larger, the higher the initial tariff rates against ASEAN since the reductions are made towards fixed final targets. The costs of trade diversion will be greater, the higher the tariff rates against non-member countries. As shown in Figure 2.B, the cost of each unit diverted equals the tariff rate. Where the tariffs on imports from non-members remain high, ASEAN producers are able to charge high prices because the tariff protects them from world competition, and capture the benefits that previously accrued to governments as tariff revenues on intra-regional trade. The gains from competition with low cost suppliers-gains to consumers, gains in developing an efficient industrial structure, and competition-induced efficiency gains at the firm level – may be lost if competition from the lowest cost suppliers is inhibited (World Bank, 2000b).

Table 2.5 Weighted Average MFN Tariff Rates for the ASEAN Countries

	Weighted Average Applied Rates 1988-1996				The Uruguay Round
	1988-90[a] (%)	1991-93[a] (%)	1995[b] (%)	1997[c] (%)	Post-UR Rate[e]
Indonesia	18.0	12.6	11.9	7.8	38.1
Malaysia	11.5	11.2	8.4	3.6	9.3
Philippines	27.9	23.5	18.2	10.9	21.9
Singapore	1.9	1.9	0.1	0.0	7.1
Thailand	38.0	36.9	14.7	13.7	27.5
Vietnam	n.a.	n.a.	19.4[d]	19.0[d]	n.a.

Source: a. UNCTAD (1994), for the Philippines, the data were taken from www.apecsec.org.sg and the figures are simple averages; b. UNCTAD TRAINS Database; c. ASEAN Secretariat (1997); d. Authors' calculation based on the data obtained from the Centre for International Economics (CIE). The data are not strictly comparable.
e. Finger, Ingco and Reincke (1996).

On the export side, the terms-of-trade benefits to the integrating country depend on the difference between the current MFN protection level of the ASEAN countries and the concessions given by them. Clearly, the higher the initial level of protection of ASEAN partner countries, the larger the scope for export-side gains.

Table 2.6 shows the initial rates of protection that the new members impose on ASEAN and non-ASEAN imports, as well as the tariffs they face on their exports to ASEAN. Since these averages are based on MFN tariff rates, any differences result from differences in the composition of the relevant trade flows. The first two columns of Table 2.6 show the relative heights of tariffs imposed by the new members on imports from ASEAN and non-ASEAN countries. The fact that the new members' tariffs on imports from ASEAN exceed those on imports from non-ASEAN sources increases the likelihood that there will be gains from reductions in intra-ASEAN tariffs. The last column demonstrates the weighted tariffs faced by the new members on their exports to ASEAN. In Cambodia and the Lao PDR, these tariffs are average around 10 percent, providing significant scope for terms-of-trade gains resulting from preferential market access. The relatively low tariff faced by Vietnam's exports seems to reflect the dominance of lightly-protected Singapore in Vietnam's exports to ASEAN.

The overall tariff averages shown in Tables 2.5 and 2.6 mask important differences in protection across sectors. To illustrate these differences, Table 2.7 presents both simple and weighted tariff averages by sector. The *ad valorem* tariff rates shown in the *CEPT Product Lists* published by the ASEAN Secretariat were averaged over each HS section in order to compare the MFN rates with

the concessional rates under AFTA. Table 2.7 shows both simple and weighted tariff averages by sector. In countries with more restrictive tariff regimes, simple average tariffs are typically higher than weighted average tariffs because of the induced reductions in the volumes of imports facing higher tariff rates. For instance, the simple average of 23.3 percentage is about 10 percentage points higher than the weighted average in Thailand. By contrast, in some low-income countries, the weighted average tariff rates are higher than the simple average, reflecting the importance of the tariff as a means of raising revenues (e.g. Vietnam, the Lao PDR).

Table 2.6 Weighted Average Tariff Rates against ASEAN and ROW

	Import Tariffs			Tariffs Faced by Exports
	ASEAN	ROW	Average	ASEAN
	(%)	(%)	(%)	(%)
Cambodia	18.8	14.6	17.3	9.7
Lao PDR	15.2	13.4	14.7	10.3
Vietnam	24.3	16.5	19.0	5.9
Myanmar	n.a	n.a.	5.8	n.a.

Source: Chapters 3-6

There is a general tendency for protection rates for agricultural commodities and labor-intensive manufacturing to be high in the ASEAN countries. For instance, the weighted averages for *apparel* are particularly high for low-middle income ASEAN countries, ranging from 20 to 50 percent. High protection *of processed foods, drinks & tobacco* is observed in the Philippines, the Lao PDR, Thailand and Vietnam. The protection for *transport equipment* remains high for all the ASEAN countries. By contrast, the tariff rates for *electrical and mechanical equipment* are relatively low. This reflects the importance of low protection for investment goods in attracting foreign direct investment and in promoting intra-regional trade in the Asian division of labor. For agricultural commodities, some caution should be borne in mind in interpreting the figures in Table 2.7 since many specific tariff lines have not yet been converted to *ad valorem* rates and many are subject to non-tariff restrictions.[16] Table 2.8 gives the standard deviations of tariff rates by commodity group for ASEAN countries because a high standard deviation of protection rates increases the cost of protection. As with average tariff rates, the standard deviations for processed foods, transport equipment and some agricultural commodities are high in a number of ASEAN countries.

The AFTA rules encourage, or at least try not to discourage, liberalization on an MFN basis. This is done through a provision in the CEPT Agreement which allows Member States that reduce their tariffs to 0-5 percent, even on an MFN basis, to enjoy the CEPT concessions from other Member States on those products (ASEAN Secretariat, 1995). AFTA may be used as a useful stepping stone to further liberalization because it exposes domestic industry to greater competition, and creates a situation where there are substantial benefits from reducing the trade diversion associated with discriminatory liberalization. Indonesia and the Philippines are prime examples of this, in having announced their intention to build on AFTA concessions to advance their unilateral MFN-based liberalization (APEC, 1996).

[16] Ingco calculated two sets of post-Uruguay Round MFN tariff rates for agricultural protection. The first includes the protective effects of non tariff barriers. They are 23.2 percent (Indonesia), 56.8 percent (Malaysia), 46.2 percent, (Philippines) 8.2 percent (Singapore), and 33.8 percent (Thailand). The second set covers only tariff protection. They are 8.3 percent (Indonesia), 2.5 percent (Malaysia), 18.0 percent, (Philippines) 8.8 percent (Singapore), and 26.5 percent (Thailand) respectively (Finger, Reincke, Ingco, 1996).

Table 2.7 MFN Tariff Rates for ASEAN Countries

Section	HS	Description	Cambodia		Indonesia		Malaysia		Philippines		Lao PDR		Thailand		Vietnam	
			Simple Average(%)	Weighted Average(%)	Simple Average(%)	Weighted Average(%)	Simple Average(%)	Weighted Average(%)	Simple Average(%)	Weighted Average(%)	Simple Average(%)	Weighted Average(%)	Simple Average(%)	Weighted Average(%)	Simple Average(%)	Weighted Average(%)
1	1-5	Animals & animal products	25.4	15.9	15.9	10.8	8.9	1.7	23.6	14.2	13.9	7.1	39.4	34.2	11.5	13.7
2	6-14	Vegetable products	13.2	9.0	12.2	3.6	2.3	3.1	22.1	37.6	22.7	13.0	30.4	13.3	17.2	11.5
3	15	Animal & Vegetable oils	7.6	7.0	8.3	3.8	1.6	0.7	20.4	17.7	10.7	10.1	17.4	16.1	12.1	19.5
4	16-24	Processed foods, drinks & tobacco	25.8	15.4	26.6	5.6	6.4	3.0	26.7	21.1	24.5	30.7	38.2	23.5	34.0	43.6
5	25-27	Oil and minerals products	14.0	23.9	4.6	3.1	1.9	1.1	4.7	8.0	5.1	5.0	10.8	5.7	4.3	41.2
6	28-38	Chemical products	11.2	5.3	6.4	5.3	1.1	1.2	6.4	7.5	8.9	10.5	15.8	14.7	5.2	5.1
7	39-40	Plastic & rubber products	10.7	10.7	15.6	14.9	12.4	9.7	13.5	13.9	11.7	12.1	31.1	28.0	9.5	8.5
8	41-43	Skins & furs and their products	29.8	31.7	10.7	0.9	4.0	2.5	18.4	19.8	12.2	13.7	27.4	8.3	11.6	6.2
9	44-46	Wood & wood products	31.7	33.1	10.6	5.3	16.1	18.9	20.9	15.0	27.6	31.0	21.6	9.2	16.1	9.7
10	47-49	Pulp of wood & paper	7.0	7.0	9.3	5.8	8.9	6.8	15.5	14.3	7.4	8.8	23.4	14.6	16.2	19.0
11.1	50-60	Textiles	19.4	20.1	17.4	9.6	10.5	10.0	16.2	15.4	9.2	9.5	28.1	20.0	23.3	27.8
11.2	61-63	Apparel	27.9	20.1	27.8	28.2	14.2	11.9	27.4	27.1	10.7	10.3	45.0	42.3	48.9	46.3
12	64-67	Shoes, hats, umbrellas, etc.	27.4	29.4	21.9	15.7	13.1	15.7	29.5	23.7	12.1	10.1	43.6	37.3	40.5	21.9
13	68-70	Stone, ceramic & glass products	12.5	8.1	10.2	7.0	10.0	7.2	20.1	19.2	5.9	5.2	39.9	29.5	22.9	28.6
14	71	Jewelry & precious metal products	35.9	0.4	12.0	8.4	3.5	0.3	8.0	3.6	5.0	5.0	17.3	2.0	16.7	6.3
15	72-83	Base metals & their products	14.5	9.0	9.8	6.3	5.0	5.6	14.4	12.8	5.9	5.9	15.7	9.6	9.2	9.2
16	84-85	Electrical & mechanical equipment	17.0	15.1	5.5	4.9	4.0	2.1	8.5	5.7	6.8	7.7	12.6	11.7	6.4	9.1
17	86-89	Transport equipment	29.3	24.2	25.6	26.0	11.3	9.5	13.5	17.3	17.9	26.9	18.9	19.6	10.3	27.8
18	90-92	Photographic, optical, precision instruments	13.0	10.8	9.3	7.7	2.7	2.2	10.3	7.3	6.2	6.0	15.5	14.0	8.8	4.0
19	93	Arms & munitions	40.0	38.0	12.6	11.1	n.a.	n.a.	28.0	25.9	30.0	30.0	30.0	30.3	11.0	14.9
20	94-96	Miscellaneous articles	17.9	13.7	20.1	19.1	10.3	10.0	21.8	23.0	13.4	13.2	33.9	34.1	27.7	28.9
21	97-98	Objets d'art	n.a.	n.a.	14.1	8.9	4.4	2.2	30.0	30.0	5.0	5.0	17.1	15.3	6.5	5.5
		Total	16.6	17.3	12.3	7.8	6.2	3.6	15.2	10.9	9.6	14.7	23.3	13.7	15.6	19.0

Note: Singapore's tariff rates are close to zero although some specific tariffs are collected from such items as automobiles, cigarettes and petroleum oils.

Sources: ASEAN Secretariat, *CEPT Product Lists* (July 1997); Centre for International Economics; 1995 COMTRADE System; the government of the Lao PDR; Cambodia Customs House 1998

Table 2.8 Standard Deviations of Tariff Rates for ASEAN Countries

Section	HS	Description	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Thailand	Vietnam
1	1-5	Animals & animals products	0.0	11.6	6.0	10.1	32.6	5.1	12.6	17.1	6.3
2	6-14	Vegetable products	0.6	9.6	9.3	14.6	8.6	6.2	13.1	15.0	11.4
3	15	Animal and vegetable oils	0.0	4.2	6.1	7.3	2.2	1.9	12.5	11.3	8.0
4	16-24	Processed foods, drinks & tobacco	0.4	15.4	38.7	12.1	7.5	8.9	12.0	17.8	17.8
5	25-27	Oil and minerals products	0.0	9.0	3.0	0.7	4.7	1.3	3.2	9.4	7.0
6	28-38	Chemical products	2.2	11.0	5.5	5.2	3.2	3.9	7.0	8.6	10.5
7	39-40	Plastic & rubber products	4.9	7.1	10.2	6.4	10.1	2.7	8.5	12.8	12.6
8	41-43	Skins & furs and their products	3.2	10.6	9.3	5.3	5.9	3.5	10.3	32.8	14.0
9	44-46	Wood	9.8	9.3	7.4	10.4	9.3	4.6	11.9	16.8	16.5
10	47-49	Wood products & paper	0.0	1.5	6.9	3.1	8.6	0.9	8.5	11.8	14.7
11.1	50-60	Textiles	1.8	13.3	8.9	2.9	8.4	6.2	7.4	9.7	14.8
11.2	61-63	Apparel	1.7	12.0	3.1	2.4	5.5	5.7	4.5	8.8	4.9
12	64-67	Shoes, hats, umbrellas, etc.	3.5	12.4	4.5	5.5	6.0	5.0	10.0	19.3	12.1
13	68-70	Stone, ceramic & glass products	2.1	10.6	6.3	2.7	9.4	2.2	11.2	23.9	15.3
14	71	Jewelry & precious metal products	2.5	22.4	9.6	0.0	3.3	9.7	8.7	15.0	19.7
15	72-83	Base metals and their products	0.5	10.1	8.1	3.6	7.7	2.9	10.4	13.0	12.4
16	84-85	Electrical and Mechanical machines	7.7	7.4	7.7	4.4	6.9	3.6	9.8	11.9	9.9
17	86-89	Transport equipment	9.7	28.2	45.2	11.2	11.8	8.5	12.2	16.8	13.8
18	90-92	Photographic, precision instruments	8.3	7.6	6.4	2.5	4.2	5.1	9.7	12.5	13.3
19	93	Arms & munitions	2.2	7.7	5.1	0.0	na	0.8	13.7	8.8	10.2
20	94-96	Furniture & Assorted products	3.1	14.1	5.4	9.8	10.0	6.3	9.1	17.1	14.2
21	97-98	Objets d'Art	0.0	n.a.	7.8	0.0	6.8	2.6	0.0	6.4	9.3
		Average Standard Deviation	5.8	12.8	14.3	8.6	10.7	6.3	11.8	17.0	16.7
		Simple Average Tariff		16.6	12.8	9.6	6.2		15.2	23.3	15.6
		Coefficient of Variation		77.1	111.9	89.8	173.3		77.4	73.1	107.1

Sources: ASEAN Secretariat, CEPT Product Lists (July 1997/1998); Centre for International Economics, *Vietnam February 1998 Tariff*, Cambodia Customs House 1998

3 The Lao People's Democratic Republic: AFTA and the Potential for Export Growth

On July 23, 1997, the Lao People's Democratic Republic became a full member of ASEAN. The Lao PDR also joined the ASEAN Free Trade Area (AFTA) and began implementing the Common Effective Preferential Tariff (CEPT) scheme in January 1998. AFTA will clearly create additional trade with the ASEAN partner countries and this trade creation will be welfare improving. AFTA also provides increased access to the markets in the ASEAN partner countries which provides opportunities for the Lao PDR's exports and helps improve her terms-of-trade. However, the discriminatory nature of this trade liberalization leads to welfare-reducing trade diversion. In this chapter, we use a simple Computable General Equilibrium (CGE) model to make an overall evaluation by quantifying these gains and losses.

Given the very limited information available on the Lao PDR's domestic production structure, the model presented in this chapter is much less demanding in terms of data requirements than conventional general equilibrium models. Only a single production sector is included, producing a nontraded good which is differentiated from all traded goods. However, we are able to include 22 traded goods, which is important as there is substantial variation in protection rates and in the AFTA-induced reductions in protection by sector and by trading partner. The model allows us to decompose the welfare changes which occur with trade liberalization into three components: welfare gains resulting from trade creation, welfare losses resulting from trade diversion and welfare gains resulting from terms-of-trade improvements.

In Section 3.1, we review the current trade regime in the Lao PDR. The direction of trade, the composition of trade and the structure of protection are reviewed, and the export potential of the Lao PDR are discussed. Section 3.2 first presents the structure of the simple CGE model used for the analysis. Then, the simulation results are examined to see how a range of reforms, including current AFTA commitments and extensions to MFN liberalization, will change the trade pattern, tariff revenues and welfare.

3.1 The Lao PDR's Trade Regime

Since the latter half of the 1980s, both internal and external factors have worked favorably for the Lao PDR to set the stage for accession to ASEAN. The adoption of the New Economic Mechanism (NEM) in 1986 signaled a significant shift of the Lao PDR's economy from a centrally planned system to a market system. Since then, public enterprises have been given operating autonomy, and the private sector has been authorized to participate in economic activities. In 1987, the Lao PDR abolished the practice of "cost plus" pricing for state enterprises in favor of market-determined prices. In 1988, the Lao PDR abandoned the multiple exchange rate system and moved to a single rate close to that previously prevailing in the parallel market.

Trade liberalization has been one of the pillars of the economic reforms; under the NEM, the state monopoly on trade in most goods has been eliminated, tariff rates have been lowered and quantitative restrictions and specific licensing requirements have been reduced. In the meantime, the end of the Cold War eased the political tension between the Lao PDR and its Southeast Asian neighbors. The collapse of the former Soviet Union and other former Council for Mutual Economic Assistance (CMEA) countries led to a substantial shift in the Lao PDR's direction of

trade from the nonconvertible to the convertible currency area and especially towards the ASEAN countries. Throughout the period, the approach of the Lao PDR's economic reforms has been "gradual" rather than "big bang." Participation in AFTA is a logical way to accelerate its transition to a more market-oriented economic system. However, the Lao PDR's reform efforts have slowed or even reversed in some areas in the recent years, especially after the regional financial crisis. Binding its liberalization schedule with AFTA may be a way to provide the policy credibility needed to promote further integration into the Southeast Asian and world economies.

3.1.1 Recent Trends in Merchandise Trade

Since the adoption of the New Economic Mechanism (NEM), the Lao PDR has liberalized substantially its trade and investment regime and strengthened its economic ties with neighboring countries. However, the Lao PDR's economic difficulties were exacerbated by the regional financial crisis which started in Thailand in 1997. Given the close links between the Lao PDR and Thailand, the devaluation of the Thai baht put considerable downward pressure on the kip.[17] Monetary expansion linked to extrabudgetary expenditures exacerbated the situation. Inflation rose from a twelve month rate of 27 percent in December 1997 to 142 percent in December 1998 (IMF, 1999b).

Figure 3.1 and Figure 3.2 show the evolution of the Lao PDR's imports and exports for the period 1994-1998. Figure 3.1 shows that recorded imports declined by 6.0 percent in 1997 and 14.7 percent in 1998 partly due to the depreciation of the currency and partly due to the increasingly restrictive trade and foreign exchange regime. Figure 3.2 demonstrates that exports grew by 6.3 percent in 1998 following a small decline of 1.4 percent in 1997. The rise in 1998 was driven by a sharp increase in electricity exports and a recovery in wood exports.

3.1.2 Import Regime

The Direction and Composition of Imports

Since trade data by commodity and direction were not available from national sources, the data in this section were estimated using partner data obtained from the UN COMTRADE System for the year 1995. Since the Philippines did not report to COMTRADE in 1995, 1996 trade data for the Philippines were used. Data for Taiwan (China) were obtained from the category "Other Asia" in the system. However, three limitations should be borne in mind. The first limitation is that Vietnam and some other smaller trading partners did not report their data to the COMTRADE System.[18] It should also be borne in mind that the tables do not include trade in electricity since the COMTRADE data did not include it. Finally, given the long border with China, Vietnam, and Thailand, unofficial trade[19] between the Lao PDR and these countries is significant, but is not included in the analysis.

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[17] The commercial bank rate rose from 954 in 1996 to 2,135 in 1997 and 4,274 in 1998. Similarly, the parallel market rate rose from 975 in 1996 to 2,205 in 1997 and 4,750 in 1998 (IMF, 1999b).

[18] While Vietnam is not included in the tables in this section, an estimate was incorporated in the empirical analyses in section 3.2 for completeness.

[19] The unrecorded values are estimated at about 25-30 percent of the total trade.

Figure 3.1 The Level and Composition of Merchandise Imports 1994-1998

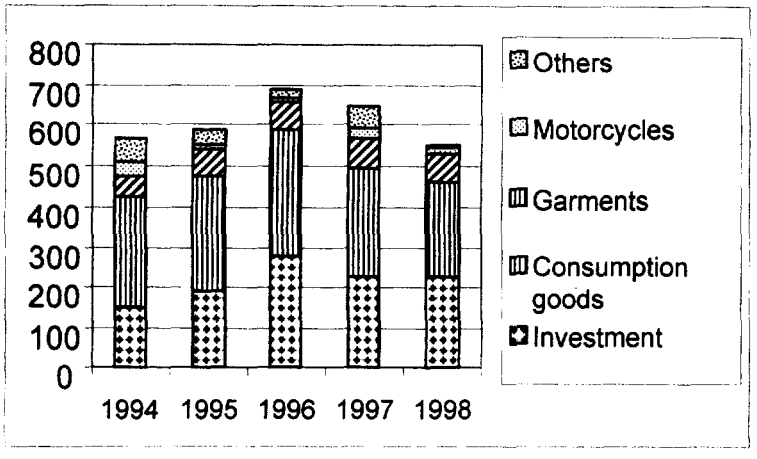
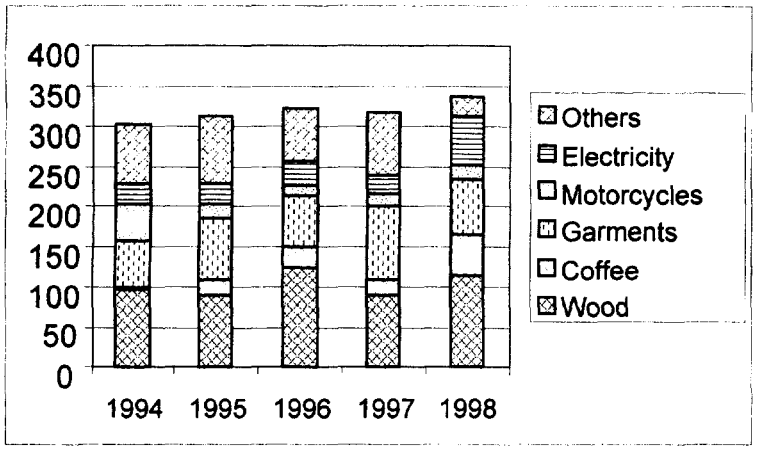


Figure 3.2 The Level and Composition of Merchandise Exports 1994-1998



In millions of U.S. dollars.
Source: IMF, 1999b.

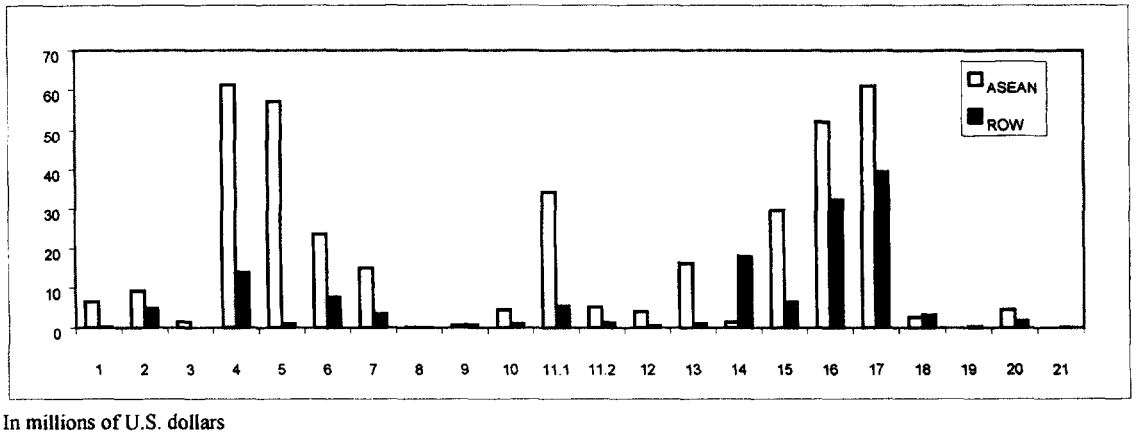
Table 3.1 shows the matrix of Lao PDR imports by source and destination countries. With one exception, the products have been classified by the 21 sections of the Harmonized System (HS) Conversion. This classification was chosen since it is consistent with the ASEAN nomenclature which is an elaboration of the 8-digit Harmonized Commodity Description and Coding System (HS) of the World Customs Organization (WCO). The exception is that Section 11 has been split into the *textile* (HS 50-60) and *apparel* (HS 61-63) industries because of the importance of the garment industry for the Lao PDR. This division is useful because the garment industry is more labor intensive than the modern textile industry. Throughout this chapter, the classification into these 22 categories, the 21 HS sections with one additional sector resulting from separation of textiles & clothing, is used for the sectoral analyses.

On the import side, ASEAN is the most important source of imports accounting for 73.1 percent of the Lao PDR's total imports in 1995 (excluding Vietnam). Thailand alone represents 65.1 percent of imports, followed by Singapore (7.6 percent). In contrast, imports from Indonesia, Malaysia, and the Philippines are relatively small, representing 0.3 percent, 0.2 percent, and 0.03 percent of imports respectively. Other major partners in 1995 were China (8.9 percent), EU15 (7.2

percent) and Japan (5.0 percent). Textiles, which are the primary inputs into the clothing sector, were sourced mainly from Asian countries: Thailand (84.5 percent), followed by Taiwan (China) (5.2 percent), and China (5.1 percent).

Figure 3.3 summarizes the composition of the Lao PDR's imports and shows the importance of ASEAN and the rest of the world as sources. Its main imports consist of *transport equipment* (18.8 percent), *electrical and mechanical equipment* (15.8 percent), *processed foods, drinks and tobacco* (14.0 percent), *oil and mineral products* (10.9 percent), and *textiles* (7.5 percent). Processed foods are relatively more important in imports from ASEAN. Some raw materials such as *oil and mineral products*, *textiles*, *stone and ceramics* are sourced more from ASEAN. The rest of the world is important as a source of the two most important import categories, *transport equipment* (27.4 percent) and *electrical and mechanical equipment* (22.6 percent).

Figure 3.3 Lao PDR's Imports ASEAN vs. Non-ASEAN



In millions of U.S. dollars
Source: 1995 UN Comtrade partner data

Protection on Imports

Table 3.2 shows the Lao PDR's statutory tariff structure. The Lao PDR's tariff schedule introduced in 1993, includes 3,551 lines based on the Harmonized System (HS). The current tariff rates range from 5 percent to 40 percent with 6 tariff bands (5, 10, 15, 20, 30, 40).

Table 3.2 The Lao PDR's Statutory Tariff Rates 1997

Tariff Rates	Tariff Line	Share (%)
5	1820	51.3
10	1151	32.4
15	7	0.2
20	246	6.9
30	201	5.7
40	123	3.5
Prohibited	3	0.1
Total	3551	100

Source: Customs Department, Vientiane

Table 3.1 Lao PDR's Imports 1995 ($1,000)

Description	Thailand	Singapore	Indonesia	Malaysia	Philippines	EU15	USA	Japan	China	Taiwan	Hong Kong	Australia	Norway	Switzerland	Canada	ROW	Total	Share(%)
Animals & animal products	6274	323	0	0	0	9	0	0	61	2	0	24	25	0	0	38	6756	1.3
Vegetable products	9236	0	0	0	0	870	0	1660	2418	9	0	19	0	0	0	0	14211	2.7
Animal & vegetable oils	1456	14	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1473	0.3
Processed foods, drinks & tobacco	31306	28861	932	76	0	1508	0	0	12398	0	0	5	0	0	0	9	75094	14.0
Oil and minerals products	56931	148	0	0	0	3	0	0	990	0	0	3	0	0	0	69	58143	10.9
Chemical products	22720	727	53	31	151	2826	0	3039	1042	8	0	392	0	26	0	353	31367	5.9
Plastic & rubber products	14751	20	216	4	0	1755	7	186	1083	493	60	4	1	2	0	27	18609	3.5
Skins & furs and their products	199	1	0	0	0	34	28	0	17	0	0	0	0	0	0	21	298	0.1
Wood & wood products	610	0	0	0	0	7	0	21	20	19	6	0	0	0	0	696	1378	0.3
Pulp of wood & paper	4547	15	29	20	0	226	11	85	219	408	79	4	0	6	0	40	5690	1.1
Textiles	33709	517	15	95	0	298	4	108	2016	2084	267	7	0	0	0	784	39903	7.5
Apparel	5215	8	0	50	0	99	0	9	688	522	0	19	0	0	0	2	6610	1.2
Shoes, hats, umbrellas, etc.	4069	2	0	9	0	20	70	5	329	43	0	0	0	2	0	2	4551	0.9
Stone, ceramic & glass products	16298	15	12	0	0	134	7	5	777	4	0	55	0	14	0	18	17339	3.2
Jewelry & precious metal products	1284	176	0	0	0	33	0	0	6	0	0	18048	0	0	0	0	19547	3.7
Base metals & their products	28149	1510	0	12	0	1357	8	4198	549	86	2	201	26	0	0	32	36131	6.8
Electrical & mechanical equipment	44921	6294	190	744	0	10161	793	7265	11125	1239	0	1294	108	213	115	139	84601	15.8
Transport equipment	60278	807	0	0	0	16274	562	9441	12848	84	0	34	0	4	0	137	100468	18.8
Photographic, optical, precision instruments	1644	1053	0	16	4	1746	39	785	217	20	0	41	0	38	277	136	6016	1.1
Arms & munitions	0	0	0	0	0	0	0	0	363	0	0	2	0	0	0	0	365	0.1
Miscellaneous articles	4594	21	8	4	0	894	0	3	364	293	174	71	0	0	26	69	6520	1.2
Objets d'art	11	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	75	0.0
Total	348199	40513	1454	1060	155	38321	1530	26807	47528	5314	587	20223	159	306	418	2571	535147	100.0
Share (%)	65.1	7.6	0.3	0.2	0.0	7.2	0.3	5.0	8.9	1.0	0.1	3.8	0.0	0.1	0.1	0.5	100.0	

Source: 1995 COMTRADE, 1996 COMTRADE for the Philippines.

Overall, the Lao PDR's tariff rates imply a relatively low level of protection with a simple average of 9.6 percent and weighted average of 14.7 percent. Effective May 10, 1997, the tariff rates for some "luxury" commodities which had been above 40 percent,[20] were reduced down to a maximum 40 percent with the duties above 40 percent being replaced by excise taxes (Government of the Lao PDR, May, 1997). Tariffs subject to the reform included 41 tariff lines covering motor vehicles, motorcycles, beer, tobacco, and household appliances.

Table 3.3 shows the differences in the tariff rates weighted by the Lao PDR's imports sourced from ASEAN and the rest of the world. While the tariff rates are the same at the tariff line level, the weighted averages differ because of differences in the mix of imports in each group. Average tariffs differ slightly between ASEAN and the rest of the world, with duties on imports from ASEAN averaging 15.2 percent as against 13.4 percent from the rest of the world. The weighted average tariff rates for *animal and animal products*, *vegetable products* and *processed foods, drinks & tobacco* are considerably higher for imports from the rest of the world. Conversely, ASEAN partners face a substantially higher tariff than the rest of the world for *transport equipment.*

Statutory tariff rates, however, are not indicative of actual tariff collections since there are exemptions to the tariffs. The special privileges granted for foreign firms are the most important source of tariff exemptions; foreign investors are required to pay import duties for the importation of production equipment and facilities, spare parts and other equipment used in the project or business operations at the rate of 1 percent of the imported value; raw materials and intermediate components imported for export processing are exempt from import duties; raw materials and intermediate components imported for the purpose of achieving import substitution are eligible for special duty reductions.

There is also a "convention" system which consists of special arrangements between the authorities and private importers on tax payments case by case basis. Under this system, a company can obtain a "convention" that clears it to import or export a specified amount (or value) of specified products free of all taxes including trade taxes (Finger and Castro, 1997). In addition, *ad hoc* tariff exemptions are often granted, principally for imports by state enterprises. The use of appreciated exchange rates for customs valuation purposes has been another source of shortfalls in import duty collections. In 1998/99, a rate of 4,000 kip per dollar was used for import valuation while the commercial bank rate averaged 6,345 kip per dollar.

In the Lao PDR, non-tariff barriers are less transparent and more difficult to quantify than in many other countries. If has been frequently reported that the controls carried over from the previous systems persist in practice, the customs clearance procedures are slow, and that the licensing system is inefficient. Recently, the Lao PDR appears to have increased some government controls.

[20] Before the reform, the higher rates were applied to cigarettes (60 percent), beer (80 percent), and vehicles (up to 150 percent.)

Table 3.3 Statutory MFN tariff rates applying to imports form ASEAN and ROW

Section	HS	Description	Total	ASEAN	ROW
1	1-5	Animals & animal products	7.1	6.8	17.6
2	6-14	Vegetable products	13.0	9.5	19.4
3	15	Animal & Vegetable oils	10.1	10.1	10.0
4	16-24	Processed foods, drinks & tobacco	30.7	29.1	37.6
5	25-27	Oil and minerals products	5.0	5.0	5.9
6	28-38	Chemical products	10.5	11.2	8.3
7	39-40	Plastic & rubber products	12.1	12.2	11.2
8	41-43	Skins & furs and their products	13.7	13.5	14.1
9	44-46	Wood & wood products	31.0	31.1	29.6
10	47-49	Pulp of wood & paper	8.8	9.0	7.1
11.1	50-60	Textiles	9.5	9.5	9.9
11.2	61-63	Apparel	10.3	10.2	10.9
12	64-67	Shoes, hats, umbrellas, etc.	10.1	10.1	10.1
13	68-70	Stone, ceramic & glass products	5.2	5.1	6.8
14	71	Jewelry & precious metal products	5.0	5.0	5.0
15	72-83	Base metals & their products	5.9	6.0	5.3
16	84-85	Electrical & mechanical equipment	7.7	8.8	5.9
17	86-89	Transport equipment	26.9	32.7	17.9
18	90-92	Photographic, optical, precision instruments	6.0	6.4	5.6
19	93	Arms & munitions	30.0	n.a.	30.0
20	94-96	Miscellaneous articles	13.2	13.9	11.4
21	97-98	Objets d'art	5.0	5.0	5.0
		Total	14.7	15.2	13.4

Source: Authors' calculations.

The Prime Minister's Order 06/PM of March 1999 sharply reduced the number of licensed trading companies into six trading groups. Each importer is licensed to import no more than the allocated quantity and individual shipments need to be licensed by the Ministry of Commerce and Transport (IMF, 1999b). Quotas apply to the importation of fuel and lubricants, steel bars for construction, all types of cement, and all types of motor vehicles and motor cycles. The authorities continue to use administrative measures to allocate foreign exchange.

3.1.3 Export Regime

The Direction and Composition of Exports

Table 3.4 presents the composition of the Lao PDR's exports by 22 HS sections and destination countries (excluding Vietnam). On the export side, the share of the industrial countries is more important than the import side. 31.2 percent of the Lao PDR's exports go to ASEAN. Thailand accounts for 27.0 percent of the Lao PDR's exports, followed by Singapore (4.2 percent) and Indonesia (0.01 percent). The EU15 represents 38.6 percent of the Lao PDR's exports followed by Japan (11.6 percent), Taiwan (China) (6.7 percent) and the USA (4.3 percent) in 1995.

Figure 3.4 summarizes the difference between exports to the ASEAN partners and to the rest of the world. Overall, the Lao PDR's main exports are *wood and wood products* (45.0 percent), *apparel* (33.3 percent), and *vegetable products* (11.7 percent). 78.1 percent of Laotian exports to ASEAN are *wood* followed by *vegetable products* (9.3 percent). For the rest of the world, the

share of *wood* is smaller (30.0 percent) whereas the share of *apparel* (48.3 percent) is more important. In particular, the importance of the garment industry in exports to the EU15 is striking. In 1995, it totaled $67.2 million, with the EU15 receiving 78.9 percent of the Lao PDR's exports of garments. The other major destinations for its garments are also industrial countries. The EU15, USA and Norway combined accounted for 96.6 percent of the market. It is a typical trade pattern that the Lao PDR imports raw materials from Thailand as reflected in the importance of *textile* category in the Lao PDR's imports, and exports *garments* to the industrial countries. In contrast, exports of garments to ASEAN are minimal, with only 0.1 percent of the total Lao PDR's exports of garments. The Lao PDR exports *vegetable products* more towards the rest of the world than to ASEAN markets, with $29.8 million and $7.4 million respectively. Coffee represents 80.5 percent of the exports in this category and is shipped mainly to Singapore and the EU15.

The current export structure of the Lao PDR is highly concentrated in a few agricultural commodities and in the garment industry (see Table 2.2 in Chapter 2). The RCA index showed that its export shares of *wood* and *coffee* were approximately 34 times and 28 times the world average respectively in 1997. The index also confirmed the recent development of the garment industry in the Lao PDR's exports. The RCA increased steadily in the first half of the 1990s and registered 12.3 in 1997. Besides garments, there are very small exports of other manufacturing products.

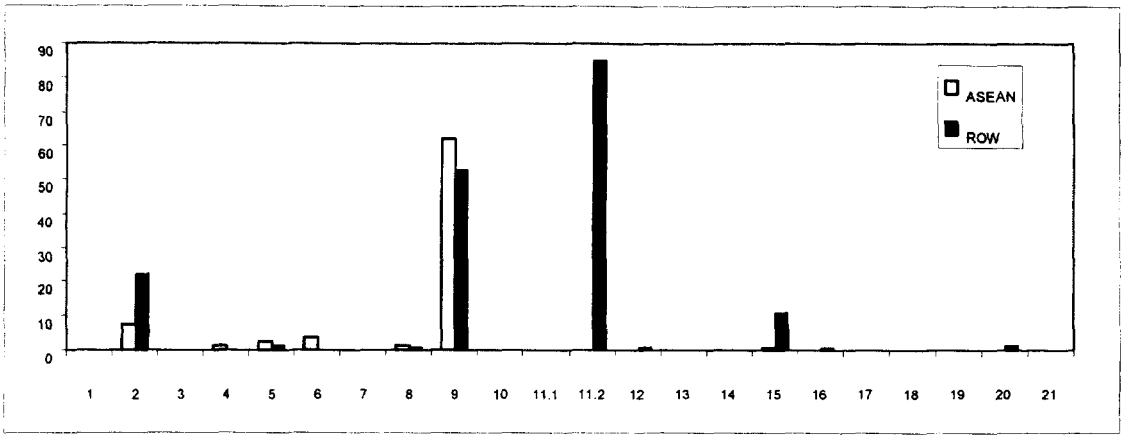
Implications of AFTA for the Lao PDR's Exports

Since the Lao PDR's domestic market is small and the purchasing power of its population is low, it is clear that the opportunities associated with inward-looking strategies are limited. The promotion of export-oriented industries was one of the pillars of the *1996-2000 Socio-Economic Development Plans* (State Planning Committee, 1996). Accession to AFTA offers increased market access partly from ASEAN partners' tariff cuts against the Lao PDR's exports, and partly by helping to meet the Rules of Origin requirements for GSP status in some industrialized countries, and particularly the European Union.

Agriculture is the principal economic sector in the Lao PDR. It accounts for 52.1 percent of total value added in 1998[21] and employs 80 percent of the population (IMF, 1999b). While the average increase of 4.9 percent in agriculture and forestry during the period 1994-1998 is slower than the 11.5 percent in industry and 7.3 percent in services, the sector remains the largest source of employment at least in the medium-run. Not only is agricultural development required for its own sake, but because it generates income for farmers and, in turn, creates demands for consumer goods.

[21] Of which crops, livestock & fishery, and forestry represented 52.2 percent, 37.3 percent, and 10.5 percent respectively (IMF,1999b).

Figure 3.4 Lao PDR's Exports ASEAN vs. Non-ASEAN



In millions of U.S.dollars.
Source: 1995 UN Comtrade partner data

This is likely to improve opportunities for simultaneous development of manufacturing and service activities in the rural areas through its backward and forward linkages. The *1996-2000 Socio-Economic Development Plans* stress the importance of the establishment of an agriculture-forestry economic structure linked to industry and services (State Planning Committee, 1996).

Currently, subsistence agriculture and small-scale animal husbandry dominate agricultural activity in the Lao PDR and most of the farmers are dependent on paddy production. However, since the introduction of the New Economic Mechanism (NEM), the transition from subsistence to commercial agriculture has commenced. Under the NEM, agricultural procurement prices have been freed, farmers have begun to receive payments in cash for their produce. The state monopoly over the procurement and distribution of rice was terminated and replaced by a system of contract trading. The farmers responded to the price signals relatively well and small entrepreneurs and traders are also emerging. The striking feature of performance under the NEM is that the production of non-rice crops has expanded much faster than paddy production.[22] In addition to coffee, the market-oriented cultivation of tree, cotton, sugar cane, tobacco, beans, oleaginous crops, fruit trees, rubber trees, swine, poultry raising, and fishery are at present expanding in several areas (State Planning Committee, 1996).

[22] During the period 1986-92, the forestry and rice sub-sectors performed poorly with their value added growing by -9.3 percent and 1.7 percent annually. In contrast, the non-rice crops and livestock performed strongly, with their respective value added growing by 9.7 percent ad 5.7 percent annually (World Bank, 1995).

However, current recorded exports of agricultural products, excluding wood and coffee, are clearly low relative to the population engaged. It has been pointed out that the most significant barrier to agricultural trade is that Thailand imposes extremely high tariffs and complicated NTBs on agricultural exports from the Lao PDR. This discourages official agricultural trade between the Lao PDR and Thailand (Thailand Development Research Institute, 1996). For instance, in 1995, Thailand's recorded share of *vegetable products* out of the Lao PDR's total exports in this category was only 3.7 percent (Table 3.4)

The recent development of the garment industry revealed the positive roles of foreign direct investment[23] in the development of the Lao PDR's labor-intensive industries. Because of the absence of MFN access to the US market, the Lao PDR's ability to export to this market is limited. The performance of the garment industry is heavily dependent on market access in the EU, where it has not only MFN treatment, but preferential access under the Generalized System of Preferences (GSP). However, GSP privileges for the EU market were effectively lost at the end of 1995 because the Lao PDR was unable to meet the rules of origin requirements at a national level. This severely affected the Lao PDR's exports in 1996. Under the EU scheme, cumulation is permitted on a regional basis when a series of processing operations is carried out within ASEAN.[24] This provision helped the Lao PDR to restore its GSP status with the EU in 1997.

The transportation oligopoly which governs transit trade through Thailand remains a serious non-tariff barrier on the Lao PDR's exports by inflating transportation costs.[25] While it is beyond the scope of this study to assess the consequences of this trade barrier, it is necessary to take account its impacts on the measured benefits of accession to AFTA. To this end, Box 3.1 describes how the presence of excess transport costs is likely to affect the impacts of regional integration. The key result is that the presence of such charges is likely to substantially increase the benefits from regional trade liberalization. However, in contrast with the case of an export tax (see Box 4.2), it is likely that these gains would accrue to monopolistic transportation companies.

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[23] The opening of the Lao PDR to foreign investment began with the promulgation of the Foreign Investment Law in 1988. It assured protection against nationalization or confiscation, guaranteed the right to repatriate profits, and offered various tax incentives. In 1994, the law on the Promotion and Management of Foreign Investment in the Lao PDR was promulgated as a replacement for the already liberal 1988 Code. Under the new law, the tax regime has been simplified and a single 20 percent of profit tax is applied replacing the 15-50 percent multiple rates.

[24] Under the rules of origin scheme of the EU, the member states of ASEAN, Andean Group, and Central American Common Market (CACM) are treated as a single entity for the purpose of acquiring origin status. Similar rules apply to the Japanese arrangement for ASEAN and to the US arrangement for ASEAN, Andean Group and Caribbean Common Market (CARECOM).

[25] Until 1994, a company called T-L Enterprise had a monopoly of transit shipments across Thailand to and from the Lao PDR. Since 1994, other companies have been permitted to carry goods to and from the Lao PDR, but T-L Enterprise is still the only agent authorized to officially process shipments into and out of the Lao PDR through Thailand. The company is levying at minimum a 20 percent premium and several companies insist that the cost of shipment from the Lao PDR to Bangkok is as large as the cost from Bangkok to Europe (Finger and Castro, 1997). Being "land-locked" geographically is already a serious disadvantage -- the high transit costs further erode the Lao PDR's cost advantages.

Table 3.4 Lao PDR's Exports 1995 ($1,000)

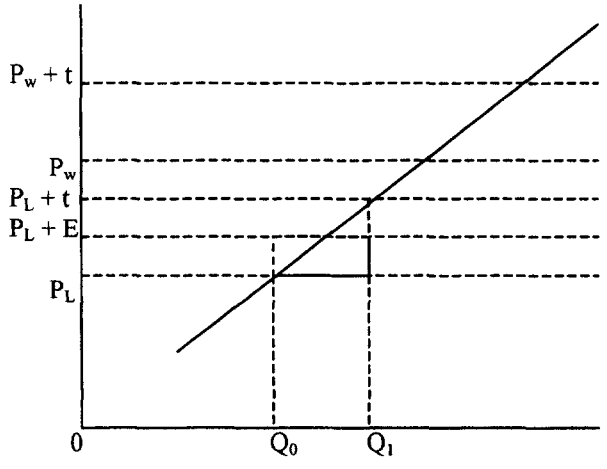
Description	Thailand	Singapore	Indonesia	Malaysia	Philippines	EU15	USA	Japan	China	Taiwan	Hong Kong	Australia	Norway	Switzerland	Canada	ROW	Total	Share(%)
Animal & animals products	88	0	0	0	0	66	0	3	3	0	0	0	0	0	0	2	162	0.1
Vegetable products	1098	6340	0	0	0	12768	228	798	4871	163	0	1	0	153	990	2483	29894	11.7
Animal & vegetable oils	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.0
Processed foods, drinks & tobacco	967	0	1	0	0	14	0	0	11	0	0	0	0	0	0	20	1013	0.4
Oil and minerals products	2258	245	0	0	0	357	0	0	6	0	0	0	0	0	0	843	3709	1.4
Chemical products	2	3971	15	0	0	69	0	0	1	0	0	0	0	0	0	0	4058	1.6
Plastic & rubber products	15	0	0	0	0	98	0	0	3	74	0	0	0	0	0	100	291	0.1
Skins & furs and their products	1167	9	0	0	0	166	166	0	18	0	0	0	0	5	12	113	1657	0.6
Wood & wood products	62292	0	0	0	0	5500	451	28593	1050	16367	853	31	0	0	16	0	115153	45.0
Pulp of wood & paper	93	0	0	0	0	43	6	0	0	0	0	0	0	0	2	6	150	0.1
Textiles	162	14	0	0	0	156	0	0	0	0	11	0	0	0	1	2	346	0.1
Apparel	87	13	4	0	0	67236	10111	77	0	636	0	2	4990	972	817	311	85258	33.3
Shoes, hats, umbrellas, etc.	4	5	0	0	0	558	7	0	4	0	0	0	0	0	0	0	577	0.2
Stone, ceramic & glass products	2	0	0	0	0	21	0	3	0	0	0	0	0	0	0	0	25	0.0
Jewelry & precious metal products	2	0	0	0	0	0	11	0	7	0	0	0	0	0	0	28	48	0.0
Base metals & their products	616	0	4	0	0	10010	0	0	197	0	0	0	0	0	0	293	11121	4.3
Electrical & mechanical equipment	17	47	0	0	0	47	0	3	272	0	0	74	0	2	100	32	595	0.2
Transport equipment	89	2	0	0	0	3	0	0	0	0	0	0	0	0	0	20	114	0.0
Photo, optical, precision instruments	0	0	1	0	0	50	0	0	0	0	0	0	0	0	2	3	56	0.0
Arms & munitions	160	0	0	0	0	0	3	91	5	0	0	1	0	0	32	0	291	0.1
Miscellaneous articles	0	0	1	0	0	1579	0	0	0	0	0	0	0	0	0	0	1580	0.6
Objets d'art	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	0.0
Total	69122	10646	26	0	0	98747	10981	29568	6449	17240	864	109	4990	1132	1972	4257	256103	100.0
Share (%)	27.0	4.2	0.0	0.0	0.0	38.6	4.3	11.5	2.5	6.7	0.3	0.0	1.9	0.4	0.8	1.7	100.0	

Source: 1995 COMTRADE, 1996 COMTRADE for the Philippines.

Box 3.1 Excess Transportation Costs between the Lao PDR and Thailand

It is frequently argued that road transportation between the Lao PDR and Thailand is controlled by a cartel that levies a markup over the rates that would prevail with a competitive market. Some reports suggest that the markup is roughly equal to the shipping cost from Bangkok port to Europe (Finger and Castro, 1997). Since the overland route to Bangkok is a vitally important transport artery for the Lao PDR, the impacts of excessive charges could be important for any overall evaluation of the impacts of trade liberalization. A full evaluation of the importance of this distortion would require knowledge of the magnitude of the distortion, and of the recipients of the receipts from the markup. Since neither of these pieces of information is available, perhaps the best that can be done is to put together a qualitative assessment of how the excess transport charges affect the results of the evaluation. The relevant distortions are shown in Figure 3.A.

Figure 3.A Exports from the Lao PDR to Thailand



An excess transport charge is very much like an export tax, with the difference that some of the proceeds of this charge probably accrue to foreigners. Suppose P_w in Figure A represents the world price. Prior to removal of the tariff, exporters who ship products to Thailand receive the net price P in Thailand ($P_w + t$) less the import protection levied by Thailand (t), and the transport charges paid (including the markup). Since the competitive transport cost would just cover the real costs of transportation (assuming zero profits in this industry), there are no net welfare consequences from charges in a volume of exports. However, the excess transport charge, shown by E, is analogous to a tax, and changes in the volume of exports passing this barrier have real welfare consequences (Martin, 1997).

The removal of the tariff on exports from the Lao PDR to Thailand raises the price in the Lao PDR from P_L to $P_L + t$ and export volumes from Q_0 to Q_1. The increase in the volume exported from Q_0 to Q_1 generates a welfare increase of $E(Q_1 - Q_0)$ because the value of the goods at the border exceeds the real costs of supplying them by E per unit (shaded area). This gain is in addition to those generated in a model ignoring the excess transport costs. The key result is that the presence of excess transport costs will increase the benefits of regional liberalization. These additional second-best benefits may be quite substantial given the apparently large excess transport costs levied. If the excess transport charges accrued entirely to residents of the Lao PDR, then this would be an additional welfare gain to the Lao PDR from its improvements in market access. However, it is likely that these gains would accrue to monopolistic transportation companies. If the excess transport charges are shared between the Lao and Thai residents, then only part of the welfare gains from this source would accrue to the Lao PDR.

3.2 Modeling Approach

3.2.1 Model Structure

A single country multi-sector computable general equilibrium (CGE) model was developed to assess the key effects of AFTA accession by the Lao PDR. The model is an extended version of a model developed by Martin (2000) for Lebanon, which is in turn, an extension of the 1-2-3 general equilibrium model (Devarajan, Delfin, Lewis, and Robinson, 1994). The model is highly disaggregated in the sector of primary interest, international trade, by commodity and by trading partner and highly aggregated in the domestic nontraded sector. This strategy makes greatest use of the available data and modeling resources, and allows full general equilibrium modeling to be undertaking in countries like the Lao PDR where data availability is extremely limited. Its data requirements are minimal, with estimates needed only of total GDP, total absorption and trade and tariff data at the level of disaggregation used for traded goods.

In the model, 23 consumer goods are identified, of which 22 are imported and one is produced and sold domestically. Producers in the Lao PDR also produce 23 goods. One of these is the domestic nontraded good while the other 22 are the same composite commodities identified on the consumption side. The production function is assumed to exhibit constant returns to scale technology. For the nontraded good, all output is produced and sold in the domestic market and the price is endogenously determined by the market-clearing condition equating local production to domestic demand. Traded goods can be sourced or sold either on the domestic or export markets. We invoke the small country assumption and assume that the prices of traded goods are exogenously given.

Parameters

Four elasticities are used to specify the model. The elasticity of substitution in consumption (σ_{cons}) measures the ease of substitution among the 23 consumption goods including 22 imported goods and the composite nontraded good. The elasticity of transformation in production (σ_{prodn}) characterizes the ease with which resources can be switched among the 23 products of the output mix. The elasticity of substitution in import demand (σ_{source}) and the elasticity of substitution in export supply (σ_{destn}) measure the willingness of the Lao PDR to substitute among the products supplied by different regions and the ability to transform outputs into the goods demanded by the different destinations respectively. The base parameter values are chosen as $\sigma_{cons} = 1.5$; $\sigma_{prodn} = 2.0$; $\sigma_{source} = 3.0$; $\sigma_{destntn} = 4.0$.

Equations of the Model

The model focuses on the real side of the economy with particular emphasis on the response of the economy to trade policy changes. Using duality, prices are set as independent variables; consumer behavior is modeled by means of expenditure function and producer behavior is specified using revenue functions. The set of equations used in the model is presented in Table 3.7. Variables and model coefficients are defined in table 3.8. The equations are partitioned into 5 groups. Except in equation block (5), the equations are

expressed in linear percentage changes from a baseline. For ease of interpretation, lower case lettering is used for the variables representing percentage changes and upper case lettering is employed for the levels of variables or for coefficients.

(1) **Final Demand**. Consumers choose their purchases to minimize their expenditures subject to two level Constant Elasticity of Substitution (CES) expenditure functions. The first level of demand is represented by a CES expenditure function describing substitution between 23 consumable commodities including the domestic nontraded good and 22 imported goods. The demand equation for commodity i (equation 2) is derived by differentiating the expenditure function with respect to the price of commodity i. Associated with the expenditure function is a composite price which serves as the consumer price index (equation 3). At the second level, there are the expenditure functions for each imported good defined over imports from different sources (equation 4). When there is a preferential trade liberalization, consumers substitute between different import sources. For each import expenditure function, there are corresponding import demand equations (equation 5) and composite import prices (equation 6).

(2) **Output Supply.** There is an exogenous level of output determined by factor endowments and technology. Producers maximize revenue subject to two-level Constant Elasticity of Transformation (CET) functions. At the total revenue stage, producers choose their inputs between 23 commodities subject to a given output (equation 7). The optimally chosen supplies of goods are obtained by differentiating the revenue function with respect to their prices (equation 8). Equation 9 is the composite price of output. Symmetrically with the import side, an additional level was incorporated in the nest for output to reflect the differences in the commodities demanded by each export market. Equation 10 specifies the export revenue functions for each exported commodity i. There are associated export supply functions (equation 11) and the composite price for exports (equation 12).

(3) **Market Equilibrium Conditions.** The supply of nontraded goods must equal the demand in order to maintain balance in the market for nontraded goods (equation 13). The income expenditure condition, or alternatively the balance of trade constraint, requires that expenditure equal the sum of revenue from production, tariff revenue, plus any financial inflows from abroad (equation 14).

(4) **Miscellaneous Equations.** Suppose there is a trade liberalization, the domestic prices of imports decrease (equations 15-16) and there is a change in tariff revenues (equation 17).

(5) **Decomposition of Welfare Changes.** In the model, welfare changes are measured using the standard equivalent variation (EV). In order to facilitate analysis of the sources of welfare changes, a decomposition based on that developed by Hertel and Huff (1997) is utilized. The total Equivalent Variation (equation 18) is broken down into three component parts on a money metric basis. The welfare benefit from *trade creation* is measured by the equilibrium quantity change in imports qm_{ij} of goods i from country j (where j = ASEAN countries), multiplied by the corresponding tariff revenue, $MTAX_{ij}$, summed over all the sectors and ASEAN countries (equation 19). Going back to Figure 2A, these welfare gains are approximated by the area aced. Similarly, the welfare loss from *trade diversion* is given by the equilibrium quantity change in imports, qm_{ij}, of goods i from country j (where j = ROW

countries), multiplied by the corresponding tariff revenue, $MTAX_{ij}$, summed over all the sectors and ROW countries (equation 20). The loss is measured by the area abdc in Figure 2B. Equation 21 approximates the contribution of the *terms-of-trade* where VX_{ij} represents the value of exports at world prices. pdx_{ij} is the percentage changes in the f.o.b. price. Thus, the welfare benefits resulting from the improvement in the terms-of-trade are measured by area P_pghP_w' in Figure 2D. Through GEMPACK's non-linear solution procedures, tariff revenues and trade values are updated over the course of the simulation and solved using a series of steps and extrapolations to effectively eliminate linearization bias (Codsi and Pearson, 1988).

A balance of payments constraint is imposed by setting foreign borrowing (f) exogenously. The production capacity (capacity) is fixed. Under the assumption that the Lao PDR is small, both the import price (pcif) and the export price (pdx) are given exogenously. The exchange rate is chosen to be the numeraire which is equal to unity throughout the simulation. The model contains 4mn + 6m - 4n + 7 equations and 4mn + 6m - 4n + 7 endogenous variables. The model was solved using the GEMPACK program.

Table 3.7 Model equations

Description	Equation	Subscript Range	Number
(1) Final Demands			
1. The expenditure function	$e = \sum_{i=1}^{m} SC_i\, p_i + u$	j=1,...m demands	1
2. The demand equations	$q_i = u - \sigma_{cons}(p_i - \sum_{j=1}^{m} SC_j p_j)$	i=1,...m demands j=1,...m demands	M
3. The consumer price index	$pc = \sum_{i=1}^{m} SC_i\, p_i$	j=1,...m demands	1
4. The import expenditure functions	$em_i = \sum_{j=1}^{n} SM_{ij}\, pm_{ij} + q_i$	j=1,...(m-1) demands j=1,...n countries	m-1
5. The import demand functions	$qm_{ij} = q_i - \sigma_{source}(pm_{ij} - \sum_{k=1}^{n} SM_{ik}\, pm_{ik})$	i=1,...(m-1) imports j=1,...n countries k=1,...n countries	(m-1)n
6. The composite import price	$p_i = \sum_{j=1}^{n} SM_{ij}\, pm_{ij}$	i=1,...(m-1) imports j=1,...n countries	m-1
(2) Output Supply			
7. The revenue function	$r = \sum_{i=1}^{m} SX_i\, p_i + capacity$	i=1,...m outputs	1
8. The output supply functions	$qx_i = capacity + \sigma_{prdn}(p_i - \sum_{j=1}^{m} SX_j\, p_j)$	i=1,...m outputs j=1,...m outputs	M
9. The composite price for output	$px = \sum_{i=1}^{m} SX_i\, p_i$	i=1,...m outputs	1
10. The export revenue functions	n	i=1,...(m-1) exports	m-1

	$revx_i = \sum_{j=1} SDX_{ij}\, pdx_{ii} + qx_i$	j=1,...n countries	
11. The export supply functions	$qdx_{ij} = qx_i + \sigma_{destn} (pdx_{ij} - \sum_{k=1}^{n} SDX_{ik}\, pdx_{ik})$	i=1,...(m-1) exports j=1,...n countries k=1,...n countries	(m-1)n
12. The composite prices for exports	$p_i = \sum_{j=1}^{n} SDX_{ij}\, pdx_{ij}$	i=1,...(m-1) exports j=1,...n countries	m-1
(3) Equilibrium Condition			
13. The market clearing condition for the nontraded goods	$q_{nontrad} = qx_{nontrad}$		1
14. The income-expenditure condition	$e = SE_{reven} (SY_{prdn}\, r + SY_{tariff}\, trev) + SE_{foreign} f$		1
(4) *Miscellaneous equations*			
15. The power of the import tariff	$powtau_{ij} = TAUCONV_{ij}\, tau_{ij}$	i=1,...(m-1) imports j=1,...n countries	(m-1)n
16. The domestic prices of imports	$pm_{ij} = pcif_{ij} + powtau_{ij}$	i=1,...(m-1) imports j=1,...n countries	(m-1)n
17. The changes in tariff revenue	$trev = \sum_{i=1}^{(m-1)} \sum_{j=1}^{n} STR_{ij} (tau_{ij} + qm_{ij} + pcif_{ij})$	i=1,...(m-1) imports j=1,...n countries	1
(5) Decomposition of the Equivalent Variation (EV)			
18. The Equivalent Variation (EV)	$EV = 0.01(\sum_{i=1}^{(m-1)} \sum_{j=1}^{n} MTAX_{ij}\, qm_{ij} + \sum_{i=1}^{(m-1)} \sum_{j=1}^{n} X_{ij}\, pdx_{ij})$	i=1,...(m-1) imports j=1,...n countries	1
19. The contribution of trade creation	$CNT\_TC = 0.01 \sum_{i=1}^{(m-1)} \sum_{j=1}^{6} MTAX_{ij}\, qm_{ij}$	i=1,...(m-1) imports j=1,...6 (6 ASEAN countries)	1
20. The contribution of trade diversion	$CNT\_TD = 0.01 \sum_{i=1}^{(m-1)} \sum_{j=1}^{n-6} MTAX_{ij}\, qm_{ij}$	i=1,...(m-1) imports j=1,...(n-6) (ROW countries)	1 7,...n
21. The contribution of terms-of-trade	$CNT\_TOT = 0.01 \sum_{i=1}^{(m-1)} \sum_{j=1}^{n} VX_{ij}\, pdx_{ij}$	i=(m-1) exports j=1,...n countries	1

Total equations = 4mn + 6m - 4n +7

Table 3.8. Variables and parameters

Variable	Description	Number	Variable	Description
Endogenous Variables			**Parameters**	
E	Expenditure function	1	σ_{cons}	Elasticity of substitution between consumer goods
U	Utility index	1	σ_{prdn}	Elasticity of transformation between producer goods
p_i	Domestic prices of composite goods i	2m-1	σ_{source}	Elasticity of substitution between import sources
q_i	Demand for consumer goods i	m	σ_{destn}	Elasticity of substitution between export markets
Pc	Consumer price index	1	SC_i	Share of goods i in final consumption
Em_i	Expenditure on imports of goods i	m-1	SM_{ij}	Share of imports of goods i from country j at domestic prices
Qm_{ij}	Imports of goods i from region j	(m-1)n	SX_i	Share of producer goods i in total production
$Powtau_{ij}$	Power of tariff on goods i from country j	(m-1)n	SDX_{ij}	Share of goods i in market j in total exports
Pm_{ij}	Domestic prices of imports of goods i from country j	(m-1)n	STR_{ij}	Share of goods i from country j in total tariff revenue
Px	Price of composite output	1	SE_i	Share of revenue or foreign inflow in total expenditure
R	Revenue from production	1	SY_i	Share of production or tariff revenue in GDP
Qx_i	Output of composite goods i	m	$TAUCONV_{ij}$	Conversion factor from base tariff tau_{ij} to power of tariff $tau_{ij}/(1+tau_{ij})$
$Revx_i$	Revenue from exports of goods i	m-1	VM_{ij}	Value of imports of goods i from country j
Qdx_{ij}	Exports of goods i to country j	(m-1)n	VX_{ij}	Value of exports of goods i to country j
Trev	Total tariff revenue	1	$MTAX_{ij}$	Incremental tariff revenue from commodity i from country j
EV	Equivalent Variation	1		
CNT_TC	Contribution of trade creation	1		
CNT_TD	Contribution of trade diversion	1		
CNT_TOT	Contribution of terms-of-trade	1		
Exogenous Variables				
$Pcif_{ij}$	C.i.f. price of imports i from country j	(m-1)n		
Tau_{ij}	Tariff rates of goods i from country j	(m-1)n		
Pdx_{ij}	Export price of goods i to country j	(m-1)n		
F	Foreign inflow	1		
Capacity	Output capacity of the economy	1		
Pdx_{ij}	Export prices of goods i to country j	(m-1)n		

Endogenous variables = 4mn + 6m - 4n + 7

3.2.2 Data and Liberalization Scenarios

Analyses of the Lao PDR's Phase-in Lists

The structure of the Lao PDR's phase-in lists released at the 29th ASEAN Economic Ministers (AEM) Meeting in October 1997 is summarized in Table 3.6.[26] The import and export values are assigned to each category in each list. The weighted tariff averages by sector are also shown. However, about a quarter of tariff lines recorded by the Lao PDR's partners to COMTRADE don't have corresponding tariff lines at the 6-digit level in the Lao PDR schedule.[27] In this case, the tariff rates and the phase-in lists prevailing at the 4-digit level in the Lao PDR's phase-in lists were assigned to all elements in the 4-digit group. The Lao PDR's initial inclusion list appears to be modest reflecting concerns about balance of payment constraints, the effects on tariff revenues, and concerns about potential effects on small agriculture and manufacturing firms.

(1) The Inclusion List (IL). The Lao PDR's IL contains 533 tariff headings. All the items included have a 5 percent MFN tariff rate. However, the remaining 1287 items with 5 percent tariff rates are excluded from the list due to the difficulty of eliminating existing quantitative restrictions (QR) and other non-tariff barriers (NTBs). The import values of the items in the IL were estimated using the 1995 COMTRADE data to be $18 million, or around 5 percent of the Lao PDR's total imports from ASEAN. The export value of the items in the IL represents only 0.07 percent of the Lao PDR's total exports to ASEAN and this implies that the Lao PDR did not include export-oriented commodities in the IL. Clearly, this reduces the scope for the Lao PDR to obtain significant improvements in market access and hence in its terms-of-trade.

(2) The Temporary Exclusion List (TEL). The TEL includes 2831 items which are to be included in the IL between the years 2001 and 2006 and for which tariff rates are to be reduced to a maximum rate of 5 percent by the year 2008. The items in the TEL are estimated to correspond to $327 million, or 84 percent of the Lao PDR's total imports from ASEAN. The average tariff rate weighted by ASEAN imports is 13 percent. A large number of important export-oriented items is included in this list, corresponding to $72 million of exports, or 90 percent of total exports to ASEAN.

(3) The Sensitive List (SL). The SL consists of 96 unprocessed agricultural products. Of these, 7 are included in a "Highly Sensitive List" (HSL) which is a subset of the Sensitive

[26] This study analyses the Lao PDR's Phase-in lists which were submitted at the ASEAN Secretariat at the time of the Lao PDR's ASEAN accession. Since then, the Lao PDR has phased-in some items into the IL. As of January 1999, the Lao PDR's CEPT lists consist of 1247 items in the IL, 2126 items in the TEL, 88 items in the SL and 90 items in the GEL.

[27] The Lao PDR's current tariff schedule was based on the Harmonized System (version 92). While the original HS92 system consists of 5,019 tariff lines at the 6-digit level, the Lao PDR's schedule includes only 3,551 tariff lines. The discrepancy is due to the fact that the concepts of the description of some products in the HS system do not exist in the Laotian version. However, the measures have been undertaken to improve further the harmonization of the customs classification with the ASEAN nomenclature.

List.[28] Tariff reductions in this list may be phased in at any time, beginning 1998 through 2015. The items in the SL correspond to $7 million in imports, or around 2 percent of imports from ASEAN. The average weighted tariff rate for these commodities is 10 percent. On the export side, the items in the list represent $8 million, or 10 percent of Lao PDR exports to ASEAN.

(4) The General Exceptions List (GEL). The GEL includes 91 items. Many of the commodities in the list, such as beer, cigarettes and tobacco, are consumption goods of a type that is frequently subjected to high consumption taxes. The commodities in the list account for about 10 percent of import values from ASEAN, a total of $39 million. The average weighted tariff rate of 37 percent for this group is high and this implies that a large portion of tariff revenues from ASEAN comes from the commodities in the list. It seems clear that this list was prepared with a view to preserving tariff revenues on "luxury" consumption goods, rather than in the spirit of the GATT's Article XX exceptions. The items in the list represent only 0.04 percent of the Lao PDR's recorded exports to ASEAN.

Data

The model was calibrated with data on GDP, trade, and protection. Given the limitations of the data, some assumptions had to be made as below. In addition to the trade data for 1995 obtained from COMTRADE, data for Vietnam were added to the model using the assumption that it represents 5 percent of Lao PDR imports and 20 percent of its exports. As a very rough proxy, the composition of trade is assumed to be the same as that for Thailand. The shocks to be applied to the model are the changes in the protection levels both in the Lao PDR and its trading partners. Based on *the CEPT Product Lists* (ASEAN Secretariat, 1997), the margin of preferences for imports and the terms-of-trade gains (defined as f.o.b. price increases) for exports were computed on an item by item base and weighted by the Lao PDR's imports and exports respectively. Finally, the shocks were averaged over the 22 commodities in the model.

[28] Lao PDR's Highly Sensitive List (HSL) constitutes of 7 items: Live bovine animals excluding pure-bred breeding (HS10290), live swine excluding pure-bred breeding (HS10391, HS10392) and rice (HS100610, HS100620, HS100630, HS100640). The tariff rates of HS10290, HS10391, HS10392 are 10% whereas those of rice are 5%.

Table 3.6 The Structure of the Lao PDR's Phase-in lists

			Inclusion List (IL)			Temporary Exclusion List (TEL)			Sensitive List (SL)			General Exceptions List (GEL)		
Section	HS	Description	Imports ($1,000)	Exports ($1,000)	Weighted Average(%)	Imports ($1,000)	Exports ($1,000)	Weighted Average(%)	Imports ($1,000)	Exports ($1,000)	Weighted Average(%)	Imports ($1,000)	Exports ($1,000)	Weighted Average(%)
1	1-5	Animals & animal products	0.0	0.0	na	6021.8	49.0	6.5	575.6	31.5	10.1	0.0	7.2	na
2	6-14	Vegetable products	1.5	0.0	5.0	2864.3	7381.2	8.1	6370.3	56.5	10.2	0.0	0.0	na
3	15	Animal & Vegetable oils	0.0	0.0	na	1469.9	3.5	10.1	0.0	0.0	na	0.0	0.0	na
4	16-24	Processed foods, drinks & tobacco	20.9	0.0	5.0	31234.9	0.8	18.8	0.0	967.3	na	29918.5	0.0	39.8
5	25-27	Oil and minerals products	0.0	0.0	na	57078.6	2503.4	5.0	0.0	0.0	na	0.0	0.0	na
6	28-38	Chemical products	192.6	0.0	5.0	23477.0	3988.0	11.1	0.0	0.0	na	11.5	0.0	10.0
7	39-40	Plastic & rubber products	2173.2	0.0	5.0	12817.7	15.3	13.5	0.0	0.0	na	0.0	0.0	na
8	41-43	Skins & furs and their products	0.0	0.0	na	199.3	1176.3	13.5	0.0	0.0	na	0.0	0.0	na
9	44-46	Wood & wood products	0.0	0.0	na	607.8	55633.8	31.1	1.9	6658.1	10.0	0.0	0.0	na
10	47-49	Pulp of wood & paper	0.0	0.0	na	4611.0	92.7	9.0	0.0	0.0	na	0.0	0.0	na
11.1	50-60	Textiles	23.4	0.0	5.0	34312.6	176.5	9.5	0.0	0.0	na	0.0	0.0	na
11.2	61-63	Apparel	0.0	0.0	na	5271.6	100.8	10.1	0.0	0.0	na	1.7	3.7	10.0
12	64-67	Shoes, hats, umbrellas, etc.	0.0	0.0	na	4079.5	8.6	10.1	0.0	0.0	na	0.0	0.0	na
13	68-70	Stone, ceramic & glass products	309.7	0.0	5.0	16014.5	1.8	5.1	0.0	0.0	na	0.0	0.0	na
14	71	Jewelry & precious metal products	0.0	0.0	na	1460.5	1.6	5.0	0.0	0.0	na	0.0	0.0	na
15	72-83	Base metals & their products	1452.8	37.6	5.0	28218.9	582.7	6.1	0.0	0.0	na	0.0	0.0	na
16	84-85	Electrical & mechanical machines	10877.3	15.5	5.0	40336.8	48.6	9.8	0.0	0.0	na	935.0	0.2	7.4
17	86-89	Transport equipment	1425.3	0.0	5.0	51514.2	69.7	33.8	0.0	0.0	na	8145.7	21.2	30.2
18	90-92	Photographic, optical, precision instruments	1798.6	0.2	5.0	918.0	1.0	9.1	0.0	0.0	na	0.0	0.0	na
19	93	Arms & munitions	0.0	0.0	na	0.0	0.0	0.0	0.0	0.0	na	0.0	0.0	na
20	94-96	Miscellaneous articles	8.0	0.0	5.0	4599.9	159.5	13.8	0.0	0.0	na	19.3	0.0	30.0
21	97-98	Objets d'art	0.0	0.0	na	10.6	0.6	5.0	0.0	0.0	na	0.0	0.0	na
		Total	18283.3	53.2	5.0	327119.4	71995.3	13.3	6947.8	7713.4	10.2	39031.6	32.3	37.0
		% Share	4.7	0.07		83.6	90.2		1.8	9.7		10.0	0.04	

Sources: Government of the Lao PDR, *CEPT Phase-in Lists*, 1997; the 1995 UN COMTRADE System.

Note: About a quarter of tariff lines recorded by the Lao PDR's partners to COMTRADE don't have corresponding tariff lines in the Lao PDR's schedule at the 6-digit level. In this case, the tariff rates and the phase-in lists prevailing at the 4-digit level in the Lao PDR's phase-in lists are assigned.

Liberalization Scenarios

Three scenarios depicting the "gradual" preferential liberalization under the AFTA schedule are presented below (scenario 1-3). Given the reciprocal approach of the CEPT, it is assumed that both the Lao PDR and the ASEAN partner countries liberalize their lists, the IL (scenario 1), plus the TEL (scenario 2), plus the SL (scenario 3). The Lao PDR plans to reduce its tariff rates to 5 percent, which is the lowest tariff band of the Lao PDR and the top of the 0-5 percent range permitted by AFTA. On the export side, the terms-of-trade gains are measured by the margin of preference given by the ASEAN partner countries that are weighted by the Lao PDR's exports.[29]

Scenario 4 assumes that the Lao PDR liberalizes all the items including the GEL. In principle, the items in the GEL are permanently excluded from the liberalization scheme. However, given the large share of the items in the GEL for the Lao PDR, and a strong tendency for ASEAN countries to move products from this list to the IL over time, this experiment investigates the effects of including these products.

Scenario 5 investigates a policy of nondiscriminatory liberalization on an MFN basis, under which the Lao PDR builds on its liberalization under AFTA by extending the same liberalization to all of its trading partners (scenario 4). However, the Lao PDR does not receive reciprocal trade concessions from non-ASEAN members under this scenario.

One additional simulation is implemented to investigate the effects of the loss of the Lao PDR's GSP status for its garment industry with the EU15 market (scenario 6). We assume that, under these circumstances, the Lao PDR pays an import duty of 12.1[30] percent for its exports of garments to the EU market. The purpose of this simulation is to obtain an indication of the benefits obtained by being able to retain this status.

A series of sensitivity experiments was conducted to test the effects of the changes in key parameters. Assuming that scenario 3 is the most likely under AFTA, we use it as a baseline for the sensitivity analyses. Scenario 7 tests the case in which the elasticity of substitution between commodities takes a higher value. We double this value from $\sigma_{cons} = 1.5$ to $\sigma_{cons} = 3.0$. Scenario 8 investigates the case in which the elasticity of substitution between source countries takes a higher value, changing it from $\sigma_{source} = 3.0$ to $\sigma_{source} = 6.0$. Scenario 9 doubles all the parameter values. Scenario 10 and scenario 11 increases the parameters in the consumption side ($\sigma_{cons} = 3$, $\sigma_{source} = 6$) and those in the supply side ($\sigma_{prodn} = 4$, $\sigma_{destn} = 8$) respectively. Finally, scenario 12 doubles the value of σ_{prodn} from 2 to 4 and scenario 13 doubles that of σ_{destn} from 4 to 8. The scenarios are summarized below.

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[29] It is assumed that the Lao PDR faces the concessional rate if the commodity that the Lao PDR is liberalizing is in the IL (scenario 1) or TEL (scenario 2) or SL (scenario 3) of the importing partner country and otherwise it faces the MFN rate. For the items which are in the partner countries' IL, the concessional rates agreed by AFTA (the rates in 1998 for scenario 1 and the rates in 2002 for scenario 2-3) are applied. Since the concessional rates for the TEL, SL, and GEL are not determined in the partner countries, it is assumed that they will offer the rates of 2.5 percent when they move the items in the IL.

[30] The simple average MFN rate for the *garment* category (HS61-63) in the EU market was computed based on the EU 1997 tariff (source: UNCTAD).

Experimental Design

Scenario 1 (IL Liberalization): Inclusion List (IL) liberalization under AFTA (2002 for ASEAN 5, 2006 for Vietnam, 2008 for the Lao PDR and Myanmar, and 2010 for Cambodia. The Lao PDR reduces the tariff rates of the items in the IL to 5.0 percent. ASEAN-6 members reciprocate the concessions.

Scenario 2 (IL/TEL Liberalization): Temporary Exclusion List (TEL) liberalization under AFTA. The Lao PDR reduces the tariff rates of the items in the IL and TEL to 5.0 percent. ASEAN-6 members reciprocate the concessions.

Scenario 3 (IL/TEL/SL Liberalization): Scenario 2 plus Sensitive List (SL) liberalization (2010 for ASEAN 5, 2013 for Vietnam, 2015 for the Lao PDR and Myanmar, and 2017 for Cambodia). The Lao PDR reduces the tariff rates of the items in the IL, TEL, SL to 5.0 percent and the ASEAN-6 members reciprocate these concessions.

Scenario 4 (IL/TEL/SL/GEL Liberalization): Scenario 3 plus General Exception List (GEL) liberalization. The Lao PDR reduces, as a counterfactual, the tariff rates of the items in the IL, TEL, SL and GEL to 5.0 percent. The ASEAN-6 members reciprocate the concessions.

Scenario 5 (Non-discriminatory Liberalization): Scenario 3 plus unilateral tariff reduction on a non-discriminatory basis. We investigate what happens if the Lao PDR extends its AFTA concessions to the rest of the world. We assume that the rest of the world maintains the current protections.

Scenario 6 (Loss of GSP): A simulation to investigate the loss of the Lao PDR's GSP status for its garment industry with the EU market.

Scenarios 7-13 (Sensitivity Analyses): A series of sensitivity experiments to test the effects of changes in key parameters.

3.2.3 Results of the experiments

Table 3.9 provides the economy-wide results and the Tables 3.10 through 3.13 show the sectoral results from the experiments. Table 3.14 reports the results of the sensitivity analyses. Column 1 of Table 3.9 reports the results of the IL liberalization. It is hardly surprising that this liberalization shows practically no effects on the key variables (scenario 1). Since the tariff rates are already 5 percent, there is no change on the import side, and the gains from the export side are minimal due to the very limited inclusion of export oriented commodities.

Column 2 of Table 3.9 summarizes the results of the IL and TEL liberalization (scenario 2). While total imports from ASEAN increase by 10.3 percent, imports from the rest of the world fall by 10.5 percent. Overall, imports rise by 5.0 percent. The welfare gains from *trade creation* appear to outweigh the welfare loss from *trade diversion*. The EV gain resulting from the increase in imports from ASEAN is $6.4 million (0.37 percent of base-period GDP), which is larger than the welfare loss of $3.1 million (0.18 percent of GDP) due to the decrease in imports from the rest of the world. There is an associated loss of tariff revenues which fall by 35.6 percent. Since some part of the loss in revenue is compensated by the overall increase in imports, the revenues fall less than proportionally. The combination of a fall in the price of imports and a

fall in the price of nontraded goods leads to downward pressure on the overall level of consumer prices, lowering the consumer price index by 2.4 percent. A well known consequence of trade liberalization is depreciation of the real exchange rate, or a reduction in the price of nontraded goods relative to world prices. The fall in the price of nontraded goods resulting from liberalization reduces the incentives for consumers to substitute away from domestic goods towards the now-cheaper imports. This fall in the price of nontraded goods (relative to exports) increases the incentive to export, and leads to a 5.9 percentage increase in exports. However, since the initial value of exports is smaller than the initial level of imports, the increase in exports allows only a relatively small percentage increase in imports, given the balance of payment constraint. As expected, the increases in exports to the ASEAN countries are especially significant, at 15.8 percent. The welfare gains resulting from improvements in the *terms-of-trade* are $8.7 million or 0.50 percent of GDP. Overall, the welfare gains from scenario 2 are $12.1 million or 0.70 percent of base-period GDP. This is equivalent to the increase in 0.62 percent of real expenditure. The terms-of-trade component contributes the most to the total EV gain, accounting for about 72 percent of the total welfare gains.

Table 3.10 presents the sectoral results of IL and TEL liberalization. Table 3.10 reveals that, on the import side, trade diversion in some sectors causes slight welfare losses under the AFTA plan. For instance, for *vegetable products* and *processed foods, drinks & tobacco*, the trade diversion effects are larger than trade creation in monetary terms, perhaps because the initial tariffs against the rest of the world were higher than those against ASEAN members. Table 3.10 also shows that the percentage changes in export volumes to ASEAN for *plastic & rubber products*, *apparel*, *shoes, hats, umbrellas, stone, ceramic & glass products* are substantial. They are 149.5 percent, 271.5 percent, 125.0 percent, and 365.1 percent respectively. It is likely that the Lao PDR would receive a substantial margin of preference for these commodities, mainly from Thailand. The current MFN rates of Thailand for these categories are high, with a range of 35-45 percent for the simple average and 20-45 percent for the weighted average (Table 2.7). However, the welfare changes measured by EV for these commodities are relatively small and even negative for *stone, ceramic & glass products*. This is because the initial levels of exports of these commodities to ASEAN are low both relative to the rest of the world (*apparel*) and relative to the other categories of the Lao PDR's exports. In contrast, the terms-of-trade gain from *wood and wood products* with $7.8 million of EV is striking, accounting for 64.5 percent of the total EV gain. The gains come from both the improvement in the terms-of-trade (4.3 percent for total exports) and the increases in exports to ASEAN markets (16.6 percent). The gain is particularly attributable to the high initial volumes of exports to ASEAN partners.

Table 3.9 Key Results of Lao PDR Liberalization

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
	IL Liberalization	IL/TEL Liberalization	IL/TEL/SL Liberalization	IL/TEL/SL/GEL Liberalization	Non-discriminatory Liberalization	Loss of GSP
Utility Index (%)	0	0.62	0.67	0.86	1.06	-0.47
Consumer Price Index (%)	0	-2.4	-2.3	-3.7	-5.1	-1.1
Tariff Revenue (%)	0	-35.6	-35.9	-51.5	-64.4	-2.1
Total Imports (%)	0	5.0	5.2	6.6	7.6	-2.1
Imports from ASEAN (%)	0	10.3	10.6	13.8	7.9	-2.1
Imports from ROW (%)	0	-10.5	-10.5	-14.5	6.9	-2.1
Total Exports (%)	0	5.9	6.1	8.2	9.9	-1.3
Exports to ASEAN (%)	0	15.8	16.6	19.5	21.4	3.6
Exports to ROW (%)	0	-2.4	-2.7	-1.3	0.2	-5.4
TOT gains (%)	0	2.7	2.9	3.1	3.1	-2.4
Price of Non Tradable goods (%)	0	-1.0	-0.9	-1.9	-2.9	0.0
Output of Non tradable goods (%)	0	-1.5	-1.5	-2.0	-2.5	0.3
EV ($1,000)	0.4	12106.9	13112.7	16748.9	20525.6	-9294.8
% of GDP	0	0.70	0.76	0.97	1.18	-0.54
Contribution of Trade Creation ($1,000)	0	6447.6	6583.8	10753.8	7306.6	-1305.6
% of GDP	0	0.37	0.38	0.62	0.42	-0.08
Contribution of Trade Diversion ($1,000)	0	-3075.7	-3078.1	-4474.1	2658.5[31]	-451.5
% of GDP	0	-0.18	-0.18	-0.26	0.15	-0.03
Contribution of Terms-of-trade ($1,000)	0.4	8735.1	9607.0	10469.3	10560.2	-7537.8
% of GDP	0	0.50	0.55	0.60	0.61	-0.43

Source: Author's simulation results.

[31] Because Scenario 5 is non-discriminatory, there is no actual trade diversion. The estimate quoted is for the trade created in the import markets for non-ASEAN goods.

Table 3.10 Scenario 2 (IL and TEL Liberalization)

Section	HS	Description	Imports (%)			Exports (%)				Equivalent Variation ($1,000)			
			Total	ASEAN	ROW	Total	ASEAN	ROW	Terms-of-trade Gain	Total EV	Contribution of Trade Creation	Contribution of Trade Diversion	Contribution of Terms-of-trade
1	1-5	Animals & animal products	-1.0	-1.0	-4.7	14.3	25.1	-11.6	6.6	12.2	-3.9	-1.2	17.3
2	6-14	Vegetable products	-2.0	-1.2	-3.7	1.4	5.8	-0.3	0.4	82.2	-10.6	-38.0	130.8
3	15	Animal & vegetable oils	4.2	4.2	-9.5	28.7	28.7	0.0	13.1	6.2	5.2	0.0	1.0
4	16-24	Processed foods, drinks & tobacco	7.2	11.0	-10.3	29.0	30.1	-21.7	13.3	-271.0	-42.6	-518.1	289.7
5	25-27	Oil and minerals products	-2.9	-2.9	-2.9	4.8	6.9	-3.6	2.1	33.4	-89.8	-1.5	124.8
6	28-38	Chemical products	3.8	7.7	-9.2	0.5	0.5	0.5	0.0	108.6	161.3	-52.8	0.1
7	39-40	Plastic & rubber products	5.5	9.1	-10.6	9.5	149.5	-7.8	4.4	99.0	129.7	-44.7	14.0
8	41-43	Skins & furs and their products	5.5	12.9	-10.5	2.5	3.3	-1.4	1.0	28.3	2.6	-1.4	27.1
9	44-46	Wood & wood products	16.7	57.9	-18.8	9.4	16.6	-7.6	4.3	7844.2	64.2	-30.1	7810.1
10	47-49	Pulp of wood & paper	1.8	3.7	-7.3	13.5	21.0	-11.0	6.3	22.4	13.4	-6.7	15.7
11	50-60	Textiles	2.6	4.2	-8.1	30.2	55.2	-22.4	13.8	152.3	115.5	-41.7	78.6
11	61-63	Apparel	3.1	5.8	-8.5	0.9	271.5	0.2	0.2	167.7	25.4	-11.9	154.2
12	64-67	Shoes, hats, umbrellas, etc.	3.6	4.9	-9.0	2.0	125.0	-0.9	0.7	16.2	16.7	-4.8	4.2
13	68-70	Stone, ceramic & glass products	-2.8	-2.8	-3.0	37.4	365.1	-26.5	16.9	-21.4	-24.7	-2.2	5.4
14	71	Jewelry & precious metal products	-2.9	-2.9	-2.9	3.3	77.4	-2.2	1.4	-27.9	-2.3	-26.3	0.7
15	72-83	Base metals & their products	-1.7	-1.2	-4.1	1.3	14.7	-0.3	0.4	11.0	-20.7	-13.6	45.3
16	84-85	Electrical & Mechanical equipment	0.5	4.3	-6.2	1.5	13.9	-0.4	0.5	60.9	175.7	-117.8	3.0
17	86-89	Transport equipment	20.2	45.0	-21.2	13.4	16.4	-10.9	6.2	3763.8	5871.0	-2120.1	12.9
18	90-92	Photographic, optical, precision instruments	-2.0	0.0	-3.8	1.3	70.2	-0.3	0.4	-6.8	0.2	-7.2	0.2
19	93	Arms & munitions	-2.9	0.0	-2.9	0.5	0.5	0.5	0.0	-3.2	0.0	-3.2	0.0
20	94-96	Miscellaneous articles	6.4	13.0	-11.2	0.5	0.5	0.5	0.0	28.7	61.3	-32.6	0.0
21	97-98	Objets d'art	-2.9	-2.9	-2.9	0.5	0.5	0.50	0.0	0.0	0	0.0	0.0
		Total	5.0	10.3	-10.5	5.9	15.8	-2.4	2.7	12106.9	6447.6	-3075.7	8735.1

Source: Author's simulation results.

Table 3.11 Scenario 3 (IL, TEL and SL Liberalization)

Section	HS	Description	Imports (%)			Exports (%)				Equivalent Variation ($1,000)			
			Total	ASEAN	ROW	Total	ASEAN	ROW	Terms-of-trade Gain	Total EV	Contribution of Trade Creation	Contribution of Trade Diversion	Contribution of Terms-of-trade
1	1-5	Animals & animal products	-0.3	-0.2	-5.2	15.3	27.1	-12.9	7.3	17.4	-0.3	-1.3	19.0
2	6-14	Vegetable products	1.7	5.9	-6.7	1.2	6.6	-0.8	0.5	133.2	43.3	-68.6	158.5
3	15	Animal & vegetable oils	4.4	4.4	-9.4	28.2	28.2	0.0	13.1	6.4	5.4	0.0	1.0
4	16-24	Processed foods, drinks & tobacco	7.3	11.1	-10.1	98.7	101.9	-49.5	40.8	614.9	-18.4	-510.9	1144.2
5	25-27	Oil and minerals products	-2.8	-2.8	-2.8	4.4	6.6	-3.9	2.1	38.1	-85.0	-1.5	124.6
6	28-38	Chemical products	4.0	7.9	-9.0	0.2	0.2	0.2	0.0	112.7	164.6	-51.9	0.1
7	39-40	Plastic & rubber products	5.7	9.3	-10.5	9.2	148.7	-8.1	4.4	101.8	132.0	-44.1	14.0
8	41-43	Skins & furs and their products	5.7	13.1	-10.4	2.2	3.0	-1.7	1.0	28.3	2.6	-1.4	27.1
9	44-46	Wood & wood products	16.8	58.2	-18.7	9.0	16.3	-7.9	4.3	7833.4	64.5	-29.9	7798.8
10	47-49	Pulp of wood & paper	1.9	3.9	-7.2	13.1	20.6	-11.3	6.3	23.0	13.9	-6.6	15.7
11	50-60	Textiles	2.8	4.4	-8.0	29.7	54.7	-22.6	13.8	157.2	119.7	-41.0	78.5
11	61-63	Apparel	3.2	5.9	-8.3	0.6	270.3	-0.2	0.2	168.3	26.1	-11.7	154.0
12	64-67	Shoes, hats, umbrellas, etc.	3.8	5.1	-8.8	1.6	124.2	-1.2	0.7	16.7	17.2	-4.7	4.2
13	68-70	Stone, ceramic & glass products	-2.6	-2.6	-2.9	37.0	363.6	-26.7	16.9	-19.9	-23.3	-2.0	5.4
14	71	Jewelry & precious metal products	-2.8	-2.8	-2.8	2.9	76.8	-2.5	1.4	-26.4	-2.2	-24.9	0.7
15	72-83	Base metals & their products	-1.5	-1.1	-4.0	1.0	14.3	-0.6	0.4	14.2	-17.9	-13.1	45.3
16	84-85	Electrical & mechanical equipment	0.6	4.5	-6.0	1.2	13.6	-0.8	0.5	69.8	181.8	-115.0	2.9
17	86-89	Transport equipment	20.4	45.2	-21.1	13.0	16.0	-11.2	6.2	3802.8	5897.4	-2107.5	12.9
18	90-92	Photographic, optical, precision instruments	-1.9	0.2	-3.6	1.0	69.7	-0.6	0.4	-6.2	0.5	-6.9	0.2
19	93	Arms & munitions	-2.8	0.0	-2.8	0.2	0.2	0.2	0.0	-3.0	0.0	-3.0	0.0
20	94-96	Miscellaneous articles	6.5	13.2	-11.0	0.2	0.2	0.2	0.0	29.9	62.1	-32.2	0.0
21	97-98	Objets d'art	-2.8	-2.8	-2.8	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
		Total	5.2	10.6	-10.5	6.1	16.6	-2.7	2.9	13112.7	6583.8	-3078.1	9607.0

Source: Author's simulation results.

Table 3.12 Scenario 4 (IL, TEL, SL and GEL Liberalization)

Section	HS	Description	Imports (%)			Exports (%)				Equivalent Variation ($1,000)			
			Total	ASEAN	ROW	Total	ASEAN	ROW	Terms-of-trade Gain	Total EV	Contribution of Trade Creation	Contribution of Trade Diversion	Contribution of Terms-of-trade
1	1-5	Animals & animal products	-2.3	-2.2	-7.1	24.2	41.0	-16.7	10.5	18.0	-8.7	1.8	28.5
2	6-14	Vegetable products	-0.4	3.7	-8.6	2.8	8.2	0.7	0.5	101.1	28.3	-88.1	160.9
3	15	Animal & vegetable oils	2.2	2.3	-11.3	30.2	30.2	0.0	13.1	4.0	3.0	0.0	1.0
4	16-24	Processed foods, drinks & tobacco	24.5	35.7	-26.8	109.9	113.3	-50.7	43.7	4332.9	4421.0	-1350.5	1262.4
5	25-27	Oil and minerals products	-4.7	-4.7	-4.7	25.5	36.2	-17.6	11.1	575.0	-146.6	-2.5	724.1
6	28-38	Chemical products	1.8	5.7	-10.9	1.7	1.7	1.7	0.0	59.1	121.7	-62.6	0.1
7	39-40	Plastic & rubber products	3.5	7.1	-12.3	10.8	152.5	-6.7	4.4	65.0	102.8	-51.8	14.1
8	41-43	Skins & furs and their products	3.5	10.8	-12.2	3.7	4.5	-0.3	1.0	27.8	2.2	-1.6	27.2
9	44-46	Wood & wood products	14.4	54.9	-20.3	10.7	18.0	-6.5	4.3	7880.8	61.3	-32.5	7852.0
10	47-49	Pulp of wood & paper	-0.2	1.8	-9.1	14.8	22.4	-9.9	6.3	14.3	6.8	-8.3	15.8
11	50-60	Textiles	0.7	2.2	-9.8	31.7	57.1	-21.5	13.8	93.1	64.8	-50.7	79.0
11	61-63	Apparel	1.1	3.8	-10.2	2.1	278.3	1.3	0.2	159.5	17.2	-14.4	156.8
12	64-67	Shoes, hats, umbrellas, etc.	1.6	2.9	-10.7	3.2	127.6	0.3	0.7	9.0	10.4	-5.7	4.3
13	68-70	Stone, ceramic & glass products	-4.6	-4.6	-4.9	39.0	370.6	-25.6	16.9	-39.1	-41.1	-3.5	5.5
14	71	Jewelry & precious metal products	-4.7	-4.7	-4.7	4.5	79.5	-1.0	1.4	-45.9	-3.7	-42.9	0.7
15	72-83	Base metals & their products	-3.6	-3.1	-5.9	2.5	16.0	0.9	0.4	-27.4	-53.3	-19.7	45.6
16	84-85	Electrical & mechanical equipment	-1.4	2.4	-8.0	2.7	15.9	0.7	0.5	-44.1	105.1	-152.3	3.1
17	86-89	Transport equipment	22.5	51.0	-25.3	51.4	61.3	-31.7	22.0	3534.9	6012.9	-2531.7	53.7
18	90-92	Photographic, optical, precision instruments	-3.9	-1.9	-5.6	2.5	72.2	0.9	0.4	-13.2	-2.8	-10.7	0.2
19	93	Arms & munitions	-4.7	0.0	-4.7	17.0	28.6	-11.6	7.3	29.2	0.0	-5.2	34.4
20	94-96	Miscellaneous articles	4.5	11.0	-12.9	1.7	1.7	1.7	0.0	15.0	52.7	-37.7	0.0
21	97-98	Objets d'art	-4.7	-4.7	-4.7	1.7	0.0	1.7	0.0	0.0	0.0	0	0.0
		Total	6.6	13.8	-14.5	8.2	19.5	-1.3	3.1	16748.9	10753.74	-4474.1	10469.3

Source: Author's simulation results.

Table 3.13 Scenario 5 - Non-discriminatory Liberalization

Section	HS	Description	Imports (%)			Exports (%)				Equivalent Variation ($1,000)			
			Total	ASEAN	ROW	Total	ASEAN	ROW	Terms-of-trade Gain	Total EV	Contribution of Trade Creation	Contribution of Trade Diversion	Contribution of Terms-of-trade
1	1-5	Animals & animal products	-3.9	-4.5	24.7	26.2	43.2	-15.4	10.5	15.9	-18.5	5.7	28.7
2	6-14	Vegetable products	5.1	-6.8	28.9	4.4	10.0	2.3	0.5	409.4	-46.7	293.9	162.3
3	15	Animal & vegetable oils	0.2	0.3	-13.0	32.3	32.3	0.0	13.1	1.6	0.5	0.0	1.0
4	16-24	Processed foods, drinks & tobacco	28.8	24.5	48.4	113.2	116.7	-49.9	43.7	5915.5	3231.8	1409.5	1274.1
5	25-27	Oil and minerals products	-6.6	-6.6	-4.3	27.5	38.4	-16.3	11.1	523.4	-205.1	-2.1	730.5
6	28-38	Chemical products	0.6	2.8	-6.9	3.4	3.4	3.3	0.0	36.9	62.5	-25.7	0.1
7	39-40	Plastic & rubber products	3.0	3.3	1.9	12.6	156.5	-5.2	4.4	75.1	50.2	10.7	14.2
8	41-43	Skins & furs and their products	4.8	4.9	4.6	5.4	6.2	1.4	1.0	29.2	1.0	0.7	27.5
9	44-46	Wood & wood products	22.3	38.3	8.5	12.5	19.9	-5.0	4.3	7971.5	42.9	9.6	7919.0
10	47-49	Pulp of wood & paper	-1.3	-1.1	-2.5	16.7	24.4	-8.5	6.3	11.3	-3.2	-1.5	15.9
11.1	50-60	Textiles	-0.6	-0.5	-1.2	33.8	59.6	-20.2	13.8	66.7	-9.7	-3.4	79.7
11.2	61-63	Apparel	0.5	0.3	1.3	3.7	284.4	3.0	0.2	161.9	2.0	1.5	158.3
12	64-67	Shoes, hats, umbrellas, etc.	0.4	0.1	3.5	4.8	131.3	1.9	0.7	7.1	0.8	2.0	4.3
13	68-70	Stone, ceramic & glass products	-6.4	-6.6	-1.5	41.3	378.2	-24.4	16.9	-54.4	-59.2	-0.8	5.5
14	71	Jewelry & precious metal products	-6.6	-6.6	-6.6	6.2	82.4	0.6	1.4	-64.4	-5.2	-59.9	0.7
15	72-83	Base metals & their products	-5.4	-5.0	-7.4	4.1	17.9	2.6	0.4	-65.7	-87.6	-24.0	46.0
16	84-85	Electrical & mechanical equipment	-2.9	0.0	-7.9	4.4	17.7	2.3	0.5	-125.1	10.4	-138.6	3.1
17	86-89	Transport equipment	28.8	36.5	16.0	53.8	63.8	-30.6	22.0	5521.8	4323.5	1144.1	54.2
18	90-92	Photographic, optical, precision instruments	-5.2	-4.4	-6.0	4.2	75.0	2.5	0.4	-16.4	-6.9	-9.8	0.2
19	93	Arms & munitions	28.6	0.0	28.6	18.9	30.7	-10.2	7.3	52.2	0.0	17.5	34.8
20	94-96	Miscellaneous articles	6.1	4.6	10.0	3.3	3.3	3.3	0.0	52.0	23.0	29.1	0.0
21	97-98	Objets d'art	-6.6	-6.6	-6.6	3.3	0.0	3.3	0.0	0.0	0.0	0.0	0.0
		Total	7.6	7.9	6.9	9.9	21.4	0.2	3.1	20525.2	7306.56	2658.5	10560.2

Source: Author's simulation results.

Table 3.14 Sensitivity Analyses

	Base	Scenario 7	Scenario8	Scenario 9	Scenario 10	Scenario 11	Scenario 12	Scenario13
	σ_{cons}=1.5 σ_{prodn}=2 σ_{source}=3 σ_{destn}=4	σ_{cons} = 3	σ source = 6	σ_{cons}=3 σ_{prodn}=4 σ_{source}=6 σ_{destn}=8	σ_{cons}=3 σ_{source}= 6	σ_{prodn}=4 σ_{destn}=8	σ_{prodn}=4	σ_{destn}=8
Utility Index (%)	0.67	0.87	0.57	0.99	0.77	0.82	0.76	0.72
Consumer Price Index (%)	-2.3	-3.4	-2.6	-2.7	-3.8	-1.3	-1.4	-2.19
Tariff Revenue (%)	-35.8	-33.5	-41.1	-36.8	-38.9	-34.8	-35.0	-35.8
Total Imports (%)	5.2	6.8	5.6	10.9	7.1	7.1	6.8	5.5
Imports from ASEAN (%)	10.6	12.2	15.8	22.0	17.9	12.5	12.2	10.9
Imports from ROW (%)	-10.5	-9.1	-24.5	-21.7	-24.3	-9.0	-9.3	-10.3
Total Exports (%)	6.1	8.8	6.6	15.2	9.4	8.7	8.5	6.3
Exports to ASEAN (%)	16.6	19.5	17.2	40.0	20.2	32.0	23.3	24.8
Exports to ROW (%)	-2.7	-0.3	-2.2	-5.6	0.3	-10.9	-3.9	-9.4
TOT gains (%)	2.9	2.9	2.9	3.4	2.9	3.4	3.1	3.2
Price of Non Tradable goods (%)	-0.9	-2.4	-1.2	-1.2	-2.8	0.7	0.5	-0.7
Output of Non tradable goods (%)	-1.5	-2.2	-1.6	-3.8	-2.3	-2.1	-2.1	-1.5
EV ($1,000)	13112.7	16876.3	11242.3	19388.0	15044.3	16075.5	14922.5	14171.0
% of GDP	0.76	0.97	0.65	1.12	0.87	0.93	0.86	0.82
Contribution of Trade Creation ($1,000)	6583.8	9131.3	9073.8	13973.4	12060.4	7532.2	7400.8	6754.7
% of GDP	0.38	0.53	0.52	0.81	0.70	0.43	0.43	0.39
Contribution of Trade Diversion ($1,000)	-3078.1	-1980.6	-7456.9	-6236.1	-6761.0	-2775.4	-2827.8	-3057.2
% of GDP	-0.18	-0.11	-0.43	-0.36	-0.39	-0.16	-0.16	-0.18
Contribution of Terms-of-trade ($1,000)	9607.0	9725.5	9625.3	11650.8	9744.9	11318.7	10349.4	10473.4
% of GDP	0.55	0.56	0.56	0.67	0.56	0.65	0.60	0.60

Source: Author's simulation results.

The third column of Table 3.9 shows the results of the Sensitive List (SL) liberalization in addition to the IL and TEL liberalization (scenario 3). Overall, the results of the liberalization of unprocessed agricultural commodities by the Lao PDR and its ASEAN partners appear to be relatively small. Total imports and exports increase only by 5.2 percent and 6.1 percent respectively from the base-period. Since the commodities in the SL represent only about 2 percent of the total imports from ASEAN and its tariff rates are relatively low at around 10 percent, the impacts on tariff revenues are marginal, decreasing only by 0.3 percentage point relative to scenario 2. Overall, total EV increases by $13.1 million from the base-period. This corresponds to 0.76 percent of GDP and 0.67 percent of initial real expenditure. Table 3.11 shows some sectoral results of the SL liberalization. Imports of *vegetable products* from ASEAN increase by 5.9 percent whereas the imports from the rest of the world decrease by 6.7 percent. On the export side, the increase in exports to ASEAN of 27.1 percent for *animal & animal products* is associated with a terms-of-trade improvement of 7.3 percent for that commodity. There are several factors which might underestimate the impacts of the agricultural liberalization. First, our analyses do not include the effects of removal of the quantitative restrictions and other non tariff barriers (NTBs) which are persistent in the agricultural sector. Second, a large portion of current trade occurs unofficially along the long borders with Thailand, Vietnam, and China, and it is likely that official trade would increase when the trade barriers are reduced. Finally, many commodities in this sector are now facing "prohibitive" tariffs and the model does not capture what would happen when the protection is removed, since our model is based on the 1995 export data and volumes that are initially zero in the model are unable to change. For instance, while coffee is one of the most important export commodities for the Lao PDR, none was exported to Thailand in 1995, mainly due to high tariffs (40 percent) and non tariff barriers. Exports of *processed foods, drinks & tobacco* to ASEAN increase substantially, from 30.1 percent (scenario 2) to 101.9 percent (scenario 3). Again, the Lao PDR is likely to gain mainly from concessions by Thailand, whose MFN rates are high in this sector, at a weighted average of 23.5 percent. The terms-of-trade gain in this category improves from 13.3 percent in scenario 2 to 40.8 percent in scenario 3.

Column 4 of Table 3.9 shows the results of GEL liberalization in addition after IL, TEL, and SL liberalization (scenario 4). The commodities in the GEL represent about 10 percent of total imports from ASEAN and the list includes commodities with a weighted average tariff rate of 37 percent. As expected, imports from ASEAN increase by 13.8 percent, this in turn leads to an increase in total imports of 6.6 percent. The loss of tariff revenues of 51.5 percent is especially significant relative to scenario 3 because of the relatively high tariffs on the GEL commodities. However, consumers are likely to gain from trade creation which amounts to $10.8 million or 0.62 percent of GDP. Total EV increases from $13.1 million (scenario 3) to $16.7 million (scenario 4) and a large portion of the welfare gain relative to scenario 3 comes from the trade creation component. The total EV gain is equivalent to 0.97 percent of GDP and 0.86 percent of real expenditure. Table 3.12 shows the sectoral results of the GEL liberalization. Since the GEL includes many alcoholic beverages and tobacco, it is not surprising that this liberalization causes a surge of imports from ASEAN in the *processed foods, drinks & tobacco* category, from 11.1 percent under scenario 3 to 35.7 percent under scenario 4 relative to the base period. Trade creation measured by EV is huge, jumping from a minus sign in scenario 3 to $4.4 million in scenario 4. However, imports of other goods actually decline relative to

scenario 3. This is in large part because the prices of many of these imports fall by less than the fall in the prices of the *processed food, drinks & tobacco* group, and the prices of nontraded goods.

Column 5 of Table 3.9 deals with the results of the non-discriminatory liberalization scenario under which the Lao PDR reduces unilaterally all of its non-partner tariffs to 5 percent in addition to exchanging "reciprocal" concessions with the ASEAN partners (scenario 5). The increases in imports and exports are the highest registering 7.6 percent and 9.9 percent respectively; imports from both ASEAN and the rest of the world increase by 7.9 percent and 6.9 percent respectively and exports increase as well in order to finance the increased imports. The tariff revenues decrease by 64.4 percent and the consumer price index decreases by 5.1 percent. The result shows that the welfare gains are the greatest with this scenario with the increase in the EV of $20.5 million or 1.06 percent of the real expenditure (1.18 percent of GDP). Table 3.13 evaluates the sectoral results of non-discriminatory liberalization. When the scope of the liberalization widens, the Lao PDR gains more because it does not suffer the costly trade diversion inherent in preferential liberalization and the relative importance of *wood and wood products* becomes smaller. For instance, since a large portion of *transport equipment* is sourced from the rest of the world, consumers benefit greatly from comprehensive rather than partial liberalization.

Column 6 of Table 3.9 simulates the case in which the Lao PDR fails to obtain GSP status in the EU15 market for its garment sector. With the loss of GSP status, exports of garments to EU15 drop by 27.5 percent and this in turn leads to a substantial welfare loss; real expenditure drops by 0.47 percent, which is equivalent to a welfare loss of $9.3 million (0.54 percent of GDP). Clearly, this result implies that the enhanced ability to maintain GSP status in the EU needs to be considered an important, positive consequence of AFTA accession.

Table 3.14 shows the results of the sensitivity analyses. The results for key variables do not suggest that the results are strongly sentitive to the values of these parameters. Relative to the base-period (scenario 3), the magnitude of the change in overall welfare is not very large with an increase in real expenditure from 0.67 percent to 0.87 percent under scenario 7, and a decrease to 0.57 percent under scenario 8. However, the estimated welfare effects of trade creation and trade diversion are sensitive to the parameter values. If, for instance, domestic goods and imports are good substitutes (scenario 7), so that trade creation dominates trade diversion, it is more likely that preferential trade arrangements will be beneficial. Going back to Figure 2.A, where there is high substitutability among commodities, the demand curves D_{asean} will be relatively flat and the area representing the gains from trade creation will be greater following a reduction of tariffs on imports from ASEAN countries. In our model, the magnitude of trade creation increases from $6.6 million to $9.1 million and the magnitude of trade diversion is smaller. In contrast, if the elasticity of substitution between ASEAN and rest of the world imports is larger (scenario 8), the rectangle of trade diversion will be larger. Although trade diversion does not outweigh trade creation in our experiment, the magnitude of trade diversion increases substantially, from $3.1 million to $7.5 million.

3.3 Conclusions

The following conclusions emerge from our analysis of the Lao PDR's accession to AFTA. First, the simulation results suggest that the Lao PDR's accession to AFTA is economically beneficial. A series of experiments showed that the Lao PDR gains more as the scope of AFTA widens and it gains the most if it expands the scope of its import liberalization on a non-discriminatory basis. This qualitative assessment is robust, although the magnitudes of the gains are sensitive to the key parameter values. On the import side, the benefits of trade creation appear to outweigh the costs of trade diversion. This reflects the high share of ASEAN countries in the Lao PDR's total imports and the slightly higher initial tariff rates levied on imports from ASEAN. However, the gains from the import side (defined as the contribution of *trade creation* minus that of *trade diversion*) are relatively small, varying from $3.4 million (scenario 2) and $7.7 million (scenario 9). This is because the benefits obtained from trade creation are partially offset by the loss of tariff revenues resulting from trade diversion. On the export side, the Lao PDR gains substantially from the improvement in its terms-of-trade resulting from tariff cuts in the partner countries. The magnitude of these gains varies from $8.7 million (scenario 2) to $11.7 million (scenario 9). This reflects the current relatively high protection in the ASEAN partner countries against Lao PDR's exports.

Exports of the Lao PDR are currently concentrated in a very few commodities and its economy is sensitive to the external shocks on them. The simulation results showed that, other things equal, AFTA has positive effects on the Lao PDR's most important export industries, namely *wood and wood products* and *garments*. The results revealed that a large portion of the gains from AFTA come from terms-of-trade gains on *wood and wood products* resulting from concessions by ASEAN partners. However, the importance of these gains owes a great deal to the large share of *wood and wood products* in total exports to ASEAN.[32] The simulation results also highlighted the importance of preferential access to the EU market by the Lao PDR's *garment* industry on its overall economy. This appears to be important since the Lao PDR currently has very few export-oriented manufacturing industries other than garments. The EU's GSP privileges are subject to strict rules of origin. With ASEAN membership, the *regional cumulation* of origin provisions applied to ASEAN are likely to help the Lao PDR retain its GSP status in the EU. However, since the Multifibre Arrangement (MFA) is scheduled to go out of existence in 2005 under the Uruguay Round agreement, the Lao PDR may face more competition from other emerging markets in the near future. In sum, it would be desirable that the Lao PDR's export structure becomes more diversified as it integrates into the ASEAN.

[32] Timber royalties represented a significant part of the government's fiscal revenues accounting for 20 percent of tax revenue in 1995/96 (Bank of the Lao PDR, 1996). However, its sustainability is uncertain due the degradation of forestry resources in the Lao PDR. The current rates of logging are some 2-3 times the sustainable yield level and deforestation is occurring at the rate of 1-2 percent annually (ADB, 1996). Recently, exports of wood products were severely affected given the virtual collapse of the market for construction timber in Thailand in the aftermath of the financial crisis. In 1997/98, timber royalties represented 37 billion of kip or 13 percent of tax revenue (IMF, 1999b).

The sectoral analyses also highlighted the substantial potential of AFTA in such industries as *processed foods, apparel, shoes, hats, and umbrellas*. While the proportional increases in the exports of these industries are substantial, the gains evaluated in monetary terms are modest in the simulation because of the low current initial levels of these exports. Although there has been a tendency for ASEAN countries to lower their MFN protection at the aggregated level, the protection of many labor intensive sectors among the ASEAN markets remains high. The reductions of partners' tariffs against the Lao PDR are important since it has potential comparative advantage in these sectors. The sectoral analyses also reveal that the effects of the currently-agreed agricultural liberalization, excluding *wood and wood products*, are relatively modest. However, the simulation results showed some positive signs with the agricultural exports. In scenario 3 (the liberalization of unprocessed agriculture), the exports of *animal & animal products* to ASEAN increased by 27.1 percent. The increase in exports of *processed foods, drinks and tobacco* by 101.9 percent is also promising.

4 Cambodia: Economic and Fiscal Implications

Since the formation of the Royal Government in 1993, the reform of Cambodia's trade regime from a centrally controlled system into a relatively open system has been impressive. Key steps in this transition have included the unification of exchange rates, tariff reform, the abolition of many nontariff barriers, and the implementation of a liberal Law on Investment. In 1997, Cambodia experienced two crises: the political difficulties of July 1997 which resulted in suspension of Cambodia's ASEAN accession process, and the regional financial crisis. Following the formation of a government after the 1998 election, Cambodia's accession to ASEAN in April 1999 was widely viewed as recognition of political stability by ASEAN, and as a signal of Cambodia's commitment towards further trade and investment liberalization. Further integration with the Southeast Asian and global economies seems likely to be a key to sustainable development in Cambodia.

The transition to ASEAN Free Trade Area (AFTA) membership involves particularly important transition issues for Cambodia given its current heavy reliance on tariff revenues. In 1998, trade tax revenues represented 56 percent of Cambodia's total tax revenues. Of these revenues, about two thirds were collected on trade with ASEAN. Some of the key transition issues involved with AFTA accession can be explored using quantitative models that take into account the efficiency and tariff revenue implications of the various approaches to implementation. To allow an informed overall assessment, Section 4.1 summarizes Cambodia's current trade regime including the direction of trade and composition of trade. Section 4.2 reviews the revenue implications of AFTA. Section 4.3 presents the modeling approach and experiments. Section 4.4 presents a brief conclusion.

4.1 Cambodia's Trade Regime

Cambodia's trade regime can usefully be analyzed in three parts: retained imports, domestic exports, and re-exports. In 1998, Cambodia's retained imports registered 4,276 billion riel whereas its exports accounted for 2,380 billion riel. 508 billion riel worth of goods were estimated to have been re-exported to neighboring countries (Customs House, 1998).

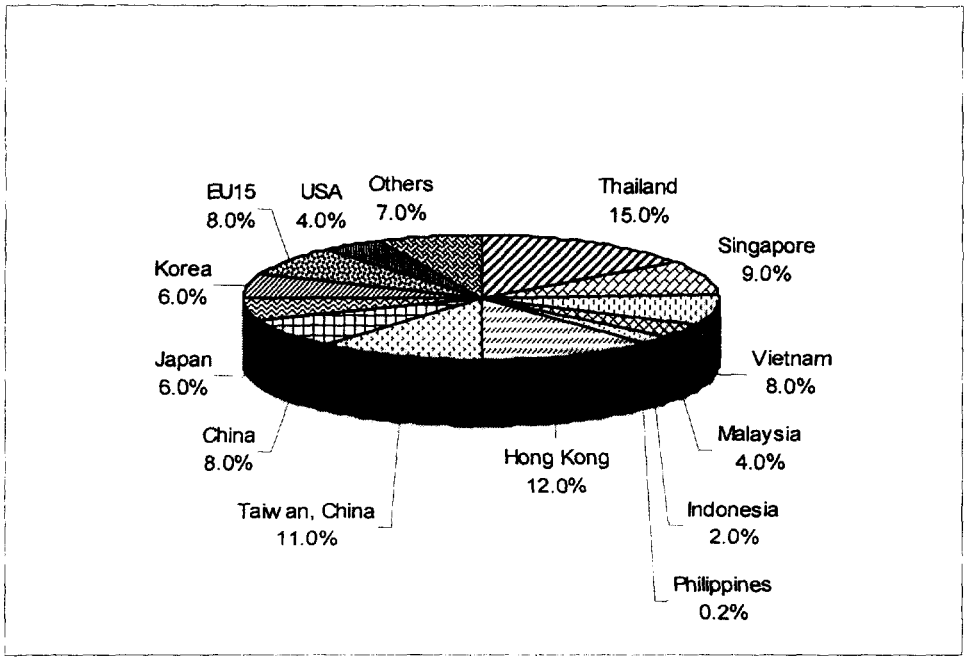
4.1.1 Retained Import Regime

Figure 4.1 presents Cambodia's imports by source. Cambodia's import trade is concentrated in the Asian countries, with 38 percent of its imports sourced from six ASEAN members (For the data by source and category, see Table 4.1). Figure 4.2 shows the composition of Cambodia's imports from ASEAN and non-ASEAN countries. In 1998, Cambodia's leading imports were *textiles* (11.1), its increase appears to be attributed to the increasing demand from the *clothing* sector[33] resulting from the United States' granting MFN status (see Box 4.1). Cambodia's most important category of imports from ASEAN was *oil products* (5) which were sourced mainly

[33] The increase in the production of clothing in recent years has resulted in a dramatic increase in Cambodia's imports of textiles. Since 1996, Cambodia's imports of textiles have risen from 164 billion riel in 1996 to 344 billion riel in 1997, and 927 billion riel in 1998 (Source: Customs House).

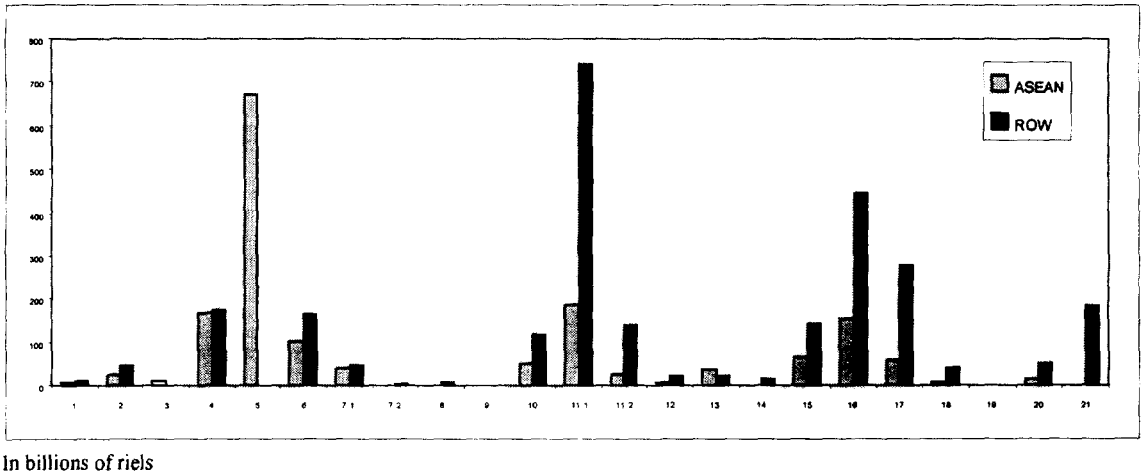
from Vietnam, Singapore, and Thailand. Cambodia sourced a large portion of its imports of *electrical and mechanical machinery* (16) and *transport equipment* (17) from the rest of the world.

Figure 4.1 The Sources of Cambodia's Imports in 1998



Source: Customs Office

Figure 4.2 Cambodia's Imports from ASEAN and Non-ASEAN Sources in 1998



In billions of riels
Source: Customs Office

Table 4.1 Cambodia's Direction of Imports 1998

ASEAN	China	EU15	Hong Kong	Indonesia	Japan	Korea	Malaysia	Philpines	Singapore	Thailand	Taiwan	USA	Vietnam	ROW	Total	Share(%)
Animals & animals products	159	4488	103	125	2329	23	100	19	1977	6012	8	1333	54	2089	18818	0.4
Vegetable products	2346	2919	356	0	17974	180	80	0	5768	16639	244	4864	2138	19824	73330	1.7
Animal and vegetable oils	52	42	16	0	0	0	5265	0	5535	1689	3	4	38	222	12866	0.3
Processed foods, drinks & tobacco	14797	88312	12670	37948	12174	68	8400	4078	45639	69406	15777	23251	1813	8536	342869	8.0
Oil and minerals products	258	57	422	2551	7	13	85	148	67308	280977	115	4	319532	3	671480	15.7
Chemical products	8618	83256	6944	5025	3112	20971	7479	790	14216	68697	10808	7906	4547	23940	266309	6.2
Plastic & rubber products	4415	1109	12623	1005	3355	8373	6765	21	8006	22230	14553	396	902	2440	86192	2.0
Rubber	91	16	502	1	0	3	1	0	22	713	1631	0	12	0	2992	0.1
Skins & furs and their products	194	2028	1052	7	11	386	54	0	239	595	2333	3	10	182	7093	0.2
Wood	17	80	95	13	10	6	692	12	248	126	194	3	38	238	1772	0.0
Wood products & paper	7679	7021	11146	9884	2787	1893	7062	22	20051	13353	12706	65090	439	8165	167298	3.9
Textiles	113282	1164	320001	18139	618	46160	105966	6	32150	28864	254844	231	1699	3900	927025	21.7
Apparel	9843	424	34388	8000	2335	39897	4913	0	9176	2868	38502	9103	189	4030	163668	3.8
Shoes, hats, umbrellas, etc.	2801	157	10421	167	27	18	266	2	668	4850	7319	971	94	12	27774	0.6
Stone, ceramic & glass products	5468	2893	537	8001	414	610	783	108	2885	24427	11018	228	658	1035	59066	1.4
Jewelry & precious metal products	22	8	0	0	0	0	0	0	0	0	1	0	0	12920	12951	0.3
Base metals and their products	75230	6368	8911	1982	31514	8527	4795	43	24352	28827	8151	1225	5231	910	206068	4.8
Electrical and Mechanical machines	101823	93502	53147	9225	81967	21845	14241	1140	96234	31982	72636	10930	1883	8648	599204	14.0
Transport equipment	4267	24896	1053	1733	104883	96752	3469	14	29589	24192	10908	21557	0	12490	335802	7.9
Photographic, precision instruments	2388	15528	1157	631	5461	1938	866	15	3173	2038	302	3399	34	9555	46486	1.1
Arms & munitions	16	50	22	0	0	0	0	0	2	0	0	2	0	0	91	0.0
Furniture & Assorted products	4516	13430	17326	375	1925	1775	5186	103	6149	2267	10658	1368	309	639	66025	1.5
Objets d'art	0	0	0	0	0	0	0	0	0	0	0	0	0	181770	181770	4.2
Total	358281	347749	492892	104813	270904	249437	176468	6522	373386	630751	472708	151870	339618	301549	4276950	100.0
Share (%)	8.4	8.1	11.5	2.5	6.3	5.8	4.1	0.2	8.7	14.7	11.1	3.6	7.9	7.1	100.0	

In millions of riels

Source: Authors' calculation based on the Customs' data.

Box 4.1 The Effects of the United States Granting MFN Status to Cambodia

Despite the political events in July 1997 and the Asian financial crisis, Cambodia managed to achieve a 33 percent increase in its exports in 1997. This remarkable development owed greatly to the United States granting Most Favored Nation (MFN) status to Cambodia on September 25, 1996. Since then, Cambodia's merchandise exports to the United States have increased rapidly, from $4.2 million in 1996, to $102.9 million in 1997 and $134.3 million in 1998 (U.S. Department of Commerce). While the United States represented only 4 percent in Cambodia's total exports in 1996, its share increased to 21 percent in 1998.

The substantial increase in Cambodia's exports to the United States after receiving MFN status is attributed to the large difference between the MFN and non-MFN tariff rates in the United States (Fukase and Martin, 2000a). The general tariff schedule that the United States applies to the few countries not receiving the MFN tariff involves generally much higher tariff rates. These rates are for the most part the original statutory rates that were applied to all U.S. imports under the Tariff Act of 1930 (also known as the Smoot-Hawley Act). After the trade liberalization of the various GATT Rounds beginning in 1947, the Unites States retained the general rates primarily against Communist countries. Table 4.A compares estimates of the MFN and non-MFN tariff rates. The simple-average MFN duty rate of 1997 U.S. Tariff Schedule is 4.9 percent as against 35 percent for the non-MFN rate.

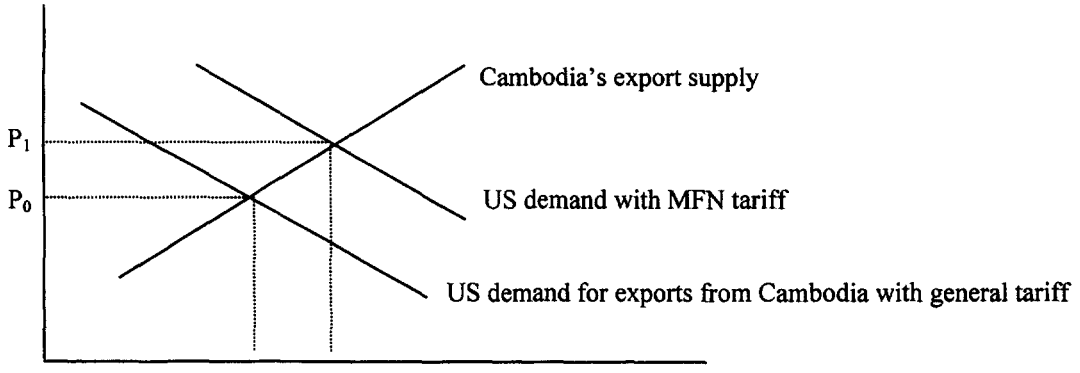
Table 4.A U.S. MFN vs. Non-MFN Rates 1997

	HS	Description	MFN Rates	Non-MFN Rates
			(%)	(%)
1	1-5	Animals & animal products	4.2	11.8
2	6-14	Vegetable products	3.8	15.9
3	15	Animal and vegetable oils	4.7	14.3
4	16-24	Processed foods, drinks & tobacco	9.6	37.3
5	25-27	Oil and minerals products	0.5	7.0
6	28-38	Chemical products	4.0	27.6
7	39-40	Plastic & rubber products	4.0	36.2
8	41-43	Skins & furs and their products	3.6	24.8
9	44-46	Wood	1.9	22.0
10	47-49	Wood products & paper	1.3	22.8
11.1	50-63	Textiles	10.0	51.4
11.2	61-63	Apparel	12.8	69.2
12	64-67	Shoes, hats, umbrellas, etc.	9.8	44.6
13	68-70	Stone, ceramic & glass products	4.5	42.6
14	71	Jewelry & precious metal products	3.0	27.5
15	72-83	Base metals and their products	3.5	29.8
16	84-85	Electrical and Mechanical machines	2.5	33.6
17	86-89	Transport equipment	3.8	25.2
18	90-92	Photographic, precision instruments	4.1	50.2
19	93	Arms & munitions	2.6	45.8
20	94-96	Furniture & Assorted products	3.7	49.4
21	97-98	Object d'Art	0.0	0.0
		Total	4.9	35.0

Sources: UNCTAD Trains Database

The key implications of receiving MFN status can be understood in terms of relatively simple partial equilibrium diagrams. The reduction in the US tariff on exports from Cambodia shifts the demand curve for exports from Cambodia to the right, as is shown in Figure 4.A. The result is an increase in both the volume of exports from Cambodia to the United States, and an increase in the price received for these exports from P_0 to P_1.

Figure 4.A Impacts of a Reduction in the Tariff on Cambodia's Exports to the USA



In 1998, textiles and apparel represented 97 percent of Cambodia's exports to the United States. Exports from this sector increased substantially-- from $2.3 million in 1996 to $98.7 million in 1997. In 1998, Cambodia's exports of this category registered $130.2 million. This development was induced by the substantial tariff cuts against Cambodia's garment exports, from a simple average of 69.2 percent under the general rate to 12.8 percent under MFN rates.

Cambodia is likely to have difficulty maintaining such high rates of growth for these products in the US market in the future, since the U.S. has imposed quotas on these exports from Cambodia. The growth rate of these quotas depends heavily upon the results of an annual, unilateral determination by the United States of whether Cambodia is protecting core labor standards. If the results are affirmative, the growth rates are quite high, at 14 percent per year, while any such increase may be withdrawn if the US decides that labor standards are not being adequately protected.

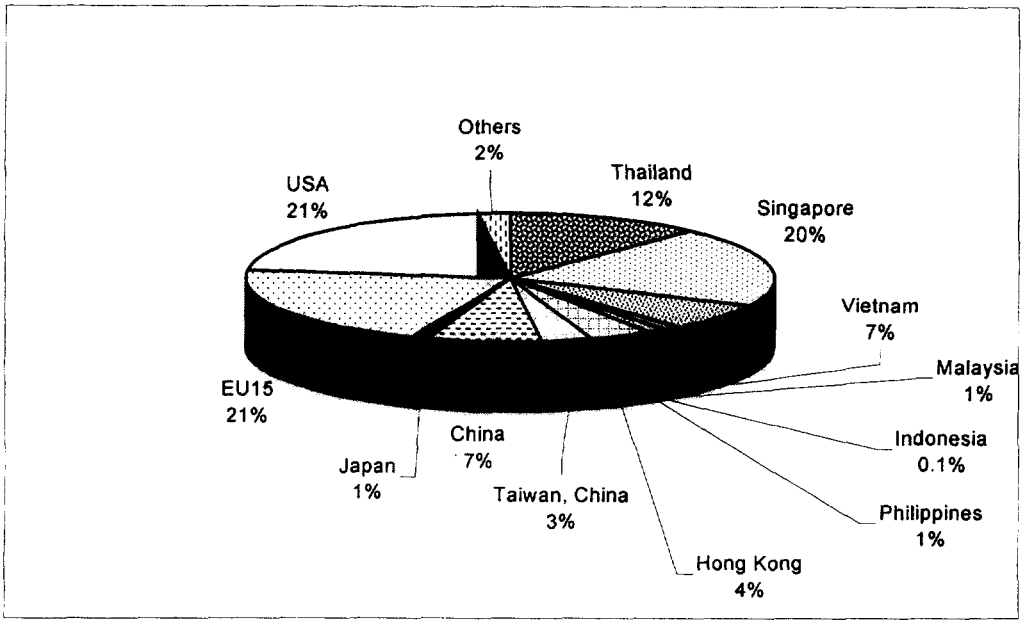
The large U.S. market offers substantial potential for Cambodia's exports especially for labor-intensive manufacturing. The market access to the industrial countries is important since they are complementary to the ASEAN markets. For some light manufacturing goods such as clothing, Cambodia appears to compete most directly with lower and middle-income ASEAN countries.

4.1.2 Export Regime

Figure 4.3 shows Cambodia's direction of exports for the year 1998 (For the data by destination and category, see Table 4.2). Major changes in Cambodia's direction of exports have occurred in recent years. Whereas Cambodia's exports to ASEAN 6 accounted for about 70 percent of its total exports in 1996, the share decreased to 41 percent (12.5 percent if banknotes are excluded) in 1998. The United States has emerged as an important export destination for Cambodia in recent years, accounting for 21 percent of Cambodia's exports in 1998.

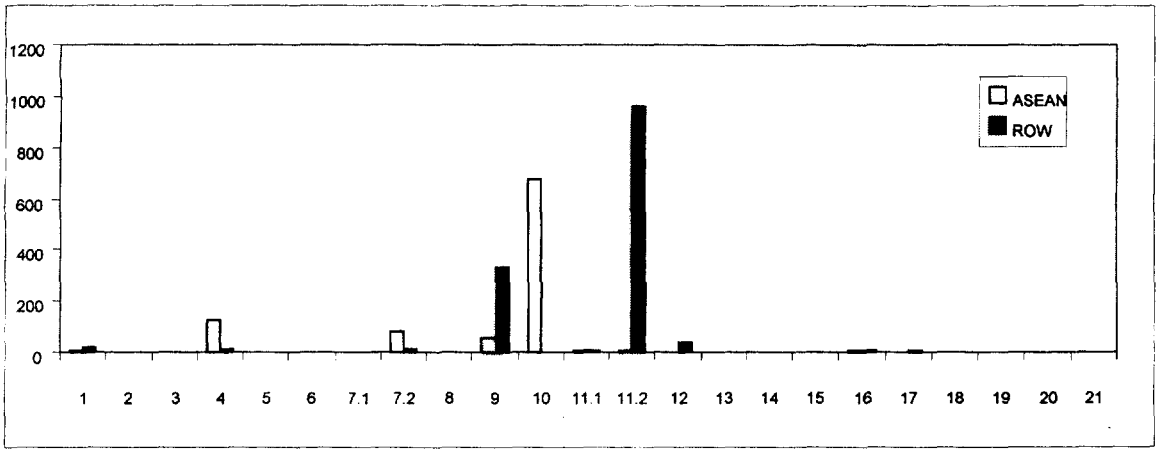
Figure 4.4 demonstrates a sharp difference in the composition of exports between ASEAN and non-ASEAN countries.

Figure 4.3 The Direction of Cambodia's Exports in 1998



Source: Customs Office

Figure 4.4 Cambodia's Exports to ASEAN and non-ASEAN Destinations in 1998



In Billions of riels
Note: Most of Cambodia's exports of category 10 are banknotes (HS4907) which are usually not included in the trade data.
Source: Customs House.

Rubber (7.2), and *processed food* are important export commodities to ASEAN. In contrast, most of Cambodia's *clothing* exports (11.2) are shipped to non-ASEAN countries. Increases in exports to non-ASEAN countries were driven by a sharp increase in garment exports to the EU, and to the United States after the US granted MFN status to Cambodia in September, 1996 (see Box 4.1). By contrast, whereas *wood products* (9) were the most important export commodities to ASEAN in 1996, Cambodia's exports of

this category were severely affected by declining demand due to the regional crisis and by a general slump in the world timber market.

4.1.3 Re-export Regime

Re-exports continue to represent an important feature of Cambodia's external trade. Re-exports continued to stem from differences in tariffs on goods imported by Cambodia and its neighboring countries. Instead of providing a complete duty exemption, which would be the normal international practice for exports trans-shipped for subsequent legal entry to another customs territory, Cambodia charges concessional duties on imports of a range of goods which, it is believed, will be smuggled into neighboring countries. The revenue generated from re-exported goods represents an important portion of tariff revenues, an issue which we will discuss further in the next section.

4.2 Revenue Implications

Overview

Trade tax revenue represents an important part of Cambodia's government revenues. Table 4.3 shows the ratio of trade tax to Cambodia's government revenues, the ratio of trade tax revenues to GDP, and the resulting share of trade tax revenues relative to GDP for the ASEAN 10 countries.

Table 4.3 Ratio of Import/Export Tax for ASEAN 10 Countries

	Trade Tax/Revenues (%)	Revenues/GDP (%)	Trade Tax/GDP (%)
Brunei[b]	4.5	33.6	1.5
Cambodia[a]	40.9	8.1	3.3
Indonesia[c]	4.0	17.7	0.7
Lao PDR[d]	23.3	11.4	2.7
Malaysia[e]	14.5	20.0	2.9
Myanmar[f]	12.2	7.0	0.8
Philippines[g]	20.3	19.0	3.9
Singapore[c]	3.5	20.5	0.7
Thailand[d]	12.1	18.9	2.3
Vietnam[e]	24.6	23.5	5.8

a.1998 estimate (Source: World Bank, 1999b); b. 1994, c. 1995, d. 1996/97, e. 1996, f. 1994/95, g. 1997 (Source: IMF, *Recent Economic Developments*, various issues)

Cambodia's share of trade tax revenues in total government revenues of 41 percent (56 percent of total tax revenues) in 1998 was substantial relative to the other ASEAN countries. This is partly because the ratio of Cambodia's tax revenue to GDP was low at only 8.1 percent of GDP in 1998 (World Bank, 1999b). Cambodia's reliance on trade taxes, as well as the weak performance of revenue collection generally, implies a particularly strong need to implement domestic tax reforms in conjunction with the AFTA reforms.

Table 4.2 Cambodia's Destination of Exports 1998

	China	EU15	Hong Kong	Indonesia	Japan	Korea	Malaysia	Philpines	Singapore	Thailand	Taiwan	USA	Vietnam	ROW	Total	Share(%)
Animals & animals products	1437	3158	10029	12	143	10	785	219	2274	1014	136	936	1983	873	23009	1.0
Vegetable products	742	255	528	41	0	221	0	0	1397	257	1341	0	371	3	5156	0.2
Animal and vegetable oils	0	0	0	0	0	0	35	0	0	0	0	0	0	0	35	0.0
Processed foods, drinks & tobacco	144	662	251	0	24	210	141	845	2399	586	488	113	121718	9407	136989	5.8
Oil and minerals products	0	1	0	0	3	0	0	0	1	0	0	0	0	0	5	0.0
Chemical products	106	42	0	0	0	0	134	0	480	10	0	36	0	17	826	0.0
Plastic & rubber products	8	25	380	0	0	0	21	0	0	0	68	100	7	0	609	0.0
Rubber	4487	0	500	0	0	608	11470	0	61827	0	5313	0	10806	0	95012	4.0
Skins & furs and their products	0	0	0	0	0	128	0	0	8	0	0	1	0	0	137	0.0
Wood	150202	25	84551	18	14821	83	7352	11432	295	23910	66481	34	14022	17687	390912	16.4
Wood products & paper	5	9	106	4	0	8	0	0	421141	260472	392	1877	0	4	684018	28.7
Textiles	267	357	1189	67	0	584	148	0	3999	298	1542	1681	100	10	10243	0.4
Apparel	620	463864	1972	0	2750	13	239	0	1509	770	123	481748	6617	11604	971831	40.8
Shoes, hats, umbrellas, etc.	0	18839	0	0	10972	0	0	0	0	0	498	5213	12	706	36241	1.5
Stone, ceramic & glass products	0	192	0	0	0	297	0	0	1	1	19	0	42	18	570	0.0
Jewelry & precious metal products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Base metals and their products	0	113	333	0	13	0	131	0	74	0	29	0	111	0	804	0.0
Electrical and Mechanical machines	27	2616	100	2043	628	47	2149	0	1580	715	1400	289	1192	928	13714	0.6
Transport equipment	0	330	0	0	58	0	385	117	0	0	0	3870	0	2650	7409	0.3
Photographic, precision instruments	0	355	51	0	76	45	10	0	567	63	0	871	0	0	2038	0.1
Arms & munitions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Furniture & Assorted products	4	491	188	1	204	5	9	0	260	0	19	0	22	16	1219	0.1
Objets d'art	3	9	0	0	0	0	0	0	10	0	0	4	0	39	65	0.0
Total	158051	491345	100179	2184	29691	2259	23010	12612	497824	288097	77850	496773	157004	43963	2380843	100
Share (%)	6.6	20.6	4.2	0.1	1.2	0.1	1.0	0.5	20.9	12.1	3.3	20.9	6.6	1.8	100.0	

In millions of riels

Source: Statistique Douanière des Marchandises Importées-Exportées-Re-Exportées 1998; millions of riels

The Sources of Cambodia's Trade Tax Revenues

Cambodia's trade tax revenues are derived from levies on retained imports, on re-exports and on exports. Table 4.4 shows the recent trends of trade tax collection by each source for the years 1995-1998. While imports increased by 62 percent in domestic currency terms between 1996 and 1998, trade tax revenues have not increased proportionally. This is largely attributed to a variety of exemptions applied to a large proportion of Cambodia's trade. For instance, a large increase in textile imports for the year 1998 has not resulted in revenue collection due to the exemptions applied through the *Investment Regime* (see below). In 1998, Cambodia collected total 358.3 billion riel worth of trade tax revenues—285.8 billion riel from retained imports, 69.4 billion riel from imports of goods destined for re-export, and 3.1 billion riel from export taxes.

Table 4.4 Cambodia's Trade and Trade Tax Revenues 1996-1998

	1996	1997	1998
Retained Imports (bil. Riels)	2634	3287	4276
Domestic Exports (bil. Riels)	1020	1480	2380
Re-Exports (bil. Riels)	606	358	508
Exchanges Rates	2700	2946	3750
Taxes on International Trade (bil. Riels)	326.1	332.4	358.3
Duties on Retained Imports	234.2	276.0	285.8
Revenues from Re-exports	83.8	46.5	69.4
Export Tax	8.1	9.9	3.1

Source: Authors' calculation based on the Customs House data

Revenues from Retained Imports

The implications of trade distortions for the economy are determined both by the level of protection and the dispersion of tariff rates. Table 2.7 and Table 2.8 in Chapter 2 show the weighted and unweighted tariff averages, and the standard deviations of the tariff schedules for ASEAN countries. The unweighted average tariff rate in Cambodia was 16.6 percent, with a standard deviation of 12.8. The trade weighted average tariff rate was 17.3 percent in 1998. This is slightly above the unweighted average rate, reflecting the importance of high-tariff commodities in Cambodia's tariff collection. Cambodia's tariff collection rate is estimated to be only 6.7 percent in 1998 due to a plethora of exemptions.

Table 4.5 shows a summary statistics for the statutory and collected tariff rates from ASEAN vs. ROW sources. The fact that Cambodia's tariffs on imports from ASEAN countries exceed those on imports from non-ASEAN sources appears to increase the initial gains from intra-ASEAN trade creation.

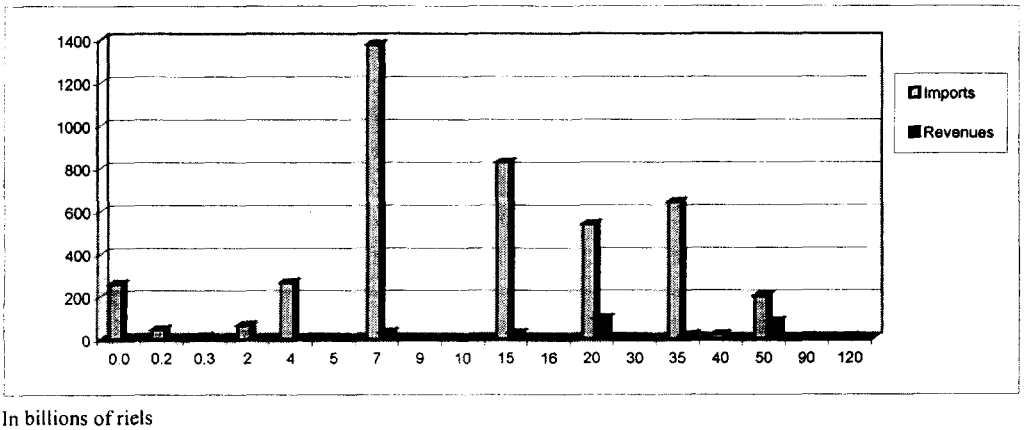
Table 4.5 Statutory/Collected Tariff Rates ASEAN vs. ROW 1998

	Statutory Tariff Rates Weighted Average	Collected Tariff Rates Weighted Average
	(%)	(%)
ASEAN	18.8	11.6
ROW	14.6	3.7
Total	17.3	6.7

Source: Authors' estimates based on 4-digit level Customs' data

Cambodia's tariff regime is characterized by a "cascading" rate structure, with higher rates for finished goods, and lower rates for intermediate goods and raw materials. Five principal tariff bands of 50, 35, 20, 15, and 7 percent form the basis of the tariff regime. The 50 percent rate applies primarily to "luxury" goods; 35 percent to most consumer goods and building materials; 20 percent to petroleum products; 15 percent to intermediate goods and machinery and equipment; and 7 percent to essential goods and basic raw materials. It is clear that such a system provides quite high rates of protection for import-substituting production. The Effective Rate of Protection (ERP) for such industries tends to be high, in turn distorting the pattern of investment (The Service Group and International Economics-Washington, 1997). Figure 4.5 shows Cambodia's import values and revenues by tariff band in 1998. Figure 4.5 highlights the dominance of imports from the 7 percent tariff category in the total value of imports. However, most of the tariff revenues are generated from the relatively high tariff bands of 20 percent and 50 percent. The large share of tariffs and tariff revenues in the 20 percent tariff band is due to imports of various types of petroleum-based products.

Figure 4.5 Imports and Revenues by Tariff Band 1998



In billions of riels
Source: Customs Office, *Common Regime (00)*

Another important characteristic of Cambodia's tariff revenue structure is its high reliance on a few commodities as revenue sources. Table 4.6 shows the ten most important commodities for Cambodia's tariff revenues on retained imports. Table 4.6 shows that Cambodia collected 286 billion riel from retained imports, of which 66 percent was collected from ASEAN countries in 1998. A significant portion of total import duties is collected from imports that are also excisable. Four excisable products, namely petroleum, motorcycles, cigarettes, and motor cars, represented 67 percent of Cambodia's revenues from retained imports. As for revenues from ASEAN sources, petroleum products and cigarettes alone accounted for 74 percent. Table 4.7

demonstrates that there are significant exemptions to import duties in Cambodia. Only 40.1 percent of the value of imports fall under the *Common Regime* for which regular tariff duties are applied. The other sixty percent of imports fall under various categories of exemptions including the *Investment Code* (41.4 percent), *Grant and Aid* (8.0 percent), and *Other Privileged Regime* (4.7 percent). Cambodia has adopted an extremely liberal Law on Investment. Projects approved by the Cambodian Investment Board (CIB) receive a wide range of benefits including a concessional 9 percent rate of corporate income tax, an income tax holiday and duty-free imports of capital goods and of intermediate goods used in the production of exports.

Table 4.6 Revenue-producing Commodities 1998 (Retained Imports)

			Total		ASEAN		ROW	
	HS4	Description	Revenue (bil. Riels)	Share (%)	Revenue (bil. Riels)	Share (%)	Revenue (bil. Riels)	Share (%)
1	2710	Petroleum and products	132.1	46.2	132.1	69.9	0.0	0.0
2	8711	Motorcycles	31.1	10.9	4.1	2.2	27.0	27.8
3	2402	Cigarettes	17.8	6.2	8.6	4.5	9.2	9.5
4	8703	Motor cars	10.2	3.6	0.1	0.0	10.1	10.4
5	2523	Cement	6.1	2.1	6.1	3.2	0.0	0.0
6	6309	Worn clothing	5.7	2.0	0.4	0.2	5.3	5.4
7	3004	Medicaments	4.3	1.5	0.9	0.5	3.4	3.5
8	2203	Beer	4.2	1.5	2.2	1.1	2.1	2.1
9	8704	Motor vehicles	4.1	1.4	0.3	0.1	3.9	4.0
10	2103	Sauces and preparations	3.9	1.4	2.6	1.4	1.3	1.3
		Others	66.2	23.3	31.5	16.7	34.6	35.8
		Total	285.8	100.0	188.8	100.0	96.9	100.0

Source: Estimates based on the Customs Office data.

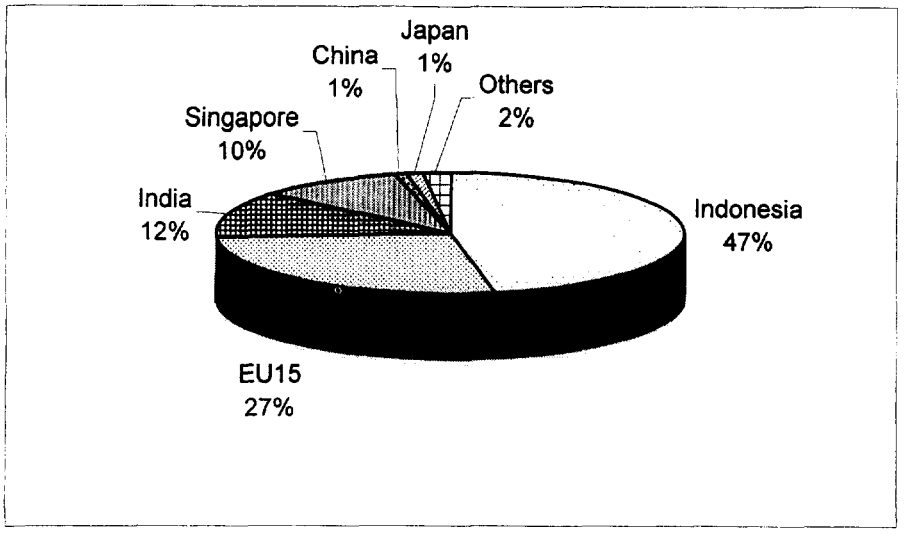
The changes in revenues resulting from tariff cuts depend on key elasticities as well as the initial rates applied. If domestic goods and imports are good substitutes, it is more likely that the AFTA preferential tariff reductions will lead to more trade creation (trade which in turn leads to the increases in tariff revenues). In contrast, if the substitution between ASEAN and the rest of the world imports is larger, diversion of imports from sources other than ASEAN will be larger, with adverse consequence for tariff revenues and for economic welfare.

Revenues from Re-exports

In 1998, Cambodia collected 69 billion riel, or 20 percent of total import duties, from the *re-export* category. Goods which are believed to be widely smuggled into neighboring countries, such as cigarettes, are subjected to lower tariff rates on the share of these goods that is estimated to be re-exported.[34] Figure 4.6 presents the sources of imports classified as *Re-export Category (34)* in the customs' data. Figure 4.6 shows that about 57 percent of imports classified as re-exports came from ASEAN, namely Indonesia and Singapore.

[34] Since much of the re-exporting is illegal in the country of destination, the concessional duty is not granted on the basis of documented re-exporting. Rather, the share of the exports subject to the lower duty rate is based on an estimate made for each individual brand by Customs' staff. This induces an undesirable element of discretion into the administration of Customs. The revenues that Cambodia's tariff regime for re-exports generates must be weighed against the potential losses of revenues from sales actually made on the domestic market, but levied duties at the re-export rate (Martin, 1996).

Figure 4.6 The Sources of Cambodia's Re-exports 1998



Source: Customs Office (Category '34')

The incentives to re-export goods are influenced most strongly by differences in tariff rates between Cambodia and the destination countries, rather than by the absolute level of Cambodia's tariff rates. Thus, the likely change in revenues from re-exports resulting from AFTA depends on 1) the changes in re-export tariff rates resulting from AFTA accession, 2) the cost of transporting goods through Cambodia to Vietnam, and 3) the changes in protection on the Vietnamese side. As protection declines in Vietnam, more imports are likely to enter Vietnam legally, rather than being smuggled.

Table 4.8 presents the comparison of tariff rates between Cambodia and Vietnam for Cambodia's major re-export commodities. The first column presents the estimated revenues from re-exports, the next two columns show the differences between the nominal tariff rate and re-export tariff rates for Cambodia, and the last two columns indicate Vietnam's nominal tariff rates and the category of Vietnam's CEPT list to which the commodity belongs. Vietnam's current tariff structure implies relatively high protection on a number of products, which in turn implies high returns to smuggling. For instance, cigarettes, which represent 99 percent of Cambodia's estimated re-export revenues, are banned for import into Vietnam. Under Vietnam's CEPT schedule, the main items that Cambodia's re-exports are currently excluded from AFTA commitments—and they would clearly not meet the criteria for Article XX of the GATT. Until 1997, Cambodia's items under the *re-export* category included such consumer goods as television sets and video recordings, but Cambodia eliminated these items from the re-export regime. As the tariff rates of these commodities are reduced in Vietnam (many consumer goods are included in Vietnam's Temporary Exclusion List which are to be liberalized by 2006), it is likely that Cambodia's revenues from re-exports will decrease, since more imports are likely to enter Vietnam legally rather than being smuggled.

Table 4.8 Tariffs on Re-export Commodities Cambodia vs. Vietnam

			Cambodia Tariff Schedule		Vietnam's Tariff Schedule	
HS4	Description	Re-export Revenue (bil. Riel)	1996 Tariff Rate (%)	Re-export Tariff Rate (%)	1998 Tariff Rate (%)	CEPT List
2402	Cigarettes	69.3	50	13.8	Prohibited	General Exception
2208	Spirits, liqureres, alcoholic preparations	0.2	50	15	50	General Exception
2204	Wine	0.01	50	15	50	General Exception
8703	Motor cars	0.001	120	15	Prohibited	General Exception
	Total	69.4				

Source: Customs Office; ASEAN Secretariat, 1997, 1998; Centre for International Economics, 1998a.

Export Taxes

Cambodia's current trade regime also includes a set of export taxes levied on a relatively small number of tariff lines.[35] However, as a consequence of the extensive illegal trade in rubber and timber and a number of *ad hoc* exemptions to exporters, Cambodia's collections of export tax revenue are relatively low, at 3.1 billion riel or 0.9 percent of customs revenues in 1998.

4.3 Modeling Approach

4.3.1 Model Structure

We use a simple quantitative framework to trace through the consequences of preferential liberalization. This model is in turn an extended version of the single-region model developed for the Lao PDR (see Chapter 3). We incorporated export taxes into the model and analyzed the *second-best* impacts (see Box 4.2). As a result, the impacts of regional trade liberalization can be divided into four categories: --gains from trade creation, losses from trade diversion, terms-of-trade effects, and second-best welfare impacts arising in the presence of export taxes.

4.3.2 Data and Liberalization Scenarios

Cambodia's Draft CEPT Lists

Cambodia's CEPT Product Lists[36] consist of 6807 tariff lines of which 3040 tariff lines are in the Inclusion List (IL), 3514 items in the Temporary Exclusion List (TEL), 48 items in the Sensitive List (SL), and 205 items in the General Exceptions List (GEL). Cambodia's criteria for including the items in the IL were 1) tariff lines that generated 1 million riel or less in revenues, 2) tariff lines that generated 1 million riel or more in revenues but whose inclusion carries no serious impact on revenues and could contribute to the growth of the national economy or the development of human resources (e.g. computer accessories), 3) tariff lines with higher tariff rates which do not generate revenues due to the small volume of imports (Chhon and Moniroth, 1998).

[35] These taxes are set at 10 percent on timber, rubber, and fish products (Royal Government of Cambodia, 1999). The export tax on rubber was exempted in 1998.

[36] We analyze Cambodia's CEPT lists at the time of its AFTA accession. Since then, Cambodia transferred some items from the TEL to the IL and has been considering transferring petroleum products from the GEL.

Table 4.7 Cambodia's Retained Import Tax Structure, Common Regime and Exemptions 1998

			Common Regime (00)		Investment Code (30)		Grant and Aid (50)		Other Privileged regime (60)		Others (20), (40), (70)		Total		
	HS	Description	Imports (mill. Riels)	Share (%)	Imports (mil.Riels)	Share (%)	Imports (mil. Riels)	Share (%)	Imports (mil. Riels)	Share (%)	Imports (mil. Riels)	Share (%)	Imports (mil.Riels)	Statutory Tariff(%)	Collected Tariff[a](%)
1	1-5	Animals & animals products	6755	35.9	2069	11.0	203	1.1	32	0.2	9738	51.7	18818	15.9	4.4
2	6-14	Vegetable products	22144	30.2	19237	26.2	17994	24.5	13953	19.0	1	0.0	73330	9.0	2.3
3	15	Animal and vegetable oils	12018	93.4	845	6.6	4	0.0	0	0.0	0	0.0	12866	7.0	6.5
4	16-24	Processed foods, drinks & tobacco	301816	88.0	36822	10.7	1121	0.3	334	0.1	2770	0.8	342869	15.4	12.0
5	25-27	Oil and minerals products	563978	84.0	61508	9.2	14861	2.2	27616	4.1	3517	0.5	671480	23.9	20.6
6	28-38	Chemical products	151846	57.0	39937	15.0	50253	18.9	10027	3.8	4792	1.8	266309	5.3	3.2
7.1	39-40	Plastic & rubber products	28599	33.2	49462	57.4	6805	7.9	455	0.5	231	0.3	86192	14.3	4.8
7.2		Rubber	178	6.0	2798	93.5	0	0.0	0	0.0	16	0.5	2992	7.0	0.4
8	41-43	Skins & furs and their products	1146	16.2	5612	79.1	335	4.7	0	0.0	0	0.0	7093	31.7	4.9
9	44-46	Wood	560	31.6	1178	66.5	32	1.8	0	0.0	2	0.1	1772	33.1	10.3
10	47-49	Wood products & paper	22953	13.7	58180	34.8	6981	4.2	76076	45.5	257	0.2	167298	7.0	1.0
11.1	50-60	Textiles	22389	2.4	902247	97.3	1372	0.1	1017	0.1	0	0.0	927025	20.1	0.2
11.2	61-63	Apparel	83637	51.1	70134	42.9	8495	5.2	1344	0.8	36	0.0	163668	20.1	3.9
12	64-67	Shoes, hats, umbrellas, etc.	5689	20.5	20800	74.9	294	1.1	4	0.0	971	3.5	27774	29.4	1.7
13	68-70	Stone, ceramic & glass products	52806	89.4	4566	7.7	776	1.3	567	1.0	150	0.3	59066	8.1	7.1
14	71	Jewelry & precious metal products	12950	100.0	1	0.0	0	0.0	0	0.0	0	0.0	12951	0.4	0.4
15	72-83	Base metals and their products	34342	16.7	133004	64.5	30408	14.8	4422	2.1	3679	1.8	206068	9.0	1.6
16	84-85	Electrical and Mechanical machines	136603	22.8	292173	48.8	129588	21.6	33755	5.6	4759	0.8	599204	15.1	3.2
17	86-89	Transport equipment	230511	68.6	35464	10.6	27936	8.3	28948	8.6	5897	1.8	335802	24.2	14.6
18	90-92	Photographic, optical instruments	9262	19.9	1648	3.5	31250	67.2	1945	4.2	1678	3.6	46486	10.8	1.8
19	93	Arms & munitions	21	22.8	5	5.8	0	0.0	0	0.0	0	0.0	91	38.0	8.4
20	94-96	Furniture & Assorted products	14830	22.5	35023	53.0	12702	19.2	2455	3.7	964	1.5	66025	13.7	4.6
21	97-98	Objets d'art	0	0.0	0	0.0	0	0.0	0	0.0	181770	100.0	181770	0.0	0.0
			1715036	40.1	1772713	41.4	341407	8.0	202949	4.7	221227	5.2	4276950	17.3	6.7

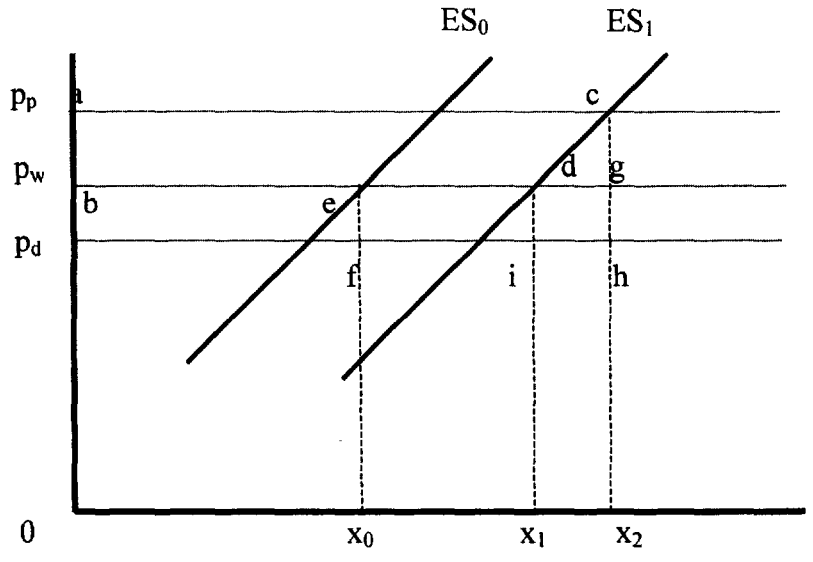
Note: a. Collected tariff rates are estimated assuming that Cambodia collects tariff revenues only for the items under the *Common Regime* (00).
Source: Authors' estimates based on the Customs' House data.

Box 4.2 Import Liberalization in the Presence of an Export Tax - Another Second-best Welfare Impact

The fact that Cambodia imposes export taxes on some of its major exports means that the welfare consequences of these taxes may need to be taken into account when import liberalization is being assessed. As Harberger (1971) showed, the marginal welfare consequences of any change consist of the change in the quantity passing over the distortion times the size of the distortion. Thus, $dW = t.dq$ where dW is the change in welfare, t is the tax rate on imports or exports, and dq represents the change in quantity. These welfare impacts are another second-best welfare impact of liberalization.

The real exchange rate depreciation following import liberalization causes a shift in the export supply function from ES_0 to ES_1 in Figure 4.A. In this Figure, the domestic price of exports, p_d, is below the world price, p_w, because of the export tax. The outward shift in the export supply curve increases exports from x_0 to x_1. This yields an increase in welfare of $(p_w—p_d).(x_1 - x_0)$ (area edif). As in the case of trade diversion, this *second-best* welfare gain corresponds directly with a change in tax receipts. It arises because the price received on world markets for an additional unit of exports, p_w, exceeds the domestic marginal cost of producing the good, p_d.

Figure 4.A Welfare Impacts of Improved Access to Partner Markets and Second-best Welfare Gains



Since Cambodia's accession to AFTA results in trade barrier reductions on Cambodia's exports to those partners, Cambodia will experience a terms-of-trade gain on the export side. The terms-of-trade gain arising from the increase in the price received by Cambodia for its exports to the partner is measured by $(p_p - p_w).x_1$. The standard part of the trade creation gain, that is the part that would accrue even in the absence of an export tax, is $1/2.((p_p - p_w).(x_2 - x_1)) + (p_p - p_w).x_1$ (area acdb). In addition, the increase in exports from x_1 to x_2 results in an increase in export tax revenues of $(x_2 - x_1).(p_w - p_d)$ (area dghi). Overall, the area eghf will be measured as the fourth component of welfare change resulting from the increase in an export tax.

Table 4.9 shows the structure of Cambodia's CEPT lists. Import and export values from/to ASEAN for the year 1998 computed from the Customs' data have been assigned to each category in each list.[37] Table 4.9 shows that the import values for the items in the IL, TEL, SL, and GEL were 14 percent, 50 percent, 0.1 percent and 36 percent respectively. Trade weighted average statutory tariff rates corresponding to each list are 11.7 percent, 15.8 percent, 7.0 percent and 25.7 percent. Estimated tariff collection rates for the items in the IL are especially low, at only 2.4 percent on average in contrast with a high rate of 23.0 percent for the GEL goods. A high proportion of import values in the GEL is attributed to Cambodia's inclusion of petroleum products (HS2710) in the list. If this product were excluded, the GEL would account for only 2 percent of import value. Export values assigned to the IL, TEL, SL and GEL are 43 percent, 56 percent, 0.9 percent, and 0.1 percent respectively implying that Cambodia put most of its export-oriented products either in the IL or TEL.

Liberalization Scenarios

Throughout the analyses, most products have been classified by the 21 sections of the Harmonized System (HS) Convention. Given the importance of the garment industry for Cambodia, Section 11 is split into the *textile* (HS 50-60) and *apparel* (HS 61-63) industries. Also, *rubber*[38] is separated as 7.2 taking into consideration the importance of this commodity in Cambodia's exports. This classification was chosen since it is consistent with the ASEAN nomenclature which is in turn based on the Harmonized Commodity Description and Coding System (HS) of the World Customs Organization (WCO). Imports and exports matrices are estimated based on Cambodia's Customs' data and *Statistique Douanière des Marchandises Importées-Exportées-Re-Exportées* (1998) respectively, by these 23 traded sectors and by Cambodia's 14 main trading partners (Table 4.1-2). Tariff matrices are computed based on the Customs' data. The simulation scenarios are as summarized below.

Experimental Design

Scenario 1 (AFTA1): Inclusion List (IL) liberalization under AFTA (2002 for ASEAN 5, 2006 for Vietnam, and 2010 for Cambodia. Cambodia reduces the tariff rates of the items in the IL to 5.0 percent. ASEAN-6 members reciprocate these concessions.

Scenario 2 (AFTA2): Temporary Exclusion List (TEL) liberalization under AFTA (2002 for ASEAN 5, 2006 for Vietnam, and 2010 for Cambodia). Cambodia reduces the tariff rates of the items in the IL and TEL to 5.0 percent. ASEAN-6 members reciprocate these concessions.

Scenario 3 (AFTA3): Scenario 2 plus Sensitive List (SL) liberalization (2010 for ASEAN 5, 2013 for Vietnam, and 2017 for Cambodia). Cambodia reduces the tariff rates of the items in the IL, TEL, SL to 5.0 percent and ASEAN-6 members reciprocate these concessions.

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[37] Cambodia's draft CEPT lists have been drawn up on the basis of a revised tariff schedule that has been harmonized to the ASEAN tariff nomenclature at the 8-digit level. However, since the new nomenclature has not yet put into effect by the Customs, the analyses have been conducted at the 4-digit level.

[38] HS4001 through HS4004 are defined as rubber.

Scenario 4 (AFTA4): Scenario 3 plus General Exception List (GEL) liberalization. Cambodia reduces, as a counterfactual, the tariff rates of the items in the IL, TEL, SL and GEL to 5.0 percent. The ASEAN-6 members reciprocate these concessions.

Scenario 5 (UNILATERAL): Scenario 4 plus unilateral tariff reduction on a non-discriminatory basis. We assume that Cambodia reduces its tariff rates to 5 percent against all imports on an MFN basis. The rest of the world maintains current protection rates. For the purpose of comparison, we maintain the liberalization by the ASEAN partners on Cambodia's exports to be identical to scenario 3.

Scenario 6 (AFTA3-DE): We introduce the implications of the exemptions on textiles used in the production of clothing exports. The results from this approach are compared with those from the standard AFTA model above. The shocks remain the same as those in scenario 3.

Scenarios 1 through 4 (AFTA 1-4) simulate the AFTA reforms scheduled under Cambodia's *CEPT Product Lists*. The likely impacts of liberalization by both Cambodia and its partner countries, the liberalizations of the IL (scenario 1), TEL (scenario 2), SL (scenario 3), GEL (scenario 4), were investigated. Scenario 5 simulates Cambodia's unilateral liberalization on a non-discriminatory basis. The shocks to the tariff rates in the model are defined as the difference between Cambodia's MFN rates and its concessional rates, which were computed on an item by item basis at the HS 4-digit level and then averaged up to the 23 categories for each of Cambodia's 14 major trading partners. To evaluate the full effects of AFTA, it is necessary to take into account the simultaneous impacts of changes in protection in partner countries. The current nominal rates of protection in ASEAN partner countries were computed based on *CEPT Product Lists* (ASEAN Secretariat, 1997/1998). The shocks on Cambodia's export side were assumed to be the difference between ASEAN partners' MFN rates and the concessional rates weighted by Cambodia's exports.

The fact that collection rates (6.7 percent) are so much below the statutory rates (17.3 percent) poses some problems. One approach to dealing with this problem would be to use collection rates instead of statutory rates. However, this approach ignores the fact that tariff reductions and exemptions are given only for specific reasons, and that the rates of protection applying on additional imports are typically the statutory rates. We consider the two most common types of exemption – those given for investment goods, and those for intermediates used in the production of exports.

Most of the exemptions given for imports of capital goods are given for specific schedules of capital goods listed in the investment proposal and can be thought of as a revenue foregone in order to attract investors. For our purposes, the volumes of these incentives are essentially fixed by the determinations of the Cambodian Investment Board. Such lump sum transfers do not affect the behavior considered in this paper, which depends only on the incentives to produce or consume additional inputs. In standard economic theory, the quantity of output produced by a firm, once its capital is fixed, will depend only on the prices of inputs and outputs. Lump sum transfers have no impact (Varian, 1992). Thus, we use the statutory rates for our simulations of impacts on the real economy. However, when we seek to evaluate changes in government revenues, the changes in import and export tax revenues are adjusted proportionally assuming that

Cambodia collects tariff revenues only on the items under the *Common Regime* (00). In doing this, we assume that the pattern and relative size of exemptions remain the same after policy changes.

The exemptions and tariff reductions given for inputs used in the production of exports have different implications from the exemptions given for imports of capital goods. Exemptions for intermediates undoubtedly make it more attractive to increase imports of these intermediate goods, and to expand production of import-intensive exported goods. While we cannot hope to capture this impact exactly in a model without separate intermediate input demands, we obtain a rough approximation by modeling these measures as a duty on intermediate inputs matched by a corresponding export subsidy paid on goods exported (scenario 6). Under Cambodia's current Law on Investment, raw materials used for exports are exempted from import duties. For instance, 97 percent of *textile* imports were given *Investment Code (30)* status in 1998 (see Table 4.7). Assuming that these imports were given duty-free status, this in turn benefits the *clothing* industry for exports relative to other industries that are unable to benefit from the duty exemption system. We treat the forgone tariff revenues under the *Investment Code (30)* for the *textile* industry as an implicit subsidy for *clothing* exports.[39] This magnitude of the initial export subsidy is calculated expressing tariff revenues forgone on textile imports as a percentage of the value of exports. We assume that the *clothing* sector is currently receiving an export subsidy of 18.4 percent, which will be reduced as the import duties on the *textile* sector are reduced under the AFTA plan.

4.3.3 Results

Table 4.10 shows the economy-wide results of AFTA reform (scenarios 1-4), a non-discriminatory liberalization (scenario 5), and an alternative scenario with the presence of the duty exemptions on textiles used in the production of exports (scenario 6). Tables 4.11 through 4.13 present the sectoral results for scenario 3 (which is assumed to be the representative scenario for AFTA reform), scenario 5 and scenario 6 respectively.

As the scope of AFTA widens from Scenario 1 through 4, both imports and exports increase. With the import liberalization resulting from Cambodia's tariff reduction on imports from its ASEAN partners, imports from ASEAN rise (*trade creation*). However, the declines in the prices of these goods cause consumers to substitute away from the goods supplied by the rest of the world (*trade diversion*). Whereas the increase in imports to ASEAN with the IL liberalization is estimated to be small at about 2 percent, imports from ASEAN increase by 14 percent with TEL liberalization and by 23 percent with GEL liberalization. The increase in overall imports is reduced by the decrease in imports from the rest of the world due to the discriminatory nature of AFTA. The sectoral results in Table 4.11 demonstrate that trade diversion effects tend to be relatively large in some sectors. For instance, the negative welfare effects of 3.6 billion riels in *electrical and mechanical machines* and 3.2 billion riels in *transport equipment* appear to be significant since trade diversion from the rest of the world into ASEAN leads to welfare losses in the form of decreased tariff revenues. As expected, when Cambodia extends AFTA

[39] Such a subsidy is an offset against the direct costs imposed on this industry by protection and hence would not be classified as an export subsidy by WTO.

concession on an MFN basis, (scenario 5), Cambodia's increase in imports is the largest by about 6 percent.

The sectoral results of unilateral liberalization in Table 4.12 reveal that the trade creation effects are particularly large in relatively highly protected products such as *processed food, drinks and tobacco, oil and mineral products, textiles and apparel,* and *transport equipment.*

A key consequence of trade liberalization is a depreciation of the real exchange rate, or a reduction in the price of nontraded goods relative to world prices. The fall in the price of nontraded goods in turn increases the price of exports relative to the price of nontraded goods, and hence increases the incentive to export. Not surprisingly, the magnitude of the real exchange rate depreciation[40] increases as the scope of the liberalization widens. The real exchange rate depreciation ranges from 0 percent in scenario 1 to 4.8 percent in scenario 5. Another source of Cambodia's export expansion is ASEAN partners' tariff cuts against imports from Cambodia. With the tariff concessions that Cambodia receives from its ASEAN partners, its exports to ASEAN increase by 1.7 percent under IL liberalization, 8.4 percent under TEL liberalization and 8.5 percent under SL liberalization. On the export side, the magnitudes of the *terms-of-trade* gains depend on the initial level of Cambodia's exports to ASEAN and the changes in export prices resulting from the partners' concessions.

For some of Cambodia's current important export categories to ASEAN, Table 4.11 shows that the improvements in the terms-of-trade for *processed foods*, *rubber*, and *wood* contribute to welfare improvements of 5.5 billion riels, 1.3 billion riels, and 7.1 billion riels. For some categories, although initial exports to ASEAN are small, gains resulting from high initial protection by ASEAN partner countries are significant; improvements in the terms-of-trade for *animal products*, *apparel*, and *electrical and mechanical machines* result in welfare improvements of 0.6 billion riels, 8.7 billion riels, and 0.4 billion riels respectively. Improved market access for Cambodia's agricultural and fishery products and labor-intensive commodities such as machinery parts and electronics to ASEAN would be one of the most important benefits from AFTA, given the very large proportion of Cambodia's population engaged in agriculture and the potential for development of labor-intensive manufacturing.

[40] The real exchange rate is defined as $r = E\,(p^*/p_d)$ where r is real exchange rate; E is nominal exchange rate, p^* is world price; and p_d is the price of nontraded good. In our experiment, E is chosen to be the numeraire which is equal to unity. Under small country assumption, p^* is assumed to be fixed. Thus, the fall of the domestic price p_d implies real exchange rate depreciation.

Table 4.9 Structure of Cambodia's Draft CEPT Lists

	HS	Description	Inclusion List (IL)				Temporary Exclusion List (TEL)				Sensitive List (SL)				General Exception List (GEL)			
			Imports			Exports	Imports			Exports	Imports			Exports	Imports			Exports[a]
			Value (mil. Riels)	Statutory Tariff (%)	Collected tariff (%)	Value (mil. Riels)	Value (mil. Riels)	Statutory Tariff (%)	Collected tariff (%)	Value (mil. Riels)	Value (mil. Riels)	Statutory Tariff (%)	Collected tariff (%)	Value (mil. Riels)	Value (mil. Riels)	Statutory Tariff (%)	Collected tariff (%)	Value (mil. Riels)
1	1-5	Animals & animals products	192	28.0	27.9	567	6095	11.4	10.9	2428	68	5.9	3.0	2662	64	4.0	0.9	0
2	6-14	Vegetable products	3036	12.3	0.5	847	19573	7.3	2.2	1362	1974	7.1	7.1	17	41	14.4	0.2	0
3	15	Animal and vegetable oils	41	7.7	7.7	0	12486	7.0	6.5	35	0	na	na	0	0	na	na	0
4	16-24	Processed foods, drinks & tobacco	1827	35.0	0.3	0	148179	14.5	13.4	125532	0	na	na	0	17278	16.1	16.1	157
5	25-27	Oil and minerals products	18818	7.0	2.5	0	82818	13.2	7.3	0	0	na	na	0	568965	26.0	23.2	1
6	28-38	Chemical products	61425	4.2	1.7	95	39109	9.4	7.6	535	0	na	na	0	261	7.0	6.9	0
7.1	39-40	Plastic & rubber products	2026	8.1	3.2	23	37048	12.1	5.6	27	0	na	na	0	0	na	na	0
7.2		Rubber	725	7.1	1.7	74516	24	7.0	0.6	9587	0	na	na	0	0	na	na	0
8	41-43	Skins & furs and their products	855	13.2	6.9	6	50	31.4	0.1	8	0	na	na	0	0	na	na	0
8	44-46	Wood	839	34.9	0.8	47293	290	28.4	23.7	9736	0	na	na	0	0	na	na	0
10	47-49	Wood products & paper	389	6.3	3.0	0	50422	7.0	2.4	57	0	na	na	0	0	na	na	0
11.1	50-60	Textiles	6381	19.6	1.1	3	180339	26.6	0.3	4609	0	na	na	0	0	na	na	0
11.2	61-63	Apparel	367	7.6	0.7	24	24778	26.3	2.5	9137	0	na	na	0	0	na	na	0
12	64-67	Shoes, hats, umbrellas, etc.	11	35.0	31.0	0	6037	9.8	6.6	12	0	na	na	0	0	na	na	0
13	68-70	Stone, ceramic & glass products	1515	14.3	12.8	0	35347	7.2	6.6	44	0	na	na	0	0	na	na	0
14	71	Jewelry & precious metal products	0	na	na	0	0	na	na	0	0	na	na	0	0	na	na	0
15	72-83	Base metals and their products	23456	9.4	4.3	108	41783	10.3	2.1	296	0	na	na	0	0	na	na	0
16	84-85	Electrical and Mechanical machines	70167	15.6	1.9	4234	84657	14.6	4.4	3607	0	na	na	0	0	na	na	0
17	86-89	Transport equipment	23721	19.1	1.3	502	35276	18.2	13.1	502	0	na	na	0	0	na	na	0
18	90-92	Photographic, precision instruments	4528	5.4	2.0	69	2230	15.0	9.7	524	0	na	na	0	0	na	na	0
19	93	Arms & munitions	0	na	na	0	0	na	na	0	0	na	na	0	2	7.3	7.3	0
20	94-96	Furniture & Assorted products	7141	23.0	9.7	5	6577	12.3	8.0	293	0	na	na	0	670	50	50	48
21	97-98	Objets d'art	0	na	na	0	0	na	na	10	0	na	na	0	0	na	na	0
		Total	227459	11.7	2.4	128292	813116	15.8	5.9	168341	2042	7.0	6.9	2679	587281	25.7	23.0	206
		Share (%)	14.0			42.7	49.9			56.1	0.1			0.9	36.0			0.1

Source: ASEAN Secretarian.

Note: a. Cambodia's exports of banknotes (HS4907) of which the tariff rates are zero are excluded from Cambodia's exports to ASEAN.

b. Collected tariff rates are estimated assuming that Cambodia collects tariff revenues only for the items under the Common Regime (00).

Column 6 of Table 4.10 demonstrates the results of the SL liberalization (scenario 6) in the presence of the duty exemption scheme on textile imports used for the production of exports of garments (scenario 6). Tables 4.13 shows the sectoral decompositions. Interestingly, the results show that the decrease in the implicit export subsidy resulting from tariff reductions in the textile sector leads to contraction of *clothing* exports by 4.1 percent. In contrast, the magnitude of the increase in exports for other sectors is larger relative to scenario 3. This is because the real exchange rate depreciation resulting from the reduction in the export subsidy for the garment sector increases the export competitiveness of other sectors.

Table 4.10 Economy-wide Results for Scenario 1-5

	Scenario 1 IL Liberalization	Scenario 2 TEL Liberalization	Scenario 3 SL Liberalization	Scenario 4 GEL Liberalization	Scenario 5 Non Discriminatory Liberalization	Scenario 6 SL Liberalization with Duty Exemption on Textiles
Real Expenditure (%)	0.05	0.23	0.23	0.44	0.61	0.24
Total Imports (%)	0.3	1.9	2.0	3.8	5.7	1.2
Imports from ASEAN (%)	2.0	13.9	13.9	23.0	9.4	13.1
Imports from ROW (%)	-0.7	-5.4	-5.4	-8.1	3.5	-6.1
Total Exports (%)	0.4	2.5	2.5	3.8	9.2	1.2
Exports to ASEAN (%)	1.7	8.4	8.5	12.8	15.6	10.4
Exports to ROW(%)	-0.6	-1.7	-1.8	-0.4	4.7	-5.3
Price of Non Tradable Goods (%)	0.0	-0.6	-0.6	-1.7	-4.8	-1.4
Decomposition of Welfare Changes Measured by Equivalent Variation (mil. Riels)	6596	28982	29347	55184	73918	30990
% of GDP	0.06	0.27	0.27	0.51	0.69	0.29
Contribution of Trade Creation	4260	29149	29181	51087	25199	27202
Contribution of Trade Diversion	-2951	-23944	-23916	-34447	23556	-26554
Contribution of Terms-of-trade	5240	23657	23946	38362	24814	23793
Contribution of Export Tax	47	121	136	182	349	205
Contribution of Export Subsidy	na	na	na	na	na	6344
Import Tax Revenues (%)	-1.5	-10.7	-10.7	-47.7	-70.3	-11.3
Export Tax Revenues (%)	2.3	5.6	6.4	7.9	13.4	8.7
Export Subsidy Payment (%)	na	na	na	na	Na	-29.1

Source: Author's Calcuations.

The magnitude of the real exchange rate depreciation of 1.4 percent in scenario 6 is substantially higher relative to scenario 3 (0.6 percent). Since *clothing* is exported predominantly to the rest of the world, the contraction in *clothing* exports implies increases in exports to ASEAN relative to the rest of the world. Although the exact numbers given in the tables should not be taken too seriously, the results reveal an important insight. A system of high import tariffs and deep exemptions, as is the case of Cambodia's textile sector, tends to stimulate exports from assembly-type operations, rather than from sectors with strong forward and backward linkages to other domestic sectors.

Overall, the results imply that the static impacts of Cambodia's accession to AFTA are positive, but relatively small in magnitude. The effects of IL liberalization are minimal (0.05 percent of real expenditure or 0.06 percent of GDP) reflecting an initial low level of tariff rates on items in the IL. The liberalization of the TEL quadruples the impacts of AFTA (0.23 percent of real expenditure or 0.27 percent of GDP). With SL liberalization (scenario 3), the welfare level is slightly higher relative to scenario 2 since Cambodia benefits from improvements in its terms-of-trade for agricultural exports of *animal & animal products* categories such as fish products. With the GEL liberalization (scenario 4), Cambodia's welfare increases by a further 0.44 percent from the baseline or by 0.51 percent of GDP. If Cambodia extends its AFTA concession on an MFN basis, the total EV gain increases substantially, by 73.9 billion from the baseline (scenario 5).

This corresponds to 0.61 percent of real expenditure or 0.69 percent of GDP. The significant welfare gain is partly because the nondiscriminatory liberalization unwinds the costly trade diversion implicit in discriminatory arrangements, and partly because the move to a lower and more uniform tariff structure tends to eliminate the distortions resulting from differences in protection rates between commodities.

The decomposition of welfare changes in Table 4.10 demonstrates that the gains of AFTA arise primarily from the improvement in the terms-of-trade. On the import side, the welfare gains from additional trade creation are offset by the costs of trade diversion toward more costly within-region suppliers. The second-best welfare impacts approximated by the increase in export tax collections are likely to be minimal given the initial low level of export tax revenues in Cambodia.

Revenue Implications

While the trade liberalization experiments considered above increase economic efficiency, they reduce the tariff revenues on which Cambodia is heavily dependent. The effect on revenues resulting from the IL liberalization is minimal. However, the import tax revenues decline by 10.7 percent following adoption of the accession package (TEL and SL liberalization). Cambodia excluded some goods that are important sources of tariff revenues, such as oil products and beer, from the initial trade liberalization package. While this approach helps preserve revenues in the short term, it creates strong incentives to stimulate inefficient domestic production of these goods, and hence to reduce tariff revenue collections over the medium term (Hood, 1998). The GEL scenario shows that liberalization of the high-tariff items currently in the GEL, especially oil products (HS2710), leads to a reduction of 48 percent in tariff revenues from the baseline. Finally, the overall result on non-discriminatory liberalization reveals a striking trade-off between welfare gains and losses in tariff revenues. While the welfare gain is greatest with MFN liberalization, there is a loss of tariff revenues equal to 70.3 percent of initial revenues from retained imports.

The introduction of the Value Added Tax (VAT) in January 1999 means that both domestic production and imports of these goods will continue to generate some revenues even when tariff rates are reduced. In addition, the VAT system provides a mechanism to limit the scope for *ad hoc* tax and duty exemptions, which in turn increases substantially its revenue-generating

potential.[41] If revenues from the VAT should prove to be insufficient, then an alternative to excluding the high revenue "luxury" tariff categories from trade liberalization packages would be to replace the customs duties on some of these items with excise taxes covering both imports and domestic production. Since a large portion of Cambodia's tariff revenues is collected from excisable goods, this implies that there is a superior strategy available to compensate for the revenue loss involved in replacing the import tariff. Since excise duties are uniformly applied on excisable goods regardless of origin (import or domestic), revenue would be increased if excise duties were applied at the current tariff rates.

The implications of moving to an excise tax would depend upon the extent to which domestic industries have already developed. In industries such as the *processed foods* sector, there is a domestic production base developing in a relatively protected import-substituting environment (e.g. soft drinks, beer, cigarettes) which would provide a potentially important revenue base with low administrative costs. For other products, such as petroleum products, the current tariff is effectively the same as a consumption tax. In these cases, changing to a consumption tax would merely preserve existing revenues, but would create no adjustment problems, and would remove the incentive to set up domestic processing plants unless these were competitive at world prices.

4.4 Conclusions

This study examines the pattern of Cambodia's trade and protection regimes, and those of its ASEAN partners, as a basis for assessing the implications of AFTA accession. Cambodia sources about 38 percent of its imports from ASEAN, and 41 percent[42] of its exports are directed to ASEAN markets. This pattern of trade implies that Cambodia's static gains from participating in AFTA might be limited, since Cambodia can expect to gain relatively little from its improved access to ASEAN markets following entry into AFTA.

We develop a simple quantitative model of the Cambodian economy to help assess the implications of AFTA entry for Cambodia. The model has relatively limited data requirements, but allows us to capture the implications of trade creation, trade diversion, and market access gains that give rise to terms-of-trade improvements. We then assess the consequences of an accession package in which Cambodia lowers all of its barriers against ASEAN imports to 5.0 percent. On the import side, this AFTA liberalization package generates significant gains from trade creation, but these are more than offset by losses from trade diversion, as imports are diverted from lower cost world-market suppliers to ASEAN suppliers. This trade diversion also results in a significant net loss of tariff revenues. There are gains on the export side, where Cambodia gains improved access and higher prices in its partner markets. Overall, the static welfare gains are relatively small, at 29 billion riel per year. Perhaps the greatest benefit arises from an increase in exports of almost 3 percent, which helps Cambodia increase its integration with the world economy, and hence its scope to achieve sustained higher growth rates.

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[41] For instance, duties on raw materials for export enterprises, which were imported duty-free under the previous system, are now refundable only when the finished goods are exported. The implementation of the VAT faced strong resistance from the garment industries. Some leakage of raw materials into the domestic market is difficult to avoid.

[42] 12.5 percent of exports if the banknotes are excluded.

Using the AFTA liberalization package as a base for broader liberalization increases the gains from trade creation while reducing the losses from trade diversion. If imports from all sources are liberalized in line with imports from ASEAN, the overall gains more than double. The dynamic gains can also be expected to increase dramatically. Clearly, these results suggest that there is a strong case for using the AFTA liberalization as an initial step on the road to a broader liberalization package.

Both types of liberalization cause reductions in tariff revenues, with the nondiscriminatory liberalization package reducing overall revenues from retained imports by over 70 percent, despite a significant increase in import volumes. Clearly, replacing these revenues will be an important issue, even despite the recent introduction of a Value Added Tax (VAT). If revenues from the relatively small number of highly taxed commodities are needed, there is a strong case for moving to an excise tax regime, rather than the current policy of excluding them from the liberalization program.

Table 4.11 Sectoral Results of AFTA (Sensitive List Liberalization) without Implicit Export Subsidy Cut (Scenario 3)

	HS	Description	Imports (%)			Exports (%)			Equivalent Variation (mil. Riels)					Import Tax		Export Tax	
			Total	ASEAN	ROW	Total	ASEAN	ROW	Total EV	Trade Creation	Trade Diversion	Terms-of-trade	Export Tax	Before	After	Before	After
1	1-5	Animals & animals products	3.0	13.8	-5.6	5.5	30.3	-4.3	564	97	-146	577	36	994	815	655	707
2	6-14	Vegetable products	-0.3	5.3	-3.1	1.7	5.3	-0.7	-27	85	-143	31	0	1688	1484	0	0
3	15	Animal and vegetable oils	1.0	1.2	-4.4	0.5	0.5	0.0	8	9	-1	0	0	837	609	0	0
4	16-24	Processed foods, drinks & tobacco	2.5	11.0	-5.6	8.5	9.8	-6.9	6202	2207	-1560	5555	0	41083	33283	0	0
5	25-27	Oil and minerals products	-0.4	-0.4	-3.0	0.5	0.5	0.5	-640	-637	-4	0	0	138289	131459	0	0
6	28-38	Chemical products	-0.7	2.5	-2.7	1.8	2.6	-0.8	-53	156	-214	5	0	8579	7424	0	0
7.1	39-40	Plastic & rubber products	3.1	14.1	-6.0	1.6	44.4	-0.6	31	488	-460	3	0	4134	3164	0	0
7.2		Rubber	-1.0	3.5	-2.5	3.2	3.9	-2.2	1298	2	-4	1300	0	12	11	0	0
8	41-43	Skins & furs and their products	0.5	27.1	-3.4	0.5	0.5	0.5	-36	36	-72	0	0	348	326	0	0
9	44-46	Wood	27.0	55.4	-22.6	4.1	43.7	-3.0	7293	110	-48	7131	100	183	81	2417	2562
10	47-49	Wood products & paper	-0.8	3.2	-2.6	0.5	0.5	0.5	-87	98	-186	1	0	1537	1374	0	0
11.1	50-60	Textiles	5.6	60.3	-8.2	3.1	9.3	-2.1	5588	16696	-11241	134	0	1851	1398	0	0
11.2	61-63	Apparel	3.9	62.6	-6.8	2.3	301.5	-1.3	9331	2443	-1788	8675	0	6385	5165	0	0
12	64-67	Shoes, hats, umbrellas, etc.	0.2	12.2	-3.2	0.6	375.2	0.4	-128	96	-239	14	0	472	443	0	0
13	68-70	Stone, ceramic & glass products	0.6	3.2	-3.9	6.3	124.2	-5.0	15	77	-78	17	0	4186	3354	0	0
14	71	Jewelry & precious metal products	-1.7	0.0	-1.7	0.0	0.0	0.0	-1	0	-1	0	0	55	54	0	0
15	72-83	Base metals and their products	0.6	10.4	-3.9	5.0	18.2	-3.8	58	510	-471	18	0	3283	2683	0	0
16	84-85	Electrical and Mechanical machines	2.3	24.5	-5.4	6.4	15.2	-5.1	618	3813	-3604	409	0	19164	15518	0	0
17	86-89	Transport equipment	1.8	31.2	-4.5	2.0	40.3	-1.0	-874	2259	-3187	54	0	48983	43539	0	0
18	90-92	Photographic, precision instruments	-0.8	9.4	-2.6	1.4	5.4	-0.5	-56	48	-114	10	0	838	779	0	0
19	93	Arms & munitions	-1.7	-1.7	-1.7	0.0	0.0	0.0	-1	0	-1	0	0	8	7	0	0
20	94-96	Furniture & Assorted products	2.4	31.4	-5.7	2.3	13.5	-1.3	242	588	-357	11	0	3042	2424	0	0
21	97-98	Objets d'art	-1.7	0.0	-1.7	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0
			2.0	13.9	-5.4	2.5	8.5	-1.8	29347	29181	-23916	23946	136	285950	255396	3072	3269

Source: Author's simulation results.

Table 4.12 Sectoral Results of Non-Discriminatory Liberalization (Scenario 5)

	HS	Description	Imports (%)			Exports (%)			Equivalent Variation (mil. Riels)					Import Tax		Export Tax	
			Total	ASEAN	ROW	Total	ASEAN	ROW	Total EV	Trade Creation	Trade Diversion	Terms-of-trade	Export Tax	Before	After	Before	After
1	1-5	Animals & animals products	9.3	-11.2	25.4	12.4	38.8	2.0	1051	-72	443	598	82	994	283	655	754
2	6-14	Vegetable products	-4.6	-7.6	-3.2	8.4	12.2	5.8	-145	-118	-59	32	0	1688	894	0	0
3	15	Animal and vegetable oils	-7.3	-7.3	-7.4	7.1	7.1	0.0	-56	-54	-1	0	0	837	554	0	0
4	16-24	Processed foods, drinks & tobacco	4.2	2.4	6.0	15.6	17.0	-0.8	9697	1293	2664	5741	0	41083	13747	0	0
5	25-27	Oil and minerals products	15.5	15.6	-7.7	7.1	7.1	7.1	14923	14929	-6	0	0	138289	33433	0	0
6	28-38	Chemical products	-9.1	-7.6	-10.0	8.5	9.3	5.7	-1147	-403	-749	5	0	8579	6882	0	0
7.1	39-40	Plastic & rubber products	2.4	-4.0	7.8	8.2	53.9	6.0	372	-101	470	3	0	4134	1482	0	0
7.2		Rubber	-7.3	-7.1	-7.3	10.0	10.7	4.3	1332	-3	-10	1345	0	12	8	0	0
8	41-43	Skins & furs and their products	26.9	-16.2	33.2	7.1	7.1	7.1	375	-4	379	0	0	348	70	0	0
9	44-46	Wood	28.8	28.9	28.5	11.0	53.2	3.4	7738	60	35	7377	267	183	36	2417	2730
10	47-49	Wood products & paper	-8.0	-6.5	-8.7	7.1	7.1	7.1	-751	-196	-555	1	0	1537	1099	0	0
11.1	50-60	Textiles	10.3	28.4	5.7	9.9	16.4	4.4	13725	8111	5476	138	0	1851	509	0	0
11.2	61-63	Apparel	10.8	26.6	8.0	9.0	327.9	5.2	13124	1145	2956	9023	0	6385	1759	0	0
12	64-67	Shoes, hats, umbrellas, etc.	23.9	-24.8	37.5	7.2	406.5	7.0	1452	-78	1516	15	0	472	99	0	0
13	68-70	Stone, ceramic & glass products	-5.9	-7.4	-3.3	13.2	139.0	1.3	-177	-168	-27	17	0	4186	2437	0	0
14	71	Jewelry & precious metal products	-9.7	0.0	-9.7	0.0	0.0	0.0	7	0	7	0	0	55	39	0	0
15	72-83	Base metals and their products	-4.7	-2.1	-5.9	11.9	26.0	2.5	-525	-93	-452	19	0	3283	1746	0	0
16	84-85	Electrical and Mechanical machines	3.4	3.5	3.4	13.4	22.7	1.2	2651	627	1601	422	0	19164	6567	0	0
17	86-89	Transport equipment	16.2	0.1	19.7	8.7	49.5	5.6	9896	41	9798	56	0	48983	11772	0	0
18	90-92	Photographic, precision instruments	-2.2	-8.2	-1.2	8.1	12.4	6.1	-16	-31	5	10	0	838	377	0	0
19	93	Arms & munitions	35.2	-26.8	36.6	0.0	0.0	0.0	7	0	7	0	0	8	1	0	0
20	94-96	Furniture & Assorted products	1.8	17.1	-2.5	9.0	21.0	5.2	386	316	58	12	0	3042	1128	0	0
21	97-98	Objets d'art	-9.9	0.0	-9.9	7.1	7.1	7.1	0	0	0	0	0	0	0	0	0
			5.7	9.4	3.5	9.2	15.6	4.7	73918	25199	23556	24814	349	285950	84921	3072	3484

Source: Author's simulation results.

Table 4.13 Sectoral Results of AFTA (Sensitive List Liberalization) with Implicit Export Subsidy Cut in the Garment (Scenario 6)

	HS	Description	Imports (%)			Exports (%)			Equivalent Variation (mil. Riels)						Import Tax		Export Tax	
			Total	ASEAN	ROW	Total	ASEAN	ROW	Total EV	Trade Creation	Trade Diversion	Terms-of-trade	Export Tax	Export Subsidy	Before	After	Before	After
1	1-5	Animals & animals products	2.2	13.0	-6.2	7.7	33.0	-2.2	562	91	-164	584	51	0	994	809	655	722
2	6-14	Vegetable products	-1.0	4.5	-3.8	3.9	7.5	1.4	-70	73	-175	32	0	0	1688	1474	0	0
3	15	Animal and vegetable oils	0.3	0.5	-5.1	2.6	2.6	0.0	3	4	-1	0	0	0	837	605	0	0
4	16-24	Processed foods, drinks & tobacco	1.8	10.2	-6.3	10.8	12.1	-4.9	5918	2053	-1747	5612	0	0	41083	33053	0	0
5	25-27	Oil and minerals products	-1.1	-1.1	-3.7	2.6	2.6	2.6	-1754	-1749	-5	0	0	0	138289	130550	0	0
6	28-38	Chemical products	-1.5	1.7	-3.4	3.9	4.8	1.3	-147	117	-269	5	0	0	8579	7373	0	0
7.1	39-40	Plastic & rubber products	2.3	13.3	-6.7	3.7	47.5	1.5	-46	462	-511	3	0	0	4134	3142	0	0
7.2		Rubber	-1.7	2.8	-3.2	5.4	6.1	-0.1	1310	1	-5	1314	0	0	12	11	0	0
8	41-43	Skins & furs and their products	-0.2	26.2	-4.1	2.6	2.6	2.6	-51	35	-86	0	0	0	348	323	0	0
9	44-46	Wood	26.1	54.3	-23.2	6.3	46.8	-1.0	7419	108	-49	7206	154	0	183	81	2417	2616
10.1	47-49	Wood products & paper	-1.5	2.5	-3.3	2.6	2.6	2.6	-159	76	-236	1	0	0	1537	1365	0	0
11.1	50-60	Textiles	4.8	59.1	-8.9	5.3	11.6	0.0	4404	16407	-12138	135	0	0	1851	1388	0	0
11.2	61-63	Apparel	3.1	61.5	-7.5	-4.1	276.7	-7.4	15147	2404	-1963	8362	0	6344	6385	5129	0	0
12	64-67	Shoes, hats, umbrellas, etc.	-0.5	11.4	-3.8	2.7	385.4	2.5	-184	93	-291	14	0	0	472	440	0	0
13	68-70	Stone, ceramic & glass products	-0.2	2.5	-4.6	8.5	129.0	-3.0	-15	60	-92	17	0	0	4186	3331	0	0
14	71	Jewelry & precious metal products	-2.4	0.0	-2.4	0.0	0.0	0.0	-1	0	-1	0	0	0	55	54	0	0
15	72-83	Base metals and their products	-0.1	9.6	-4.6	7.2	20.8	-1.8	-61	473	-553	18	0	0	3283	2665	0	0
16	84-85	Electrical and Mechanical machines	1.6	23.6	-6.1	8.6	17.6	-3.1	40	3684	-4057	413	0	0	19164	15410	0	0
17	86-89	Transport equipment	1.0	30.3	-5.2	4.1	43.3	1.1	-1416	2194	-3666	55	0	0	48983	43238	0	0
18	90-92	Photographic, precision instruments	-1.5	8.6	-3.3	3.6	7.7	1.7	-90	45	-145	10	0	0	838	773	0	0
19	93	Arms & munitions	-2.4	-2.4	-2.4	0.0	0.0	0.0	-1	0	-1	0	0	0	8	7	0	0
20	94-96	Furniture & Assorted products	1.7	30.5	-6.4	4.5	15.9	0.8	183	572	-400	11	0	0	3042	2407	0	0
21	97-98	Objets d'art	-2.4	0.0	-2.4	2.6	2.6	2.6	0	0	0	0	0	0	0	0	0	0
			1.2	13.1	-6.1	1.2	10.4	-5.3	30990	27202	-26554	23793	205	6344	285950	253629	3072	3338

Source: Author's simulation results.

5 Vietnam's Trade and Industrial Policy at the Cross-roads

Since the introduction of the *doi moi* (renovation) policies in 1986, Vietnam has achieved substantial progress in macroeconomic management and liberalization of its trade and investment policies. Vietnam's recent accessions to ASEAN and APEC, the bilateral agreement for MFN access to the United States, and potentially the accession process to WTO provide substantial opportunities for further liberalization of its economic system. While integration into the international trading system is clearly beneficial for Vietnam's economic development, the effect of liberalization on sensitive domestic industries remains a critical issue among Vietnamese policy makers. Information on the consequences of further liberalization is clearly needed as a basis for decisions on deepening the current reforms.

Important insights into the implications of liberalization can be obtained using relatively straightforward analytical tools based on theory and the available data. However, a comprehensive evaluation of the implications for trade, industrial structure and output requires a more sophisticated analytical framework. Inevitably, the implications of reforms such as AFTA membership and further liberalization will depend upon the structure of Vietnam's economy and the nature of its economic links with its AFTA partners. Section 5.1 therefore examines Vietnam's trade regime including the direction and composition of trade, and protection measures. Section 5.2 demonstrates a multi-region and multi-sector Computable General Equilibrium (CGE) model to evaluate the impacts of alternative policies by both Vietnam and its main trading partners. Section 5.3 presents some brief conclusions.

5.1 Vietnam's Trade Regime

5.1.1 Direction and Composition of Trade

With its 75 million people, Vietnam is the second most populous ASEAN member country after Indonesia. However, because of its low income level per capita, its shares of GDP and trade in ASEAN remain relatively small, at 3.7 percent and 2.9 percent respectively. Vietnam was one of the fastest growing economies during the period 1990 to 1997, with an annual average growth rate of 8.6 percent. However, this growth slowed in 1998 and 1999 to about 4 percent. In 1997, imports plus exports relative to GDP had reached 100.4 percent of GDP, a relatively high figure for a populous country. Although Vietnam's economy is predominantly agricultural, Vietnam's arable land per capita is relatively low at 0.08 hectares per capita. Vietnam is accumulating human capital relatively quickly through its secondary school enrollment rate of 47 percent.

Direction of Trade

Figure 5.1 and figure 5.2 present Vietnam's imports by source and exports by destination (General Statistical Office, 1997).

Figure 5.1 The Sources of Vietnam's Imports in 1996

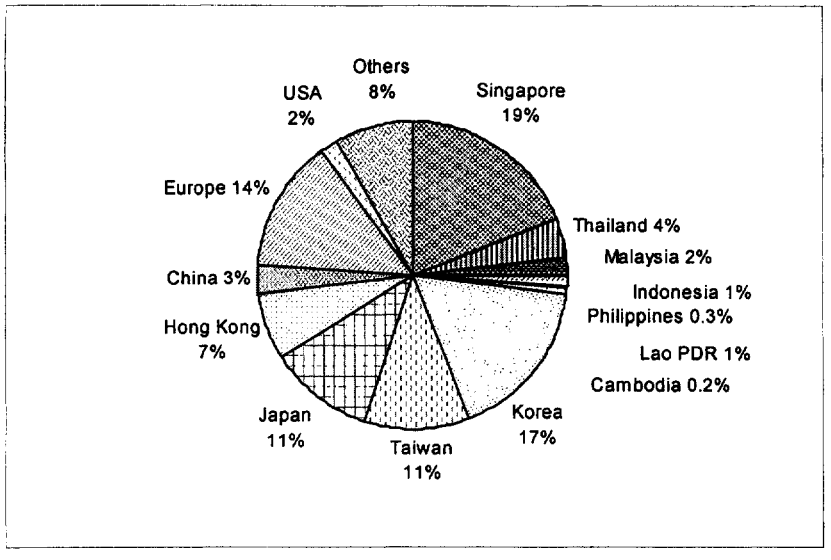
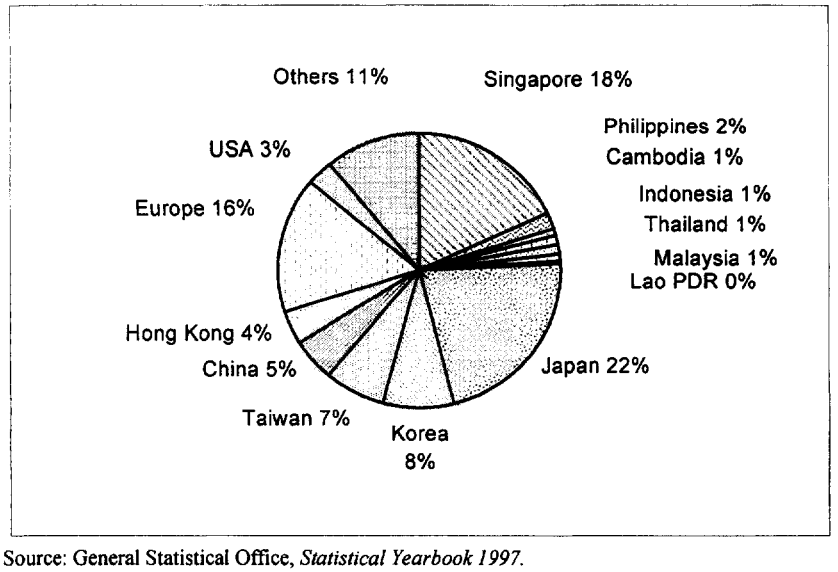


Figure 5.2 The Destination of Vietnam's Exports in 1996



Source: General Statistical Office, *Statistical Yearbook 1997.*

Figure 5.1 shows that 27 percent of Vietnam's imports were sourced from ASEAN in 1996. Singapore was the leading supplier, accounting for 19 percent of Vietnam's total imports followed by Thailand, Malaysia, Indonesia, the Philippines, the Lao PDR and Cambodia. Figure 5.1 also highlights the importance of the other APEC countries as sources of Vietnam's imports. In particular, imports from the other Asian countries, Korea (17 percent), Taiwan (China) (11 percent), and Japan (11 percent) were significant, whereas imports from the United States were relatively small at 2 percent. APEC countries altogether represent 80 percent of Vietnam's imports

(GTAP 4 database).[43] Of the 20 percent of imports sourced from non-APEC countries, 14 percent were obtained from the European Union.

Figure 5.2 shows that only 24 percent of Vietnam's exports were shipped to ASEAN countries. Singapore took 18 percent of Vietnam's exports followed by the Philippines, Thailand, Cambodia, Malaysia, Indonesia, and the Lao PDR. Vietnam's exports to the APEC countries are important accounting for 74 percent of Vietnam's exports. Japan alone received 22 percent of Vietnam's exports in 1996. Besides the APEC countries, the European countries were important destinations representing 16 percent of Vietnam's exports.

Table 5.1 presents Vietnam's imports to and exports from ASEAN member countries for the years 1994-1996. Vietnam's imports from and exports to ASEAN increased by 77 percent and 99 percent respectively, primarily through increased trade with Singapore. During the same period, the share of ASEAN remained relatively steady because of rapid growth in trade with other countries.

Table 5.1. Vietnam's Imports and Exports from and to ASEAN 1994-1996

	IMPORTS			EXPORTS		
	1994	1995	1996	1994	1995	1996
Cambodia	18	24	18	77	95	99
Indonesia	116	190	149	35	54	46
Lao PDR	103	84	68	21	21	25
Malaysia	66	191	200	65	111	78
Philippines	15	25	29	4	42	132
Singapore	1146	1425	2033	594	690	1290
Thailand	226	440	495	98	101	107
Total ASEAN Trade	1690	2378	2991	893	1112	1777
Total Trade	5826	8155	11144	4054	5449	7256
ASEAN Share (%)	29.0	29.2	26.8	22.0	20.4	24.4

In millions of U.S.dollars.
Source: General Statistical Office, *Statistical Yearbook 1997*

The Composition of Trade: ASEAN vs. Non-ASEAN

Figure 5.3 and Figure 5.4 show the composition of Vietnam's imports from and exports to ASEAN and non-ASEAN countries.[44]

[43] The members of APEC are Australia; Brunei Darussalam; Canada; Chile; China; Hong Kong, China; Indonesia; Japan, Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru, the Philippines; Russia, Singapore; Taiwan (China); Thailand; the United States, and Vietnam.

[44] The model database was aggregated from the original 50 sectors to thirteen sectors designed to provide a reasonable representation of Vietnam's trade patterns: agriculture and forestry (AGR), basic manufacturing (BMF), beverages and tobacco products (BTP), clothing (CLO), chemical, rubber, plastic products (CRP), coal, oil, gas (COG), light manufacturing (LMF), electronics and machinery (MCE), processed agricultural commodities (PAG), petroleum and coal products (PCP), textiles (TEX), transport equipment (TRP), and others (OTH). Likewise, we combine the 45 Global Trade Analysis Project (GTAP) regions into 12 aggregates: Indonesia (IDN), Malaysia (MYS), the Philippines (PHL), Singapore (SGP), Thailand (THA), Vietnam (VNM), Japan (JPN), the United State (USA), EU15 (EU15), Asian Newly Industrialized countries excluding Singapore (NIES), China (CHN), and the rest of the world (ROW). Annex 5.A presents the description of the aggregation.

Figure 5.3 Vietnam's Imports ASEAN vs. Non-ASEAN

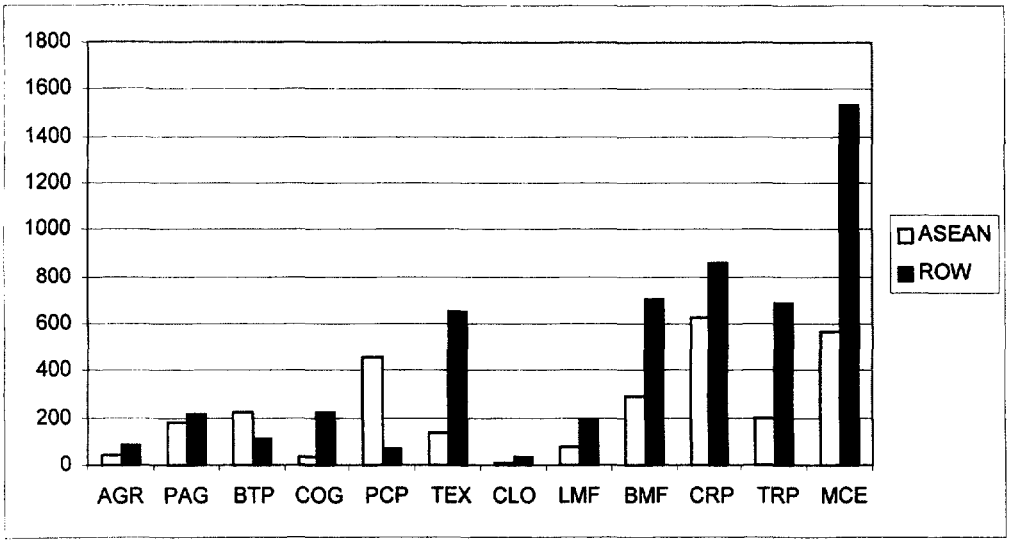
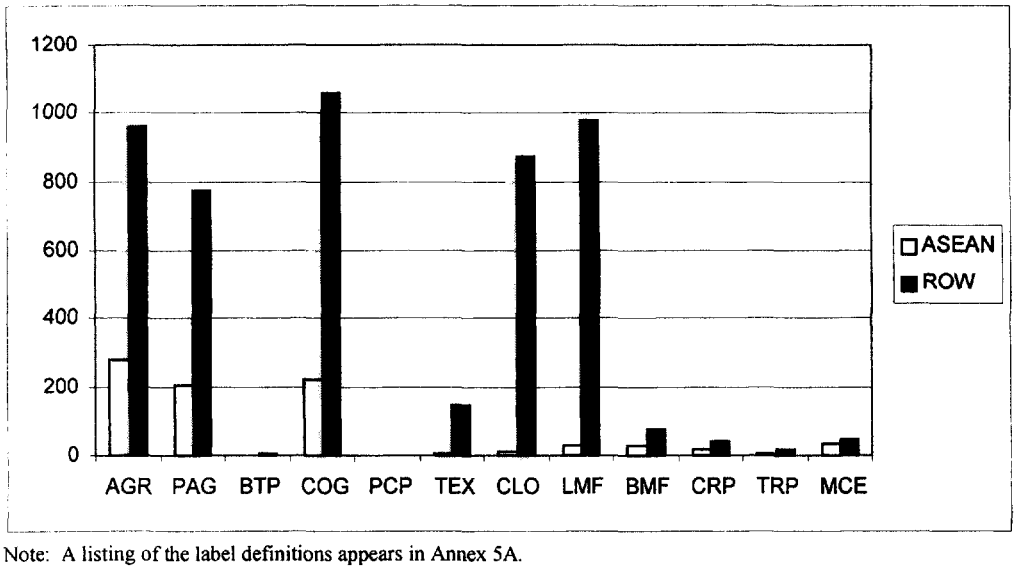


Figure 5.4 Vietnam's Exports ASEAN vs. non-ASEAN



Note: A listing of the label definitions appears in Annex 5A.
Source: GTAP4 Database

Figure 5.3 suggests that Vietnam's leading imports consist of electronics and machinery equipment (MCE) followed by chemical and rubber products (CRP), and basic manufacturing (BMF) products. A large percentage of Vietnam's imports in these categories are likely to be intermediate inputs and capital goods. The leading imports from ASEAN are chemical and rubber products (CRP), mainly fertilizer, resins & plastic materials from Singapore and Indonesia. Singapore supplies about 78 percent of Vietnam's refined petroleum imports (PCP).

Figure 5.4 demonstrates a sharp difference in the composition of exports between ASEAN and non-ASEAN countries. Three categories alone, agriculture and forestry (AGR), processed agricultural commodities (PAG) and coal, oil and gas (COL), dominate Vietnam's exports to ASEAN whereas exports of these commodities are also significant for non-ASEAN destinations.

In contrast, textiles (TEX), clothing (CLO), and light manufacturing (LMF) are shipped mainly to non-ASEAN countries.

5.1.2 Vietnam's Industrial and Trade Policies

Although Vietnam has liberalized substantially its trade and investment regime since the latter half of the 1980s, Vietnam's trade regime reflects the legacy of its history as a state dominated centrally planned economy. The state sector still enjoys various forms of privileges including access to land, capital, bail-out facilities, and quota allocations. Import substitution linked to state control and protection remains an influential economic idea (McCarty, 1999). Export industries are promoted by providing subsidies to countervail the high relative costs of intermediate products. Because of the importance of this issue in the Vietnamese context, we consider it in some detail.

Vietnam's Industrialization/Modernization Policy

With the objective of turning Vietnam into an industrial country by 2020, Vietnam's *industrialization/modernization* policy appears to be emphasizing the creation of a diversified industrial structure. To reach that target, much of attention has been paid to develop the industrial base through a combination of export orientation and import substitution. As a part of this direction, Vietnam appears to be targeting a set of capital-intensive and so-called "strategic" industries and to be using trade and investment policies as instruments to promote these industries.

Some economists have argued that promotion of "strategic" industries or industry-targeting strategies contributed to the success of "late-industrializing" countries such as Japan, Korea, and Taiwan (China) (Amsden (1989); Wade (1990)). The considerations that are argued to provide grounds for selective state intervention include economies of scale, externalities, and strategic shift of comparative advantage. Wade, for example, argues that liberal trade policies and reallocation according to static comparative advantage offer only a once-for all benefit, but do not specify a causal mechanism linking realization of comparative advantage to higher growth. Wade argues that, unlike unalterable natural endowments, government assistance can create new "acquired" advantages, some of which are industry-specific. The short run allocative costs of establishing internationally competitive industries may be outweighed by the longer run benefits of productivity change in the promoted sectors (Wade, 1990). A key question is whether policy makers can identify the scale economies and externalities that provide the rationale for this approach.

Other economists warn of the dangers of protectionism that may be introduced under the rhetoric of pursuing "competitiveness." For instance, Corden argues that, while there will always be sectoral competitiveness problems, but they will not represent a national loss of competitiveness. One of the most fundamental insights of economics, the theory of comparative advantage, shows that all countries have a comparative advantage in something. Policies of protection will necessarily reduce both imports and exports below free trade levels, reducing the competitiveness of export industries through both direct impacts on the cost of production and through real exchange rate appreciation that increases the costs of exporters. Corden, for example, stresses that sectoral protection only benefits one industry at the expense of others, with a net national loss through forgoing the gains from trade (Corden, 1994). The policy implication is to resist the usual pressures for sectoral protection, and to favor policies that raise national productivity (such as

improvements in education and training and the introduction of new technology), which would moderate adverse sectoral effects.

The provision of protection to favored industries can be expected to increase output levels in these industries, by diverting scarce skilled workers from other industries. If the gains from "learning by doing" in these industries were high enough, then an import substitution policy might increase growth rates even while foregoing some of the gains from comparative advantage. The problem may lie with the choice of industries, but this appears to be a problem difficult to avoid. The available studies of openness and growth suggest that protection policies, as actually applied, have substantially reduced economic growth rates in most countries (see, for example, Sachs and Warner 1995; Dollar 1992).

The research results on openness and growth suggest the use of an approach to development in which relatively open economic policies are used to stimulate expansion of the industries in which Vietnam currently has a comparative advantage. The relatively higher rates of growth associated with economic growth would then allow the accumulation of capital and the development of the skills needed for modern industrial development. The experience of the high performing East Asian countries has been clear on this point. All of these countries have had very high savings rates and have rapidly upgraded their educational systems to increase their endowments of skilled labor (World Bank, 1993). The increases in the stocks of these factors have been important forces leading to the (relative) decline of the traditional agricultural sector and the process of industrialization (Martin and Warr 1992; Gehlhar, Hertel and Martin 1994).

Rapid economic development involves many changes both in the structure of the economy, and in economic policies. There are many areas in which policy intervention will be required if economic agents are to have the right incentives. The needed interventions will involve establishing a legal framework, and policies that rectify market failures, such as those affecting investment in human capital, or those involving externalities and public goods. As Johnson (1955) has pointed out, tariff protection is a very poor instrument for dealing with any of the problems, such as stimulating infant industries or dealing with externalities, that are usually used to justify it. Policies that directly address the problems, such as the provision of needed public goods or assistance for education and training, are likely to be much better than trade barriers. Given the enormous challenges of development policy, particularly as highlighted by the East Asian financial crisis, there seems to be a strong case for governments to focus on the best available policies for dealing with the challenges before them.

Foreign Direct Investment (FDI)

Since Vietnam is capital scarce and needs to upgrade its technology, foreign direct investment (FDI) has a potentially very important role in promoting Vietnam's economic development. From the promulgation of the Foreign Investment Law in 1988, total FDI commitments in the period 1988 to 1998 (including domestic capital contribution) were estimated at about US$33 billion, and

total disbursements at US$10 billion, of which the bulk was foreign equity contributions (57 percent) (IMF, 1999c).[45]

Puga and Venables (1998) demonstrate that either trade liberalization or import substitution policies may be used by low-wage economies to attract industry, but these two policies work through very different mechanisms. If import barriers are raised, industries that seek higher economic profits are attracted, and this in turn leads to import substituting industrialization. Unilateral trade liberalization can also be successful in attracting industry because the availability of low cost intermediate goods and real exchange rate depreciation[46] allow foreign firms to source inputs from the most efficient suppliers. Although both policies may be superficially "successful" in attracting industry, they generate different welfare outcomes. While the attraction of investment in export-oriented industries undoubtedly makes the country better off, increased investment in import-substituting industries may actually reduce welfare.

Recent studies by CIE (1998, July) and McCarty (1998) reveal that foreign investment in Vietnam is being directed toward sectors with relatively high rates of protection.[47] It has been observed that the emphasis of policy seems to be on building up joint ventures between state firms and foreign investors so that physical capital levels of output grow rapidly, rather than encouraging the growth of competitive firms. Most joint ventures were with state enterprises rather than with the domestic private sector. Dollar (1998) warns that powerful alliances among line ministries, large state enterprises, and foreign investors, can create an environment that hampers the development of domestic private enterprises. Protection of powerful up-stream industries, whom the government is often persuaded to protect, is particularly problematic since this impedes the growth of downstream manufacturers (Flatters, 1998ab).[48]

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[45] New commitments fell from $8.5 billion in 1996 to $4.0 billion in 1997 and $1.8 billion in 1998 (World Bank, 1998b).

[46] Trade liberalization reduces the prices of the nontraded goods purchased by exporters as well as their prices of intermediate inputs.

[47] For instance, McCarty (1998) observes that among the five highest sector recipients of FDI (in the traded-goods sector) -- cement, fuels, vehicles, electrical machinery, and beverages, all the sectors except fuels -- are producing import-substituting goods.

[48] An example of plastic product (downstream) and petrochemical (upstream) industries is relevant here. Petrochemical industries were initiated and developed with the government intervention in many Asian countries including Japan, Taiwan (China), Korea followed by some ASEAN countries. However, Flatters (1998a) points out the danger of similar policies for Vietnam. The plastic products sector has been one of the most successful industries in Vietnam growing at an average rate of almost 30 percent since 1990. Plastics are basic input into a wide range of final consumer goods as well as an essential component in various industrial products (e.g. electronics, electrical appliances and vehicle parts). A crucial factor in the success of the plastic products industry in Vietnam has been the free availability of competitively priced raw materials. Imports of plastic raw materials (PVC resin, polyethylene (PE), polypropylene (PP), polystyrene (PS)) were free of import duties and other non-tariff barriers. Recently, the joint venture project between Japan's Mitsui Corporation and the state-owned Viet Nam National Plastics Corporation (Vinaplast) to manufacture PVC petitioned to impose 25-40 percent import duty on all PVC resin imports. The government agreed to grant an import tariff of 3 percent and a further import surcharge of 5 percent (Flatters, 1998b).

Nominal and Effective Rates of Protection

Table 5.2 shows a summary of Vietnam's tariff protection. The first two columns show the nominal rate of protection (NRP) whereas the second two show the effective rate of protection (ERP). The simple average tariff rate is 15.6 percent and the trade-weighted average is 19.0 percent. There is a general tendency for Vietnam's tariff structure to be relatively low for capital goods and raw materials, and higher for finished goods. This pattern of protection increases the returns to value-adding factors in the final goods industries. Even quite moderate tariffs on final goods can lead to sharp increases in the returns to value added in a particular sector if intermediate inputs are a large share of total costs. Imports of most basic industrial raw materials are relatively free of import restrictions since Vietnam does not yet have significant upstream steel or plastics industries (Flatters, 1998a). For many goods which are not produced in Vietnam, the tariff rates are virtually zero. This confers a great advantage on domestic users of these products.

An indication of the total impact of protection can be obtained using the Effective Rate of Protection (ERP). The ERP differs from the NRP by taking into account the trade barriers that are imposed on the intermediate inputs used in the production of goods.[49] Protection granted to final goods increases returns to value adding factors in a sector. By contrast, taxes on intermediate inputs reduce the returns to value adding factors. Protection has different implications for import substituting and export oriented activities. Higher protection on outputs raises the domestic prices for import competing goods and increases the returns involved in producing them. Exporting activities have to face world prices for their sales and so do not benefit from protection on their output. They can only be harmed by protection to other sectors. The ERP measures provided in this section capture the direct adverse impacts of protection on these firms. There is an additional

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[49] The effective rate of protection (ERP) is defined as the percentage change in producers' value-added, as a result of taxes on trade, over the level of value-added that would have prevailed in the absence of those taxes. For import substituting industries, the formula for calculating the ERP is

$$ERP_m = (VA_{mj} - VA_j^*)/VA_j^*$$

where VA_{mj} is industry j's value added at domestic prices and VA_j^* is value added at world prices. VA_{mj} and VA_j^* are computed as

$$VA_{mj} = VO_j - \sum INT_{ij}$$
$$VA_j^* = VO_j/(1 + t_j) - \sum INT_{ij}/(1+t_i)$$

where VO_j is the value of output of industry j, INT_{ij} is the use of intermediate input i by industry j, and t_j is the nominal tariff rate imposed on industry j. The ERP for export production can be

$$ERP_x=(VA_{xj} - VA_j^*)/VA_j^*$$

where

$$VA_{xj} = VO_j/(1 + t_j) - \sum INT_{ij}$$
$$VA_j^* = VO_j/(1 + t_j) - \sum INT_{ij}/(1+t_i)$$

Value added at domestic prices for export production (VA_{xj}) differs from that for import substitution (VA_{mj}) since exporters face world prices for their sales.

adverse impact that arises from the increases in the prices of nontraded goods—the real exchange rate appreciation effect of protection.

The ERPs for Vietnamese industries have been calculated using input-output table information from the GTAP Version 4 database. Table 5.3 reveals very high effective rates of assistance for import substitution activities in industries such as apparel, motor vehicles and parts, and textiles.

The fourth column of Table 5.3 shows the effective rate of protection applying to a firm that produces for the export market, but is unable to benefit from exemptions of import duties on imported inputs. As expected, the effect of the tariff regime on such a firm is negative, because of the cost-increasing effects of higher prices for intermediate goods. It is worth noting that the negative effects for exporters are the largest for such industries as apparel and motor vehicles where the prices of intermediate inputs, as well as outputs, are raised by protection. This is because the government tends to use tariff and other protective measures on intermediate goods to achieve localization objectives (see Box 5.1).[50] The resulting increases in the costs of other firms[51] tend to lead other import-competing industries to lobby for even higher levels of nominal protection, and diminish the competitiveness of export industries.

Two cautions should be borne in mind in interpreting these protection figures. First, these figures do not include the protective effects of Non Tariff Barriers (NTBs). A set of important industries, including cement, steel, sugar and paper industries, is protected by quantitative restrictions rather than tariffs. Second, the ERP for export production does not include the firms who benefit from duty drawback systems. In fact, Vietnam has applied a number of measures such as duty drawback systems and export-processing zones to compensate exporters for some of the costs which Vietnam's own import barriers impose upon them. However, these measures never offset fully the negative effects of protection (Flatters, 1998b; CIE, 1998; Herrou-Aragon, 1999[52]).

In addition, they may hinder the development of integrated system of manufacture of exports and products of associated supporting industries, because they discriminate between imports of items for export production and intermediate goods used in the production of goods that are not directly exported (Flatters, 1998b). For instance, duty draw back systems cannot normally fully compensate "indirect" exporters who produce inputs for exporters (e.g. domestic textile producers for garments, plastics producer for electronics).[53] A system of high tariffs and deep exemptions,

[50] For production and assembly of electronic appliances, the localization ratio is at least 20 percent for the first 2 years and must be increased annually; for production and assembly of automobiles, the required localization ratio is 5 percent after the first 5 years and must be increased to reach 30 percent after the first 10 years; for motorcycles and spare parts, the required localization ratio is 5-10 percent after the first 2 years and must be increased to 60 percent after the first 5 years (WTO, 1998).

[51] Both as a direct consequence of higher prices of traded goods, and higher prices of nontraded goods (the real exchange rate appreciation effect of higher protection).

[52] Herrou-Aragon (1999) investigates the case of the Dominican Republic where an escalating import tariff rate structure aimed at protecting import-substitution activities coexists with successful export incentives. Using a factor-specific general equilibrium model, he found that the overall impact of protection policies on output of exportable activities could still be substantial. The main reason is that protection results in increases in prices of non-traded goods and in nominal wages, so-called real exchange rate appreciation, reducing the competitiveness of exporters.

[53] In Vietnam's garment industry, high import tariffs for protecting import-substitution activities coexist with a relatively successful duty-drawback system for exports. A significant part of the imported material for the garment

such as is used in Vietnam, tends to stimulate exports from assembly-type operations, rather than from sectors with strong forward and backward linkages to other domestic sectors. Under these circumstances, further liberalization can be expected to stimulate the development of exports with a higher proportion of domestic content and value-added.

Non-Tariff Measures (NTMs)

A complex set of non-tariff measures is used in Vietnam. Quantitative restrictions are used to "regulate supply and demand" and to protect the domestic production of "potential" and "infant" industries (WTO, 1998). The regulations on import quota and the list of prohibited imports/exports appear to change from time to time. Products subject to import licensing restrictions fall into three main groups: goods subject to import licensing and quotas under Decree 57 and Decision 254; goods subject to specialized management by line ministries; and goods banned from imports. These import licensing restrictions currently cover approximately 40 percent of imports (World Bank, 1999c). According to Decree 57, ten types of imports are subject to licensing, including petroleum and oil, fertilizer, motor cycles, cars of 15 seats or less, steel and iron, cement, sugar, paper, alcohol, and construction glass. Imports of some of these products are occasionally banned (IMF, 1999c). Rice and garment exports are subject to export quotas. The export prohibitions for wood of various kinds and raw rattan are applied, in principle, for environmental reasons. Since 1998, rice export quotas have been allocated to private firms. Also, 20 percent of garment export quotas to the EU were auctioned for the first time in January 1999 (World Bank, 1999c).

With the issuance of Decree 57, the trading rights of registered firms in Vietnam were liberalized in July 1998, removing the skill and working capital requirements previously required to register as a trading enterprise. Under Decree 57, enterprises with business registration are no longer required to obtain a license to export or import any product that is listed in their business registration license. While exporters were given rights to export products not listed in their business licenses, importers are restricted to importing only items registered in their business licenses.

Vietnam's customs valuation is based on the price written on the contract (contract price). For 20 groups of commodities, Vietnam defines minimum prices for import duty valuation (Ministry of Finance, 1998).[54] The prices for G7 countries and non-G7 countries are differentiated, and it

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industry is brought in through international subcontracting agreements where foreign partners generally provide most of the necessary materials as well as designing and marketing functions. This is known as CMT (cut, make and trim) (Technical Group, Institute of Economics (Vietnam) – IDRC (Canada), 1999). Since most of the production is targeted at export markets, producers have duty-free access to raw material imports. In contrast, local textile manufactures must bear the costs of import barriers on their inputs. The discriminatory nature of the duty drawback system hampers integrating local manufactures of textiles into export production of garments. Currently, the industrial linkage of Vietnamese domestic textile and garment sector, between up-stream (fiber production), mid-stream (fabric production and dyeing) and down-stream sectors (garment manufacturing) remains very weak. This situation is less of a problem than one where industrial linkages are forced by policies such as requirements to use local inputs. However, stronger linkages within a more open textile and garment sector could lead to a more efficient industry.

[54] These include milk; vegetable oils; food seasoning (monosodium glutamate); sugar and confectionery; beverages; cement; paints; shampoos and soaps; plastics; tires and tubes; papers and boards; sanitary ware and ceramic tiles; construction glass; iron and steel; gas cookers; electric appliances and components; accumulators and batteries; automobiles; motorcycles and parts; and furniture of various kinds (Ministry of Finance, 1998).

appears that effective tariff rates are frequently higher for commodities made in G7 countries. While there are undoubtedly serious problems of understatement in customs values, there is a real risk that such customs valuation rules can lead to large distortions and introduce substantial barriers to trade. For this reason, the GATT rules on Customs valuation involve a strong bias towards the use of invoice prices (WTO, 1995). While there are many difficulties involved in implementing these rules in low-income countries such as Vietnam (Finger and Schuler, 1999), it seems likely that the distortions implicit in the current minimum price rules used in Vietnam could be reduced by a system of valuation that attempted to minimize the distortions involved in valuing goods for customs purposes.

Price control measures include maximum import pricing and minimum export pricing. The maximum import prices are imposed on high-volume imports of certain products such as fertilizer, petroleum, iron and steel, cement, newsprint and writing paper, and certain machinery and equipment items. Minimum export prices apply to rice and crude oil (WTO, 1998). It is difficult to determine the extent to which these policies restrict trade. If effective, they are likely to introduce serious distortions and, even if currently ineffective, they introduce a serious problem of nontransparency into the trade regime.

Formal access to foreign exchange is still subject to considerable restrictions, although the multiple exchange rate regime that prevailed prior to 1989 has been unified. Foreign invested entities are generally responsible for balancing their own foreign exchange requirements. Only entities involved in projects producing specific import substitutes, specified infrastructure projects and designated important projects are guaranteed conversion of local currency. All enterprises were asked to surrender and convert 80 percent of their foreign exchange balances into local currency in early 1998, but this restriction was eased in September 1999, when the surrender-requirement was reduced to 50 percent of foreign currency balances (World Bank, 1999c).

5.2 Modeling Approach

5.2.1 Model Structure

The Global Trade Analyses (GTAP) model is a relatively standard comparative-static multi-sector multi-region Applied General Equilibrium (AGE) model which incorporates the necessary links between factor demands, production structures, trade and protection. The GTAP model is documented comprehensively in Hertel (1997), with updated information available on the GTAP web site.[55] The model assumes that firms use constant returns to scale technology in perfectly competitive product markets. Consumption in the household sector is determined by a constant difference of elasticities (CDE) functional form that is flexible enough to capture important features of demand behavior such as the relatively low income and price elasticities of demand for basic foods. The equilibrium levels of production and consumption are determined by global demand and supply for each product in a situation where firms make zero economic profits. A key assumption of the model is that Vietnamese consumers distinguish between imported and domestic goods, and between imports by country of origin, under the so-called Armington (1969) assumption.

[55] www.gtap.org

Table 5.2 The Structure of Vietnam's Protection

GTAP	Description	Nominal Protection of Import Tariff: Simple Average (%)	Nominal Protection of Import Tariff: Weighted Average (%)	Effective Rate of Protection (ERP): ERP for Import Substitution (%)	Effective Rate of Protection (ERP): ERP for Export Production (%)
1	Paddy rice	5.0	5.0	4.2	-3.8
2	Wheat	3.0	3.0	3.0	0.0
3	Cereal grains	5.9	2.6	-4.6	-10.0
4	Vegetables, fruits, nuts	24.3	27.2	41.6	-8.1
5	Oil seeds	8.6	6.5	4.4	-7.1
6	Sugar cane, sugar beet	10.0	10.0	9.7	-3.8
7	Plant-based fibers	3.9	4.2	1.3	-6.0
8	Crops n.e.c.	13.2	6.2	4.5	-5.8
9	Bovine cattle, sheep, goats, horses	4.5	4.8	0.9	-7.1
10	Animal products n.e.c.	5.0	3.7	-1.5	-7.4
12	Wool, silk-worm cocoons	3.0	1.3	-2.2	-4.2
13	Forestry	4.0	1.2	-20.5	-22.9
14	Fishing	16.9	18.9	66.6	-45.7
15	Coal	3.8	3.4	-14.4	-22.2
16	Oil	4.5	1.0	-13.9	-15.9
17	Gas	14.1	15.5	24.5	-13.3
18	Minerals n.e.c.	2.3	1.1	-21.4	-27.0
19	Bovine cattle, sheep,goat meat	12.2	10.3	12.2	-3.5
20	Meat products n.e.c.	18.1	27.3	43.3	-5.4
21	Vegetable oils and fats	13.1	12.3	1.4	-98.5
22	Dairy products	16.7	14.5	16.3	-5.7
23	Processed rice	7.5	7.5	8.0	-22.5
24	Sugar	30.0	30.0	na[a]	na[a]
25	Food products n.e.c.	28.6	20.1	59.6	-48.3
26	Beverage and tobacco products	52.1	50.2	Na[a]	na[a]
27	Textiles	29.4	30.0	115.0	-138.0
28	Wearing apparel	49.2	49.4	229.8	-231.9
29	Leather products	18.8	13.5	-15.1	-67.1
30	Wood products	18.7	11.9	15.2	-19.3
31	Paper products, publishing	20.0	19.4	88.1	-88.5
32	Petroleum, coal products	9.6	44.0	na[a]	na[a]
33	Chemical, rubber, plastic, products	8.8	6.4	-0.1	-40.3
34	Mineral products n.e.c.	20.7	23.8	69.6	-52.3
35	Ferrous metals	5.3	6.0	3.7	-25.3
36	Metals n.e.c.	5.8	10.4	21.9	-103.8
37	Metal products	18.5	16.6	34.5	-33.9
38	Motor vehicles and parts	22.6	18.6	186.4	-200.7
39	Transport equipment n.e.c.	13.2	28.3	56.6	-32.9
40	Electronic equipment	9.7	10.7	13.8	-18.4
41	Machinery and equipment n.e.c.	7.4	8.1	-0.6	-29.3
42	Manufactures n.e.c.	24.7	22.7	64.3	-45.1
	Total	15.6	19.0		

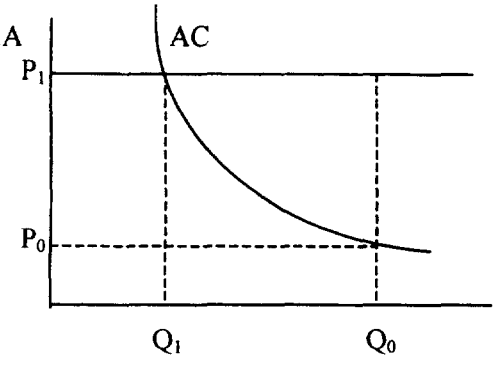
[a] ERP has not been defined since value added at world prices was negative.
Source: Centre for International Economics (1998a); GTAP4 database

Box 5.1 Car Industry Policy in Vietnam: On the Road to Nowhere?

A modern car industry embodies relatively high technology both in its processes and its products and provides great scope for the development of backward linkages to component manufactures. For this reason, many countries have attempted to persuade international auto firms to establish domestic production in replacement of car imports. In Vietnam, this has been done by imposing high protection and, at the same time, by promoting self-sufficiency in production through local content programs.

The automobile industry is characterized by considerable economies of scale. As is shown in Figure 5.A, automobile firms tend to have a downward sloping average cost (AC) curve. The high rate of protection on automobiles initially allows automobile makers to sell at high prices at P_1 and produce at Q_0. The initial firms are extremely profitable because of the protection, and this profitability typically attracts additional entrants. Firms continue to enter until each firm is operating at sub-optimal scale at Q_1. Given the strong scale economies prevailing in this industry, the small output level of the firms pushes up their average costs. The rise in average costs eventually eliminates all excess profits and hence removes the incentive for additional firms to enter, until a new equilibrium is reached where excess profits are zero.

Figure 5.A



The high rate of protection on automobiles attracted fourteen foreign automakers to set up joint ventures in Vietnam. However, high protection resulted in high production costs rather than high profits. Vietnam's domestic market is small, which in turn, hampers the achievement of economies of scale. Given the low level of per capita income of $331 (around $1,590 in purchasing power parity terms in 1997), demand for vehicles is expected to be only around 60,000 per year in 2000 (Vietnam Economic Times, May 1997). Further, a proliferation of models and corresponding fragmentation of production among component suppliers has resulted in small production runs and high costs for many local component suppliers.

The problem is exacerbated by the government's local content policy. In addition to imposing a localization ratio, Vietnam pursues a localization objective through the structure of tariffs and by manipulation of quotas on a variety of completely and semi-knocked-down kits (CKD and SKD) (CIE, 1998b). For instance, each approved SKD kit requires that some parts be deleted in order that they might be supplied by local producers, raising the costs of producing the final goods. Such schemes lead to endless political pressure for revision and fragmentation, and frequently lock in production of vehicles using obsolete technology (Pursell, 1999).

Policies of this type have proven to be extremely costly in a wide range of countries where they have been used. Consumers lose from the high prices, the government loses potential revenues, and producers lose from sub-optimal scale and high average costs. The industry continues to lobby for further increases in protection given the high costs of production. When it is successful, a short period of increased profitability follows, until the benefits are reduced by additional entry. Then, profits return to normal levels, and the cycle of lobbying starts over again.

5.2.2 Data and Liberalization Scenarios

Analyses of Vietnam's Liberalization Schedule

The *CEPT Product Lists* (December, 1998) obtained from the ASEAN Secretariat are analyzed below. Table 5.3 summarizes the structure of Vietnam's liberalization schedule. Import and export values obtained from the UNCTAD Trains database (1996) have been assigned to each category in each list. Vietnam's CEPT schedule suggests that 1) revenue implications, 2) export concessions, and 3) the impacts on domestic industries were key criteria in the choice of items to be included in each list. Overall, Vietnam included a large portion of export-oriented commodities in the early stage of the phase-in period whereas it excluded a set of high-tariff and import substitution items from the AFTA scheme.

In 1996, Vietnam collected 15.0 trillion dong in trade tax revenues, which represented 5.8 percent of GDP or 24.6 percent of total government revenues (CIE, 1998b). Import taxes from ASEAN sources are estimated to have accounted for 45 percent of total import tax revenues. Table 5.3 shows that the import values corresponding to the IL, TEL, SL, and GEL schedules are estimated to be 26 percent, 37 percent, 0.04 percent, and 37 percent respectively. Table 5.3 shows that the tariff rates on the items that Vietnam included in the IL are relatively low, at an import-weighted average of 7.3 percent. By contrast, the items in the GEL accounted for some 37 percent of Vietnam's imports from ASEAN and the average tariff rate on these goods was

Table 5.3 The Structure of Vietnam's Liberalization Schedules

	Inclusion List (IL)			Temporary Exclusion List (TEL)			Sensitive List (SL)			General Exceptions List (GEL)		
	Imports ($1,000)	Exports ($1,000)	W. Tariff Rate (%)	Imports ($1,000)	Exports ($1,000)	W. Tariff Rate (%)	Imports ($1,000)	Exports ($1,000)	W. Tariff Rate (%)	Imports ($1,000)	Exports ($1,000)	W. Tariff Rate (%)
AGR	28390	256932	5.3	3346	8317	10.5	813	7493	3.9	479	3272	24.8
BMF	129299	27027	6.7	168592	4141	20.8	0	0	na	0	0	10.0
BTP	0	0	na	5135	119	60.0	0	0	na	229658	0	50.0
CLO	5281	11482	48.5	460	207	33.0	0	0	na	0	0	na
COG	16933	211968	11.4	12588	815	14.2	0	0	na	53	0	10.0
CRP	165650	1440	4.4	402818	15688	6.4	0	0	na	418	33	10.7
LMF	7163	1193	9.2	20911	20651	22.3	0	0	na	35	103	4.3
MCE	284620	48377	6.0	209065	8003	24.3	0	0	na	78494	992	6.9
PAG	30313	37919	19.0	139522	275823	26.3	463	0	34.4	14561	0	23.2
PCP	18002	0	1.8	6402	5	1.1	0	0	na	641778	3296	46.1
TEX	32910	1287	6.4	88052	3831	27.2	0	0	na	0	0	na
TRP	25762	2203	25.8	28797	1098	30.1	0	0	na	126730	67	33.8
Total	744322	599828	7.3	1085687	338698	17.5	1276	7493	15.0	1092205	7763	42.3
Share (%)	25.5	62.9		37.1	35.5		0.04	0.8		37.4	0.8	

Sources: ASEAN Secretariat *(1997/1998)*; Centre for International Economics (1998a); 1996 TRAINS Database

42.3 percent. This implies that some of the items with high trade volumes and high tariff rates are currently excluded from the AFTA commitments. About 65 percent of tariff revenues from ASEAN are shielded from the CEPT tariff reduction through inclusion in the GEL. On the export side, Table 5.3 demonstrates that the shares of export values assigned to the IL, TEL, SL, GEL

are 63 percent, 36 percent, 0.8 percent, and 0.8 percent respectively. This implies that Vietnam included 98 percent of its export-oriented commodities in the CEPT commitments.

The scope and speed of trade liberalization are highly related to Vietnam's industrialization strategy. Some products in which current Vietnamese competitiveness is low, such as cement and construction steel, are in the TEL. Tariffs on these items begin to be reduced in 2002.[56] "Luxury" household appliances such as electric fans, air conditioners, refrigerators and washing machines will begin to be brought down in 2002 or 2003. ASEAN members agreed to include sugar for which Vietnam has a policy of encouraging production[57] in the Sensitive List, thereby delaying liberalization of this industry.

However, a set of commodities including petroleum, cars and other vehicles with less than 15 seats, and motor cycles (including in SKD and CKD forms), alcoholic beverages and tobacco, are included in the GEL, and so are currently excluded from Vietnam's CEPT commitments. The limited scope of AFTA -- partly because many of the items are currently excluded from the AFTA commitments and partly because the share of Vietnam's trade with ASEAN is relatively small -- suggests that Vietnam should treat AFTA liberalization as an initial step toward broader liberalization rather than as its sole liberalization initiative. Binding the liberalization schedule with AFTA commitments can be a useful defense against potential protectionism. An announcement that such protection will be reduced under AFTA is likely to encourage import-competing industries to begin adjusting to the changes. Furthermore, the announced liberalization is likely to attract export-oriented industries because the availability of low cost intermediate goods and the real exchange rate depreciation facilitate foreign firms to source from the most efficient suppliers.

Liberalization Scenarios

Particular attention in this study is given to how the changes in relative prices resulting from tariff reductions affect key variables such as trade patterns, the terms-of-trade, factor returns, and welfare levels. Another focus is on how each policy affects Vietnam's industrial structure. The experiments conducted using the model are comparative-static in nature and we do not directly consider either the effects of this liberalization on growth rates or the "natural" growth of trade which would occur without further liberalization.

The protection levels that the ASEAN-5 apply against each other are set at the level of 2002, being already reduced to reflect reciprocal concessions. The shocks to be calculated are the reduction of tariffs under the AFTA plan both by Vietnam against ASEAN 5 and by the ASEAN 5 countries against Vietnam. Vietnam's tariff schedule (February, 1998) was obtained from the

[56] For instance, the current tariff rates for cement and construction steel are 15 percent and 30 percent respectively. Their tariffs begin to phase in 2003 and will be 5 percent in 2006.

[57] The sugar industry employs 40,000 workers in sugar-factories and nearly 1 million on sugar-cane farms. Sugar policy has been used as a strategy of rural industrialization and development of regions with lower agricultural potential. Although sugar production has expanded considerably over the last three years (by 40 percent for granulated sugar and by 30 percent for sugarcane), the industry is not internationally competitive. Currently, the wholesale price of sugar is about 25 percent higher than the import price (IMF, 1999c; World Bank, 1999c).

Centre for International Economics to compute MFN tariff rates and the tariff reductions agreed under AFTA were obtained from the *CEPT Product Lists* (ASEAN Secretariat, 1997/1998). Taking into account the "reciprocal" concessions, the bilateral concessional tariff rates were computed item by item based at the 6-digit level for ASEAN 5 and 4-digit level for Vietnam and then averaged into 13 aggregated categories.

Given the importance of Vietnam's trade with APEC countries, an additional simulation was designed to investigate what would happen if Vietnam and all other APEC countries liberalized simultaneously under the APEC framework. In contrast with AFTA, APEC trade liberalization is based, in principle, on a unilateral and non-discriminatory basis.[58] As a very rough hypothetical scenario, we investigate what happens if all the APEC member countries reduce tariffs to 2.5 percent on an MFN basis. Since the proposed time frame for liberalization under APEC is different from that under AFTA (2010 for industrialized economies and 2020 for developing economies), and APEC commitments are not binding in the same way as AFTA commitments, the scenario should not be viewed as reflecting the commitments of the APEC member countries. Rather, the APEC simulation should be seen broadly as giving a preliminary idea on what would happen if all the APEC members liberalized unilaterally on a non-discriminatory basis. The simulations are summarized as below.

Experimental Design

Scenario 1 (AFTA1): Inclusion List (IL) and Temporary Exclusion List (TEL) liberalization under AFTA (2002 for ASEAN 5 and 2006 for Vietnam). Vietnam liberalizes the items in the IL and TEL. ASEAN-5 members reciprocate these concessions.

Scenario 2 (AFTA2): Scenario 1 plus Sensitive List (SL) liberalization (2010 for ASEAN 5 and 2013 for Vietnam). Vietnam liberalizes the items in the IL, TEL, SL and the ASEAN-5 members reciprocate these concessions.

Scenario 3 (AFTA3): Scenario 2 plus General Exceptions List (GEL) liberalization. Vietnam liberalizes the items in the IL, TEL, SL and GEL. The ASEAN-5 members reciprocate these concessions.

Scenario 4 (UNILATERAL): Scenario 3 plus unilateral tariff reduction on a non-discriminatory basis. We investigate what happens if Vietnam extends its AFTA concessions to the rest of the world. We assume that the other APEC members maintain their current protection.

Scenario 5 (APEC): All the APEC members, including Vietnam, reduce their tariff rates unilaterally to 2.5 percent on a non-discriminatory basis.

[58] At their meeting in Bogor in 1994, AFTA leaders set the goal of realizing a free and open trade and investment area in the Asia-Pacific region no later than 2010 for industrialized economies and 2020 for developing economies. At Subic Bay in 1996, APEC adopted the Manila Action Plan for APEC (MAPA). The three pillars of the MAPA are Individual Action Plans (IAPs), Collective Action (CAPs), and Joint Activities in Economic and Technical Cooperation. The IAPs are voluntary submissions of unilateral liberalization initiatives by member economies. The CAPs are the collective action plans which are agreed upon through the process of consensus. The third component of the MAPA is based on the principle that trade and investment liberalization and facilitation should be supported and complemented by economic and technical cooperation (APEC, 1996).

5.3.3 Results

Direction of Trade

Annex Tables 5.B-1 and 5.B-2 show how the directions of trade change under the AFTA and unilateral simulations. When Vietnam liberalizes the Inclusion List (IL) and the Temporary Exclusion List (TEL), its imports from ASEAN increase whereas imports from the rest of the world decrease. Imports from Indonesia, Malaysia, the Philippines, Singapore, and Thailand increase by 26 percent, 50 percent, 19 percent, 24 percent and 60 percent respectively. On the export side (Annex 5.B-2), exports to ASEAN increase with the exception of Singapore whereas the export values to the rest of the world are relatively unchanged. Increases in exports to Thailand are especially high (97 percent increase) because of the substantial tariff cuts given by Thailand on its imports from Vietnam. In contrast, exports to Singapore are unchanged since the initial tariff rates of Singapore are close to zero.

The second tables in Annex 5.B-1 and Annex 5.B-2 refer to the results of Sensitive List (agricultural goods) liberalization in addition to the IL and TEL liberalization. While the SL liberalization affects the import side relatively little, exports to Malaysia and the Philippines increase substantially. This is because Malaysia and the Philippines included some important items, such as processed rice, in their Sensitive Lists (SL).

The third set of tables demonstrates the results of General Exceptions List (GEL) liberalization in addition to the IL, TEL, and the SL liberalizations. In principle, products in the GEL are permanently excluded from the CEPT scheme. However, since Vietnam included a range of commodities that goes far beyond the usual interpretation of this category, such as alcoholic beverages, motorcars, motorcycles and petroleum products, a simulation was conducted to test, as a counterfactual, what happens if Vietnam should liberalize the products in the GEL. In this case, imports from Singapore and Thailand increase substantially, from $2069 to $2461 million for Singapore and $795 to $1130 million for Thailand. The increase in imports of beverage and tobacco products (BTP) and petroleum products (PCP) from Singapore and in imports of transport equipment (TRP) from Thailand contribute to these changes. On the export side, the liberalization of the GEL affects the exports to ASEAN relatively little since the products in the GEL are not export-oriented products. However, overall exports increase in order to finance increased imports.

The fourth set of tables in Annex 5.B-1, 2 (Scenario 4) shows what happens if Vietnam liberalizes all of the AFTA lists on imports from AFTA partners and the rest of the world. Imports are now sourced from a wider variety of countries and exports increase noticeably relative to AFTA liberalization.

Effects on Outputs

Unilateral liberalization has two offsetting effects on output levels. On the one hand, reductions in the costs of intermediate inputs create beneficial forward linkages to domestic production and promote industrialization (Puga and Venables, 1998). On the other hand, more intense import

competition has an adverse effect on the profitability of import-competing firms. Table 5.6 shows the effects on output by sector.

Outputs of agriculture, forestry (AGR), and processed agriculture (PAG) increase with AFTA liberalization, especially with the Sensitive List (SL) liberalization, whereas the outputs of these sectors decrease when Vietnam extends these concessions to the rest of the world. In particular, the decrease in output of processed agriculture (PAG) by 23 percent under APEC liberalization is worth noting.[59] This appears to be because agricultural processing industries in many countries were adversely affected by protection on their raw agricultural inputs. With liberalization in all

Table 5.6 The Effects on Output

		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
		AFTA 1	AFTA 2	AFTA 3	Unilateral	APEC
		(%)	(%)	(%)	(%)	(%)
AGR	Agriculture and forestry	-0.1	0.2	0.3	-1.9	-4
PAG	Processed agriculture	-1.2	7.8	8.7	2.5	-22.7
BTP	Beverage and tobacco	-0.1	-1	-47.0	-55.0	-53.8
COG	Coal, oil, gas	-0.1	-0.3	1.4	0.5	1.2
PCP	Petroleum products	5	5	5.8	7.1	13.8
TEX	Textiles	2.6	0.2	1.7	10.3	16.4
CLO	Apparel	10.1	6.9	7.9	75.4	83.9
LMF	Light manufacturing	4.2	1.9	3.3	15.6	28
BMF	Basic manufacturing	-3.6	-4.6	-3.7	-12.8	-10.9
CRP	Chemical, rubber, plastics	-0.4	-1	-1.0	-2.6	0.1
TRP	Transport equipment	-0.8	-2.6	-31.5	-48.1	-54.2
MCE	Electronics and machinery	-3.6	-4.7	-2.8	-7.5	-5.2

Source: Authors' Simulation Results (qo)

APEC members, agricultural processing in these countries expands, placing competitive pressure on the agricultural processing sector in Vietnam. As the profitability of agricultural processing falls in Vietnam due to the increased competition, Vietnamese labor and other resources move to the now more profitable labor intensive sectors, such as clothing and light manufacturing, whose expansion is stimulated by increased market access to the APEC countries.

There is very substantial expansion of the apparel industry, particularly when Vietnam liberalizes against the rest of the world either unilaterally or in the APEC scenario. This is partly because falls in the costs of intermediates resulting from import liberalization lower the cost of production[60]; partly because Vietnam has a clear comparative advantage in the labor-intensive sectors against non-ASEAN countries, while its competitive position within ASEAN for these

[59] Since the APEC scenario is hypothetical, the results should not be considered as rigorous estimates. However, the results shed some lights on the qualitative assessments of the APEC liberalization. On the one hand, the APEC-wide liberalization introduces competition in Vietnam's exports. On the other hand, Vietnam is likely to benefit from increased access to APEC markets.

[60] Currently, Vietnam's textile and garment industry has to import most of raw materials from abroad. However, this result is likely to overestimate the magnitude of expansion since many export firms benefit from the duty drawback system.

commodities is less clear. In contrast, the outputs of some import competing sectors are likely to contract due to increasing competition. In particular, transport equipment (TRP) and beverage and tobacco sectors (BTP) contract if Vietnam liberalizes those items currently in the GEL (scenario 3) and further contracts if Vietnam liberalizes against the rest of the world. The impacts on basic manufacturing (BMF)[61] appear to be relatively small under AFTA whereas production contracts further with non-discriminatory liberalization.

Effects on Factor Returns

Regional integration makes trade easier and hence tends to raise the returns to at least some factors of production (Winters, 1996). A simple application of the Heckscher-Ohlin model might lead us to expect Vietnam's returns to capital to fall since Vietnam is capital-scarce relative to its ASEAN partner countries. Assuming that protection in Vietnam favors capital-intensive sectors, increased trade with ASEAN might be expected to reduce the returns to capital. However, there is a number of reasons to believe that the basic Heckscher-Ohlin model is too simple for our purposes and one might expect ASEAN to raise the rates of returns on capital in both partners regardless of capital abundance.

First, the standard Heckscher-Ohlin model applies only to a so-called square model with equal numbers of factors of production and goods; and there is no indication that this is the way the real world is. The GTAP 4 database identifies five factors of production: land, unskilled labor, skilled labor, capital, and natural resources and up to 50 commodities. Second, the Heckscher-Ohlin model presumes homogeneous products, whereas experience suggests that many markets are better represented using the assumption that products are differentiated. The GTAP model embodies the so-called Armington assumption where products are differentiated by country of origin. Third, integration might affect the rate of return on capital through the price of intermediate and capital goods. A reduction in tariffs and trading costs on imports of capital equipment will reduce the prices which industry has to pay for investment goods (The model does not capture this effect directly because the total stock of capital in each country is fixed in these simulations). Table 5.7 shows the simulated results of the AFTA reform scenarios on returns to factors of production.

Table 5.7 Real Returns to Factors of Production

	Scenario 1	Scenario 2	Scenario 3	Scenario 5	Scenario 6
	AFTA 1	AFTA 2	AFTA 3	Unilateral	APEC
	(%)	(%)	(%)	(%)	(%)
Land	1.9	4.0	9.9	2.9	-8.3
Unskilled Labor	2.3	2.7	8.0	16.1	17.2
Skilled Labor	2.0	2.4	7.7	15.4	17.7
Capital	2.0	2.4	7.2	14.3	16.0

Source: Authors' Simulation Results (pfactreal)

[61] Some important industries such as cement, paper, and steel, belong to this category. However, caution should be borne in mind to interpret this result since our simulation does not include protective effects of quantitative restrictions. For these industries, the main protection measures are nontariffs such as quota and market entry.

The measures reported reflect the changes in factor prices relative to the price index for private consumption expenditure. They do not, however, take into account the effects of changes in the revenue position of the government, and its ability to redistribute tax revenues to individuals, either through transfers or the provision of public goods. AFTA raises real wages for skilled and unskilled labor, as well as the return to capital. The magnitude of increases more than doubles when Vietnam extends its liberalization against the rest of the world. Returns to land increase under AFTA liberalization whereas its return decreases with non-discriminatory liberalization. Again, this is because Vietnam has a comparative advantage in agriculture among the ASEAN countries. With further liberalization of imports from the rest of the world, labor appears to shift from the agricultural sector to industrial sectors because land is sector specific and labor is inter-sectorally mobile. In sum, wider liberalization is likely to promote industrialization in Vietnam.

Terms-of-trade Impacts

The terms-of-trade, usually defined as the ratio of the price a country receives for its exports to the price it pays for its imports, is a key concept in understanding the effects of price changes on welfare. The reciprocal liberalization involved in AFTA leads to two offsetting effects. (i) Liberalization of Vietnam's imports reduces costs in Vietnam and hence increases its supply of exports to world markets. This, in turn, can be expected to reduce prices received for exports per unit (see Figure 2C-1 in Chapter 2). (ii) As its AFTA partners reduce their tariffs on Vietnamese exports, their demands for Vietnamese exports rise, and this in turn improves Vietnamese export prices (Figure 2D in Chapter 2). The net effect depends on which effect is larger.

Table 5.8 demonstrates the effects on the terms-of-trade.[62] Table 5.8 implies that Vietnam's terms-of-trade deteriorate primarily through changes in its export prices, except of scenario 2

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[62] We follow McDougall (1993) to decompose the impact of terms-of-trade into three components: *the world price effect* (1), *the export price effect* (2), and *the import price effect* (3).

Terms-of-trade

$$T = \sum \Delta T_{1i} + \sum \Delta T_{2i} - \sum \Delta T_{3i}$$

(1) *World Price Effect*: $\Delta T_{1i} = (S_{xi} - S_{mi}) * (P_{wi} - P_w)$
(2) *Export Price Effect*: $\Delta T_{2i} = S_{xi} * (p_{xi} - p_{wi})$
(3) *Import Price Effect*: $\Delta T_{3i} = S_{mi} * (p_{mi} - p_{wi})$

The world price effect (1) equals the sum over all traded commodities of a country's net trade share (the difference between export and import shares) for good i $(S_{xi} - S_{mi})$ and the change in the price of i (P_{wi}) relative to an index of average world prices $(P_{wi} - P_w)$. In a perfect substitute model, (1) would fully account for the change in terms-of-trade since each commodity has a single world price. In an imperfect substitute model, changes in terms-of-trade can also arise from changes in the relative prices of different source-specific varieties of the same commodity. *The export price effect* (2) refers to the sum of export share-weighted, relative price changes, where the relative price in question is the ratio of the exporter's price for commodity i (p_{xi}) relative to the worldwide average (p_{wi}). The degree to which these two prices can diverge is a function of the extent of product differentiation in market i. *The import price effect* (3) is the import share-weighted change in the country specific price index (P_{wi}) relative to the average world price (p_{wi}).

where export prices rise. Most of the terms-of-trade deteriorations result from falls in the prices received for exports, but particularly under the APEC scenario, a part results from increases in the prices of imports. The larger magnitude in change in export prices relative to import prices is related to the assumption of the product differentiation by country of "origin" (e.g. Vietnamese rice, Japanese cars) on the demand side, a standard feature of the Armington (1969) model. With the standard GTAP elasticities of substitution that we have used in this chapter, increases in Vietnam's export supplies require relatively large falls in the prices of Vietnamese exports if Vietnam is to increase its export share. On the import side, Vietnam faces highly elastic export supply curves because of the small size of its economy in world markets. Thus, Vietnam needs to pay higher prices for its imports only to the extent that it is a relatively large importer from world markets.

Table 5.8. The Effects of Terms-of-trade

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
	AFTA 1	AFTA 2	AFTA 3	Unilateral	APEC
	(%)	(%)	(%)	(%)	(%)
World Price Effect	0.00	0.00	0.00	-0.01	0.01
Export Price Effect	-0.2	0.4	-0.4	-0.7	-2.6
Import Price Effect	0.02	0.02	0.05	0.02	-1.1
Total TOT Effects	-0.2	0.4	-0.4	-0.7	-1.5

Source: Authors' Simulation Results (c1 r, c2 r, c3 r, tot2)

The improvement in the terms-of-trade in scenario 2 reflects the increases in export prices resulting from the ASEAN partners' concessions against Vietnam's agricultural commodities, which are particularly important for Vietnam given its revealed comparative advantage in agriculture within ASEAN.

In contrast, the terms-of-trade impacts are negative under scenario 3, because Vietnam gains very little from improved access for these products to partner countries, its increased exports tend to depress the prices it receives for its exports. At the same time, it must pay higher prices to source more imports from its ASEAN partners because it increases its demand for imports from these countries alone.

Under unilateral liberalization, the deterioration in the export prices for Vietnamese goods is larger than under the AFTA liberalization scenarios because Vietnam is liberalizing more, and hence increasing its competitiveness and exports by more than under the AFTA scenario. The decline in prices is likely to be particularly large relative to world prices for commodities in which Vietnam greatly expands its export volumes.

Economy-wide Effects

Table 5.9 presents the key results for some important economy-wide variables. As the scope of liberalization widens from partial AFTA to non-discriminatory, both imports and exports increase. Under scenario 2, Vietnam's imports and exports increase by 3.1 percent and 3.9 percent respectively. The magnitude of the increase in trade value is the highest under non-discriminatory liberalization (scenario 4) which implies a 12.8 percent increase in imports and a

15.2 percent increase in exports. The increases in the *value* of trade as we move from scenario 1 to scenario 4 in Table 5.9 reflect favorable impacts of increases in export *volumes*, and unfavorable impacts of declines in export prices[63] as export volumes increase—clearly, the export volume impacts dominate overall. However, *values* of trade under APEC (scenario 5) decrease slightly relative to scenario 4, reflecting falling prices. The increase in export *volumes*, which is more relevant than *values* to the question of employment in the export sector, would be substantially greater at 13.6 percent (not reported) under APEC than under unilateral liberalization at 12.7 percent.

On the import side, liberalization directly stimulates increases in imports of those goods subject to liberalization. Where liberalization is discriminatory, as is the case with AFTA, part of the increase in imports from partner countries is offset by reductions in imports from other countries (*trade diversion*). For instance, under scenario 2, which is the current scenario under AFTA, imports from ASEAN increase by 33.4 percent, while imports from the rest of the world decrease by 12.1 percent. Larger increases in imports from ASEAN relative to the rest of the world under non-discriminatory liberalization (scenario 4) may reflect the higher initial tariff rates against ASEAN imports.[64] The broader the geographic coverage of import liberalization, the greater the overall stimulus to imports (*trade creation*), and the greater the associated stimulus to exports. Under the APEC liberalization scenario, exports to the rest of the world increase by 15.2 percent whereas those to ASEAN decrease slightly. This is because liberalization by APEC countries significantly improves Vietnam's terms-of-trade whereas the gains from market access within ASEAN are relatively small because of the dominance of Singapore in Vietnam's exports.

There are losses of tariff revenue ranging from 18.0 percent in scenario 2 to 82.4 percent in scenario 4. The loss of tariff revenues is smaller in scenario 2 than in scenario 3 since the increase in imports financed by increased exports outweighs the loss resulting from tariff reduction. The change in tariff revenues under discriminatory liberalization has three components. These are (i) a loss of revenues resulting from the fall in rates on the goods liberalized; (ii) a gain from increases in the volumes of liberalized imports; and (iii) a loss of revenues from reductions in the volumes of import flows not being liberalized. The third loss reflects the problem of trade diversion and is frequently critical to the welfare impacts of discriminatory liberalization.

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[63] Throughout this analysis, we have utilized the default values of the Armington trade elasticities from the GTAP database. There is considerable evidence that these values are too low for long-run simulations such as those undertaken here, and many simulations of long run liberalization (see Martin and Winters 1996, for example) utilize substantially higher values, which result in much smaller terms-of-trade deterioration when countries liberalize.

[64] While the tariff rates are the same at the tariff line level, the weighted averages differ because of the differences in the mix of imports in each commodity group. The higher initial tariff rates against ASEAN countries imply that the commodity composition sourced from ASEAN consists of the items with relatively high tariff rates. Average tariffs differ between ASEAN and the rest of the world, with duties on imports form ASEAN averaging 24.3 percent as against 16.5 percent from the rest of the world.

Table 5.9. Key Economy-wide Variables for Vietnam

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
	AFTA 1	AFTA 2	AFTA 3	Unilateral	APEC
Total Import Value (%)	3.1	3.4	6.3	12.8	11.7
From ASEAN	32.8	33.4	63.3	22.8	27.0
From ROW	-12.3	-12.1	-23.1	7.5	3.9
Total Export Value (%)	3.9	4.7	7.2	15.2	12.7
To ASEAN	13.8	33.6	36.9	33.8	-2.6
To ROW	2.3	0.1	2.5	12.2	15.2
Tariff Revenue (%)	-18.0	-17.8	-56.0	-82.4	-84.7
Real Expenditure (%)	0.02	0.4	-0.04	1.4	1.3
Total EV ($mil.) of which	2.1	51.3	-5.6	191.6	180.3
Allocative Component	19.2	21.7	26.6	251.0	293.3
Terms-of-trade Component	-17.1	29.6	-32.3	-59.4	-113.0

Source: Authors' Simulation results (VIW, CNTalleffr, CNTtotr)

The overall welfare effects presented in Table 5.9 reflect primarily the consequences of the allocative efficiency effects of liberalization and trade diversion, and terms-of-trade effects. In scenario 1, the overall welfare gain is close to zero since the gains resulting from increased trade with ASEAN partner countries are offset by the trade diversion from the rest of the world, which causes a loss of tariff revenues. The net welfare gain from regional liberalization is more or less completely offset by the overall deterioration in the terms-of-trade. Under scenario 2, Vietnam's real expenditure increases by $51.3 million per year, or 0.4 percent of base-period expenditure. This gain is primarily attributed to the terms-of-trade gains against Vietnam's agricultural goods resulting from the concessions given by ASEAN partner countries. Under scenario 3, the net welfare gains are very slightly negative. The net gains in allocative efficiency resulting from the regional liberalization are very small because of the trade diversion towards ASEAN partners. The negative terms-of-trade impacts more or less completely outweigh the positive allocative effects. Under scenarios 4 and 5, real expenditure increases substantially by 1.4 percent and 1.3 percentage points from the baseline, more than tripling the real gains from AFTA liberalization. Although Vietnam experiences a larger terms-of-trade deterioration on its exports, the loss is far outweighed by the improved resource allocation impacts. Part of this gain arises from the unwinding of the trade diversion created by the regional arrangement. Following these unilateral liberalizations, Vietnamese firms can choose to source from lower cost suppliers outside ASEAN. Another part of the gain comes from more efficient resource use in Vietnam. Allocative efficiency is the highest under scenario 5. Since the tariff reductions under the APEC scenario are nondiscriminatory, there can be no trade diversion. However, the welfare level is slightly lower than under scenario 4 due to the deterioration in the terms-of-trade. Liberalization by APEC partners increases their export supplies in products that Vietnam also produces, and increases the demand for products that Vietnam imports.

5.3 Conclusions

AFTA accession is an important initial step for Vietnam's further liberalization. Under it, Vietnam must commit to a tariff reduction schedule at the tariff line level and start to identify and eliminate quantitative restrictions. This process involves harmonizing tariff nomenclature, improving legal and regulatory frameworks, and facing the needs of increasing competitiveness of its industries. In these respects, AFTA is a useful training ground for Vietnam's further integration into the global economy.

However, our simulation results showed that the static economy-wide effects of AFTA liberalization currently committed to by Vietnam are relatively small. There are several important reasons for this. On the import side, the share of imports from AFTA partners is currently relatively small, and the initial extent of liberalization of these imports is also limited. In addition, the gains from trade creation are offset by the costly trade diversion resulting from loss of tariff revenue on imports from non-ASEAN countries. On the export side, the dominance of Singapore in Vietnam's ASEAN exports implies relatively small gains from improvements in market access, since Singapore's initial protection is close to zero. Further, the standard GTAP model used in the analysis suggests that there may be significant terms-of-trade losses from the export expansion associated with AFTA liberalization. All of above suggests that it would be beneficial for Vietnam to extend its AFTA concessions on an MFN basis. When Vietnam extends its AFTA commitments to all of its trading partners, its welfare gains increase substantially. The gains are larger in part because of the greater extent of liberalization, in part because the broader liberalization undoes the costly trade diversion created by the initial, discriminatory liberalization.

The simulation results reveal that AFTA, unilateral and APEC liberalizations affect Vietnam's industries in different ways. AFTA appears to have beneficial impacts on Vietnam's agriculture resulting from the increasing access to ASEAN market, especially with Sensitive List (SL) liberalization. In contrast, a broader liberalization beyond AFTA is likely to cause a shift of labor from agriculture and a set of import competing activities towards relatively labor-intensive manufacturing. These sectors conform to Vietnam's current comparative advantage and taking this step now seems a promising way to facilitate the subsequent development of competitive firms in more capital and skill intensive sectors.

In contrast, some import competing industries, including transport equipment and beverages, tend to contract with wider liberalization, revealing the dependence of these industries on protection. Whether or not to protect the so-called *key* industries is controversial. If the gains from "learning by doing" in these industries were high enough, then such an import substitution policy might increase growth rates even while foregoing some of the static gains from conforming more closely to Vietnam's comparative advantage. However, as the experience of some Asian countries during the recent financial crises highlighted, industries developed behind high protective barriers tend to remain inefficient and to impose substantial costs to the economy.

Despite substantial progress since *doi moi*, Vietnam remains one of the most distorted economies in the region. The state sector still enjoys various privileges including access to land, capital, and quota allocations. An import substitution policy has been used to promote a set of capital-intensive and "strategic" industries, which are often run by joint ventures between SOEs and foreign firms, and high protection is used to attract foreign investments. Preferential treatment of these industries imposes an implicit tax on small and medium-sized firms in the private sector, which are usually labor-intensive. Vietnam employs a set of export promotion measures such as duty drawback system to mitigate the negative effects of protection on export sectors. However, a system of high tariffs and deep exemptions such as this tends to stimulate exports from assembly-type operations, rather than from sectors with strong forward and backward linkages to other domestic sectors. Binding international commitments in AFTA and, in due course, at the WTO, provide a credible signal of Vietnam's commitment to open trade policies that will help stimulate upgrading of existing firms and investment in efficient and dynamic new firms.

Industrialization and modernization should be based on the development of the skills needed for modern industrial development, on accumulation of the capital needed in capital-intensive sectors, and on improvement of the physical and institutional infrastructures. The opportunity for Vietnam to expand the labor-intensive manufacturing sectors that so well match its current pattern of factor endowments is almost certain to be an important step on the ladder of development. This step provides a platform for the progressive development of more capital and skill intensive sectors as long as sufficient attention is paid to the accumulation of the human and physical capital needed for the expansion of these sectors.

Finally, the multi-region and multi-sector modeling framework adopted in this study has proved to be a useful tool to assess the simultaneous impacts of trade liberalization by Vietnam and its trading partners on trade, output, and welfare. However, the model is subject to a number of limitations. First, the model is static and it does not take into account the dynamic effects of trade liberalization which would occur during the phase-in period. Second, we did not address the protective effects of Non Tariff Barriers (NTBs) for want of adequate information on their restrictiveness. If NTBs were incorporated in the model, the magnitude of consequences of trade liberalization would be larger. Third, we have not analyzed the set of export promotion measures such as the duty drawback system which coexist with the import protection.[65]

[65] For a new version of the GTAP which models duty exemptions explicitly, see Ianchovichina, Martin and Fukase (2000).

Annex 5.A Aggregation Strategy

REGIONS

1. Indonesia (IDN)
2. Malaysia (MYS)
3. The Philippines (PHL)
4. Singapore (SGP)
5. Thailand (THA)
6. Vietnam (VNM)
7. Japan (JPN)
8. EU15 (EU15)
9. United States (USA)
10. Hong-Kong, Korea (NIEs)
11. China (CHN)
12. ROW (ROW)

SECTORS

1. AGR (Agriculture and forestry)

1. paddy rice
2. wheat
3. cereal grains
4. vegetables, fruits, nuts
5. oil seeds
6. sugar cane
7. plant based fibers
8. crops n.e.c.
9. bovine cattle, sheep, goat, etc
10. animal products
12. wool, silk-worm, cocoons
13. forestry
14. fishing

2. PAG (Processed agriculture)

19. bovine, cattle etc meat
20. meat products
21. vegetable oils & fats
22. daily products
23. processed rice
24. sugar
25. food products n.e.c.

3. BTP (Beverage and tobacco products)

26. beverages & tobacco products

4. COG (Coal, oil, gas)

15. coal
16. oil
17. gas
18. minerals, n.e.c.

5. PCP (Petroleum and coal products)

32. petroleum & coal products

6. TEX (Textiles)

27. textiles

7. CLO (Apparel)

28. apparel

8. LMF (Light manufacturing)

29. leather products
30. wood products
42. manufactures n.e.c.

9. BMF (Basic manufacturing)

31. paper products, publishing
34. mineral products
35. ferrous metals
36. metal n.e.c.
37. metal products

10. CRP (Chemical,rubber, plastic products)

33. chemical, rubber, plastic products

11. TRP (Transport Equipment)

38. motor vehicles & parts
39. transport equipment n.e.c.

12. MCE (Electronics and Machinery)

40. electronic equipment
41. machinery & equipment

13. OTH (Others)

43. electricity
44. gas manufacture, distribution
45. water
46. construction
47. trade, transport
48. financial business, recreational services
49. public administration and defense, education, health services
50. dwellings

Annex 5.B-1 Changes in Vietnam's Imports by Source

	IDN	MYS	PHL	SGP	THA	NIES	EU15	USA	CHI	JPN
SCENARIO 1 (AFTA 1)										
AGR	10(13)	1(2)	0.3(170)	7(23)	25(3)	2(1)	8(0.8)	15(1)	19(1)	1(1)
PAG	6(102)	114(55)	8(65)	53(36)	105(77)	12(-23)	73(-23)	8(-23)	12(-23)	6(-23)
BTP	7(97)	1(-4)	2(-4)	325(-0.2)	5(365)	30(-4)	15(-4)	1(-3)	115(-4)	0.05(0)
COG	3(1)	1(12)	1(67)	7(-3)	32(65)	0.3(-4)	21(-5)	0.5(-4)	3(-5)	0.6(-5)
PCP	0	10(3)	8(0)	395(-0.3)	19(0.2)	0	4(0)	0.8(0)	10(0)	29(0)
TEX	53(106)	57(18)	2(125)	79(156)	73(153)	343(-9)	38(-9)	6(-9)	78(-9)	107(-9)
CLO	30(944)	6(468)	1(1017)	14(1074)	8(921)	3(-55)	0.4(-54)	0.1(-54)	7(-55)	3(-55)
LMF	9(-5)	14(36)	1(304)	80(120)	28(134)	79(-22)	15(-22)	5(-22)	17(-22)	17(-22)
BMF	74(60)	49(60)	1(14)	191(45)	115(52)	186(-15)	72(-15)	19(-15)	161(-15)	97(-15)
CRP	192(2)	49(14)	99(2)	262(19)	93(17)	184(-7)	200(-7)	51(-7)	156(-7)	107(-7)
TRP	38(-12)	4(27)	17(968)	70(105)	174(56)	116(-15)	85(-15)	90(-15)	19(-15)	265(-15)
MCE	6(26)	113(99)	3(2)	578(35)	110(89)	254(-16)	362(-16)	89(-16)	173(-16)	322(-16)
OTH	3(0.3)	3(0.3)	4(0.2)	2(0)	4(0)	133(0.3)	13(0.2)	3(0.3)	4(0.2)	2(0.5)
Total	431(26)	420(50)	147(19)	2061(24)	791(60)	1343(-12)	906(-13)	287(-13)	774(-12)	959(-14)
SCENARIO 2 (AFTA 2)										
AGR	10(16)	1(7)	0.3(180)	7(26)	26(7)	2(4)	8(4)	16(4)	20(4)	1(4)
PAG	6(108)	117(60)	9(70)	55(41)	108(82)	13(-21)	75(-21)	8(-21)	12(-21)	6(-21)
BTP	7(99)	0.5(-2)	2(-3)	328(1)	5(370)	30(-3)	15(-3)	1(-3)	116(-3)	0.1(0)
COG	3(1)	0.6(12)	1(67)	7(-3)	32(65)	0.3(-4)	21(-4)	0.5(-4)	3(-4)	0.6(-5)
PCP	0.0	10(3)	8(0.1)	395(-0.1)	19(0.4)	0.0	4(0)	0.8(0)	10(0.1)	29(0.1)
TEX	52(102)	56(16)	2(121)	77(151)	71(148)	336(-10)	38(-10)	6(-10)	76(-10)	105(-10)
CLO	30(945)	6(468)	1(1017)	14(1075)	8(921)	3(-55)	0.4(-54)	0.1(-54)	7(-55)	3(-55)
LMF	9(-4)	15(37)	1(309)	80(122)	29(136)	80(-21)	15(-21)	5(-21)	17(-21)	18(-21)
BMF	75(61)	49(61)	1(14)	192(46)	116(53)	188(-15)	73(-15)	19(-15)	162(-15)	98(-15)
CRP	193(2)	48(15)	99(2)	263(19)	93(17)	184(-7)	200(-7)	51(-7)	157(-7)	107(-7)
TRP	38(-12)	4(27)	18(978)	70(106)	175(57)	117(-15)	85(-15)	90(-15)	19(-15)	267(-15)
MCE	6(27)	113(99)	3(3)	579(35)	110(89)	254(-15)	363(-15)	88(-15)	174(-15)	323(-15)
OTH	4(1)	3(1)	4(2)	2(1)	4(1)	134(1)	13(1)	3(1)	4(1)	2(1)
Total	432(26)	423(51)	148(20)	2069(25)	795(61)	1341(-12)	910(-13)	289(-13)	777(-12)	960(-14)
SCENARIO 3 (AFTA 3)										
AGR	9(13)	1(7)	0.3(200)	8(29)	26(5)	2(3)	8(2)	16(2)	19(2)	1(-3)
PAG	7(130)	111(52)	20(294)	58(48)	104(75)	12(-25)	71(-26)	7(-26)	11(-26)	6(-26)
BTP	8(130)	1(92)	4(108)	662(103)	3(145)	6(-80)	3(-80)	0.2(-79)	24(-80)	0
COG	3(-1)	1(15)	1(59)	9(31)	32(64)	0.2(-23)	21(-6)	0.5(0)	3(-6)	0.6(-5)
PCP	0	5(-47)	10(22)	441(12)	22(16)	0	1(-70)	0.3(-63)	3(-70)	9(-69)
TEX	52(102?)	56(17)	2(124)	76(145)	72(151)	340(-10)	38(-10)	6(-9)	77(-10)	106(-10)
CLO	30(935)	6(456)	1(1067)	13(1055)	8(940)	3(-54)	0.4(-47)	0.1(-58)	7(-54)	3(-54)
LMF	9(-10)	14(29)	1(291)	91(153)	27(126)	77(-24)	14(-25)	5(-24)	16(-24)	17(-24)
BMF	72(54)	47(53)	1(14)	183(39)	113(49)	182(-17)	71(-17)	18(-17)	157(-17)	96(-17)
CRP	190(1)	48(14)	100(3)	257(16)	93(17)	184(-7)	199(-7)	51(-7)	156(-7)	107(-7)
TRP	190(339)	6(103)	6(264)	76(123)	517(364)	38(-72)	28(-72)	29(-72)	6(-72)	87(-72)
MCE	6(29)	113(100)	3(3)	585(36)	110(89)	252(-16)	358(-16)	87(-16)	172(-16)	320(-16)
OTH	3(-3)	3(-4)	4(-1)	2(-1)	4(-2)	132(-1)	13(-1)	3(0.3)	4(-1)	2(-1)
Total	579(69)	412(47)	152(23)	2461(48)	1130(129)	1226(-19)	825(-21)	224(-32)	656(-25)	754(-32)
SCENARIO 4 (UNILATERAL)										
AGR	9(5)	1(-3)	0.3(200)	7(19)	24(-3)	2(-3)	8(6)	26(70)	36(87)	1(6)
PAG	6(110)	101(38)	18(257)	53(35)	95(59)	29(84)	96(0.1)	14(47)	15(2)	7(-10)
BTP	6(63)	1(35)	3(49)	469(44)	2(70)	46(48)	24(51)	1(47)	177(48)	0.1(100)
COG	3(-1)	0.6(15)	1(59)	9(30)	32(63)	0.3(15)	21(-6)	0.5(0)	3(-3)	0.6(-5)
PCP	0	5(-51)	9(13)	409(3)	20(7)	0	2(-33)	0.8(-1)	4(-61)	31(8)
TEX	33(27)	35(-27)	1(45)	48(54)	45(58)	580(55)	73(73)	5(-30)	124(46)	211(80)
CLO	10(232)	2(82)	0.2(233)	4(271)	3(233)	25(264)	3(281)	1(317)	53(241)	26(245)
LMF	6(-33)	10(-5)	0.7(204)	67(86)	20(67)	100(-1)	29(54)	8(36)	35(64)	20(-9)
BMF	54(17)	35(16)	0.7(-21)	138(5)	86(13)	248(13)	90(6)	23(5)	224(18)	110(-5)
CRP	176(-7)	44(5)	92(-5)	239(8)	86(8)	214(8)	218(2)	52(-4)	166(-1)	112(-3)
TRP	78(79)	3(-18)	2(48)	31(-9)	211(89)	150(9)	21(-79)	97(-9)	13(-44)	381(22)
MCE	5(10)	97(71)	3(-11)	503(17)	95(62)	313(4)	365(-15)	94(-10)	224(9)	350(-8)
OTH	4(3)	3(2)	4(4)	2(-0.7)	4(4)	138(4)	14(4)	4(3)	4(4)	2(3)
Total	388(14)	338(20)	135(10)	1978(19)	721(46)	1844(21)	963(-8)	327(-1)	1078(23)	1251(13)

Note: The figures are changes in trade flows in millions of U.S. dollars. Between parenthesis are percentage changes in trade flows.
Source: Author's simulation results.

Annex 5.B-2 Changes in Vietnam's Exports by Source

	IDN	MYS	PHL	SGP	THA	NIES	EU15	USA	CHI	JPN
SCENARIO 1 (AFTA 1)										
AGR	99(98)	52(-0.3)	10(160)	189(-2)	22(3)	165(-2)	298(-3)	153(-3)	40(-3)	74(-3)
PAG	87(0.4)	95(0.4)	33(1)	34(0.3)	53(334)	44(0.2)	49(0.2)	23(0.2)	162(0.2)	371(0.2)
BTP	0	0	0	0.3(4)	0	2(3)	0.1(0)	0.4(5)	0.6(2)	1(3)
COG	19(0.2)	2(0)	3(16)	194(0.2)	12(61)	14(0.1)	56(0.1)	2(0)	121(0.1)	724(0.1)
PCP	0	0	0	0	0	0	0.3(4)	0	0.8(3)	0
TEX	-34	2(37)	2(78)	2(4)	0.4(192)	51(4)	22(4)	0.1(0)	1(4)	67(4)
CLO	0	2(86)	0	13(14)	0.2(1000)	31(14)	453(14)	22(14)	0.5(14)	443(14)
LMF	0.1(29)	13(71)	1(244)	12(5)	29(344)	40(5)	721(5)	7(5)	15(5)	158(5)
BMF	1(12)	17(3)	0.8(153)	10(2)	3(39)	9(2)	45(2)	2(2)	3(2)	8(2)
CRP	3(43)	2(29)	2(68)	14(2)	1(119)	4(2)	16(2)	2(2)	7(2)	5(2)
TRP	0	0.3(88)	1(119)	2(10)	1(116)	8(10)	6(10)	0	3(10)	0.2(12)
MCE	2(5)	5(25)	2(5)	29(5)	1(42)	22(5)	11(5)	0	1(5)	8(5)
OTH	38(-0.6)	5(-0.6)	19(-0.6)	7(-0.5)	22(-0.5)	114(-0.7)	381(-0.7)	129(-0.7)	19(-0.7)	386(-0.6)
Total	252(25)	196(5)	75(17)	507(0)	145(97)	504(1)	2057(4)	341(-0.6)	373(0.2)	2244(3)
SCENARIO 2 (AFTA 2)										
AGR	96(91)	51(-3)	9(150)	183(-6)	21(-0.5)	160(-5)	287(-6)	148(-6)	39(-6)	71(-6)
PAG	85(-2)	191(103)	164(397)	33(-2)	52(323)	43(-2)	47(-2)	23(-2)	158(-2)	362(-2)
BTP	0	0	0	0.3(0)	0	2(0)	0.1(0)	0.4(0)	0.6(0)	1(0)
COG	19(0)	1(0)	3(15)	193(-0.1)	12(61)	14(-0.1)	56(-0.2)	2(-0.6)	120(-0.2)	722(-0.2)
PCP	0	0	0	0	0	0	0.3(4)	0	0.8(3)	0
TEX	1(32)	2(35)	2(76)	2(3)	0.4(192)	50(2)	21(2)	0.1(0)	1(3)	66(2)
CLO	0	2(81)	0	13(11)	0.2(950)	30(11)	440(11)	21(11)	0.5(11)	431(10)
LMF	0.1(29)	13(67)	1(235)	12(3)	28(333)	39(2)	703(2)	7(3)	15(2)	154(3)
BMF	1(9)	17(0.5)	0.8(147)	10(-0.4)	3(37)	9(-0.7)	44(-0.6)	2(-0.6)	3(-0.7)	7(-0.5)
CRP	3(42)	2(27)	2(67)	14(1)	1(118)	4(1)	16(1)	2(1)	7(1)	4(1)
TRP	0	0.3(82)	1(111)	2(6)	1(107)	8(6)	6(6)	0	3(6)	0.3(8)
MCE	2(3)	4(23)	2(3)	29(3)	1(39)	22(3)	11(2)	0.1(0)	0.6(3)	8(3)
OTH	37(-2)	5(-2)	19(-3)	8(-2)	21(-2)	111(-2)	374(-2)	127(-2)	18(-3)	379(-2)
Total	246(22)	290(56)	205(218)	498(-2)	142(92)	492(-1)	2005(2)	331(-3)	367(-2)	2206(1)
SCENARIO 3 (AFTA 3)										
AGR	98(94)	52(-1)	9(154)	186(-4)	22(2)	162(-4)	292(-5)	150(-5)	40(-5)	72(-5)
PAG	87(0.5)	196(108)	168(408)	34(2)	53(334)	44(0.3)	49(0.3)	23(0.3)	162(0.2)	372(0.3)
BTP	0	0	0	0.3(4)	0	2(4)	0.1(0)	0.4(5)	0.6(4)	1(4)
COG	19(2)	2(2)	4(18)	198(2)	12(64)	15(2)	57(2)	2(2)	123(2)	738(2)
PCP	0	0	0	0	0	0	0.3(8)	0	0.8(5)	0
TEX	1(33)	2(37)	2(79)	2(4)	0.4(192)	51(4)	22(4)	0.1(0)	1(4)	67(4)
CLO	0	2(83)	0	13(12)	0.2(1000)	30(11)	444(12)	21(12)	0.5(12)	434(11)
LMF	0.1(43)	13(70)	1(247)	12(5)	29(342)	39(4)	716(4)	7(5)	15(4)	157(4)
BMF	1(14)	17(5)	0.8(156)	10(4)	3(42)	9(3)	46(3)	2(3)	3(3)	8(3)
CRP	3(44)	2(29)	2(70)	14(3)	1(121)	4(3)	16(3)	2(3)	7(3)	5(3)
TRP	0.1(25)	0.4(106)	2(142)	2(22)	1(141)	9(22)	7(22)	0	4(22)	0.3(24)
MCE	2(9)	5(28)	2(7)	30(7)	1(78)	23(7)	11(7)	0.1(17)	0.6(7)	9(7)
OTH	39(2)	5(1)	19(1)	8(2)	22(2)	116(1)	389(1)	132(1)	19(1)	394(1)
Total	251(25)	297(59)	210(226)	509(0.4)	146(98)	504(1)	2048(4)	340(-0.8)	376(0.8)	2256(3)
SCENARIO 4 (UNILATERAL)										
AGR	93(85)	49(-6)	9(142)	177(-9)	21(-3)	155(-8)	277(-10)	142(-10)	37(-9)	69(-10)
PAG	83(-4)	187(99)	160(386)	32(-4)	50(312)	42(-5)	46(-5)	22(-5)	154(-4)	353(-5)
BTP	0	0	0	0.3(0)	0	2(0)	0.1(0)	0.4(0)	0.6(-2)	1(0)
COG	19(2)	2(1)	3(17)	197(2)	12(64)	15(1)	57(2)	2(2)	123(2)	735(2)
PCP	0	0	0	0	0	0	0.3(8)	0	0.8(6)	0
TEX	2(56)	3(60)	3(109)	2(22)	0.4(242)	60(22)	25(22)	0.1(17)	1(22)	78(22)
CLO	0	4(203)	0	22(85)	0.4(1650)	50(86)	738(85)	36(86)	0.8(86)	716(83)
LMF	0.1(71)	15(96)	1(297)	14(20)	33(407)	45(20)	825(20)	8(20)	17(20)	180(20)
BMF	1(8)	16(-0.2)	1(147)	10(-1)	3(36)	9(-1)	44(-1)	2(-2)	3(-1)	7(-1)
CRP	3(44)	2(29)	2(69)	14(3)	1(121)	4(3)	16(3)	2(3)	7(3)	5(3)
TRP	0.1(25)	0.4(124)	2(159)	3(31)	1(157)	10(31)	7(31)	0	4(31)	0.3(32)
MCE	2(10)	5(29)	2(9)	30(8)	1(80)	23(8)	11(8)	0.1(17)	0.7(8)	9(8)
OTH	36(-6)	5(-6)	18(-6)	7(-6)	21(-6)	108(-6)	361(-6)	122(-6)	18(-6)	366(-6)
Total	240(19)	288(55)	201(213)	508(0.1)	145(96)	522(5)	2408(22)	337(-2)	368(-1)	2519(15)

Note: The figures are changes in trade flows in millions of U.S. dollars. Between parenthesis are percentage changes in trade flows.
Source: Author's simulation results.

6 Myanmar: A Simple Model to Assess Potential Benefits of AFTA

After a long period of economic stagnation under the policies of state socialism, Myanmar began market-oriented economic reforms in the late 1980s. Since then, Myanmar has partially liberalized economic activity and reduced obstacles to foreign trade and investment. While a set of economic reforms brought some economic growth in the early 1990s albeit from a very low level, Myanmar's current trade regime remains one of the most closed in the region. Some observers feel that Myanmar's recent accession to ASEAN put it on a path towards a more open economic system. However, assessments of Myanmar's accession to AFTA are particularly difficult due to the distortion of statistics resulting from the dual exchange rate system and a number of non-tariff barriers in the form of government controls.

For this study, a simple CGE model was developed to provide an initial indication of whether the benefits of AFTA might outweigh their costs. The model is deliberately minimalist in its data and software requirements to allow it to be implemented in countries with extremely limited data. Its structure, however, allows it to provide both numerical estimates and insights into the sources of benefits and costs from participation. Its simplicity allows it to be implemented on a standard Excel spreadsheet making only minimal demands on the very limited available information on behavioral parameters in Myanmar's economy. Section 6.1 summarizes Myanmar's trade regime. The direction of trade, composition of trade, tariff and NTBs are reviewed. Section 6.2 implements the simple general equilibrium model (CGE) to assess the key effects of Myanmar's AFTA accession and some alternative policies. Annex 6.A,B document the Excel model used for the simulations.

6.1 Myanmar's Trade Regime

Since Myanmar began to reform its economic policies, some key steps have included allowing the private sector to engage in external trade, and to retain part of export earnings.[66] From 1987 to 1991, the government embarked upon a program of agricultural liberalization, beginning to allow private domestic trading of agricultural surpluses and private exportation of all crops except rice. In 1988, border trade started to be legitimized, and the Foreign Investment Law was enacted to promote foreign direct investment. In response to these reforms, participation of the private sector in the economy increased, agricultural production grew, and trade increased rapidly.

However, after 1993, the pace of economic liberalization came virtually to a halt. As a result, the reforms so far have been incomplete and have failed to achieve a fundamental transformation of the economic system. During the mid-1990s, as liberalization faltered, so did export growth and GDP growth. While Myanmar achieved an average GDP growth rate of 6.8 percent during the period 1990-96, GDP has grown more slowly in recent years, at 5.7 percent in 1997/98 and 5.0 percent in 1998/99 (World Bank, 1999d).

[66] Since 1988, retention of foreign exchange earnings by exporters has been permitted, initially for 60 percent of export proceeds, and, since 1989, for the entire proceeds.

6.1.1 Recent Trends of Merchandise Trade

Figure 6.1 and figure 6.2 present recent trends in imports and exports respectively. Since the late 1980s, both exports and imports have grown substantially; By 1994/95, merchandise imports almost tripled from $0.5 billion in 1989/90 to $1.4 billion while merchandise exports doubled from $0.4 billion in 1989/90 to $0.9 billion in 1994/95. Since the mid-1990s, imports have expanded more rapidly than exports, resulting in increasing current account deficits.[67]

Figure 6.1 Composition of Merchandise Imports FY89/90-98/99

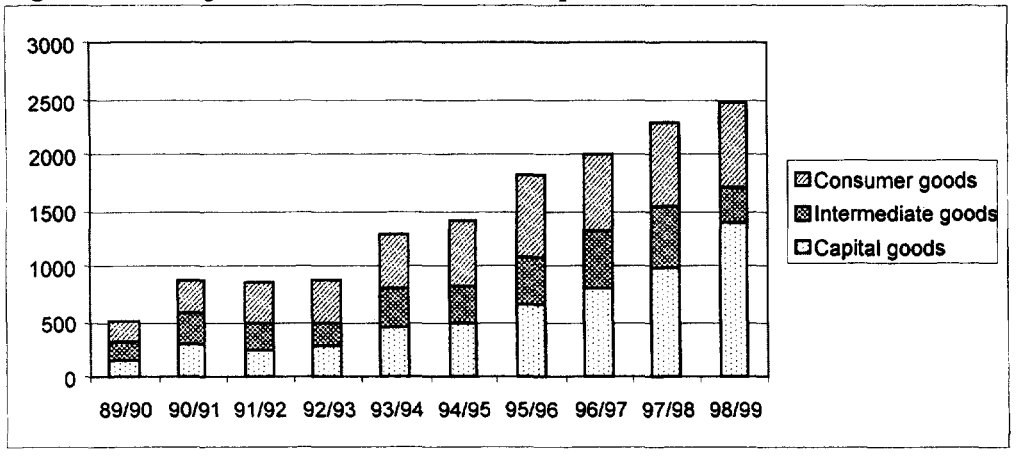
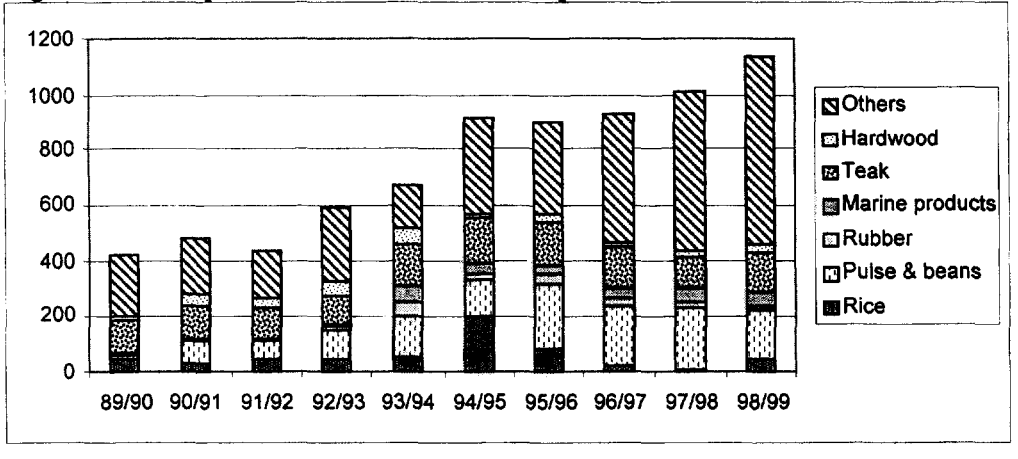


Figure 6.2 Composition of Merchandise Exports FY89/90-98/99



In millions of current US dollars
Source: World Bank 1999d

Estimated merchandise imports reached US$2.5 billion in 1998/99. Imports of intermediate goods seem to have been reduced by import restrictions in 1998/99. The government is seeking

[67] Since 1988, many bilateral and multilateral grants and loans have been haltered. The balance of payment deficits have been partially made up by concessional loans from China and Japan. Most recently, increases in workers' remittances and in domestic retention of narcotics export receipts may have financed the preponderance of the increase in the trade deficit. Quantifying narcotics exports is problematic and subject to large errors. *International Narcotics Control Strategy Report (INCSR)* published by the U.S. Department of State estimates that the potential exports of opiates accounted for about $1.2 billion in 1996 (US Embassy, 1997).

to promote domestic production of inputs such as edible oils and some industrial raw materials as part of its import substitution policy, and this may be a reason behind the relatively slow rise in imports of intermediate inputs (EIU, 1999).

Merchandise exports grew to an estimated US$1.2 billion in 1998/99. The composition of exports has been dominated by agro-forestry products and there has, to date, been little diversification away from these products.[68] The performance of the agricultural sector has been closely linked to the government policies. The liberalization of agricultural pricing and marketing in 1987-88 undoubtedly increased the prices being received by farmers, and contributed to the main change in the pattern of exports. For instance, pulses and beans accounted for almost a quarter of recorded merchandise exports by the mid-1990s, jumping from 4 percent in 1989/90. However, in 1995/96, the value of merchandise exports declined for the first time since 1989 primarily because of a decrease in rice exports. The government curtailed rice exports in a deliberate bid to reduce domestic price pressures caused by the poor harvest in 1996, and the worst flood for at least 30 years in 1997. Rice exports rose in 1998/99, partly due to the partial liberalization of rice (see below) but remained far below the 1994/95 level.

The share of private transactions increased steadily, rising from 39 percent for imports and 37 percent for exports in 1989/90 to 67 percent and 69 percent in 1998/99 respectively (World Bank, 1999d). However, in 1998/1999, imports by the state sector rose much more rapidly than by the private sector, reflecting the state sector's greater access to scarce foreign exchange and possibly weak enforcement of the new import restrictions (EIU, 1999).

6.1.2 Directions of Trade

Figures 6.3 and 6.4 present Myanmar's imports by source and exports by destination for 1996. Figure 6.3 highlights the importance of Asian countries as sources of Myanmar's imports, registering 86 percent of its total imports. ASEAN alone provided 51.5 percent of imports with Singapore being the largest supplier to Myanmar (27 percent), followed by Thailand (12 percent), Malaysia (9 percent), and Indonesia (3 percent). The shares of China and Japan were also important registering 20 percent and 10 percent respectively.

Figure 6.4 shows that Myanmar's exports are also concentrated in Asian countries, which account for 69 percent of its total exports. The share received by ASEAN countries was 38.4 percent in 1996. Thailand received the largest proportion of Myanmar's exports (15 percent) followed by Singapore (12 percent), Indonesia (6 percent), the Philippines (3 percent), and Malaysia (2 percent). Myanmar's two largest non-Asian export markets were the EU (7 percent) and the USA (7 percent).

However, Myanmar's exports have recently suffered from losses of trade and investment privileges in a number of Western countries. In March 1997, Myanmar lost Generalized System of Preferences (GSP) benefits on its exports of agricultural products to the EU --

[68] Agriculture generated about 63 percent of employment and about 59 percent of GDP in 1997/98 (World Bank, 1999d).

Figure 6.3 The Sources of Myanmar's Imports in 1996

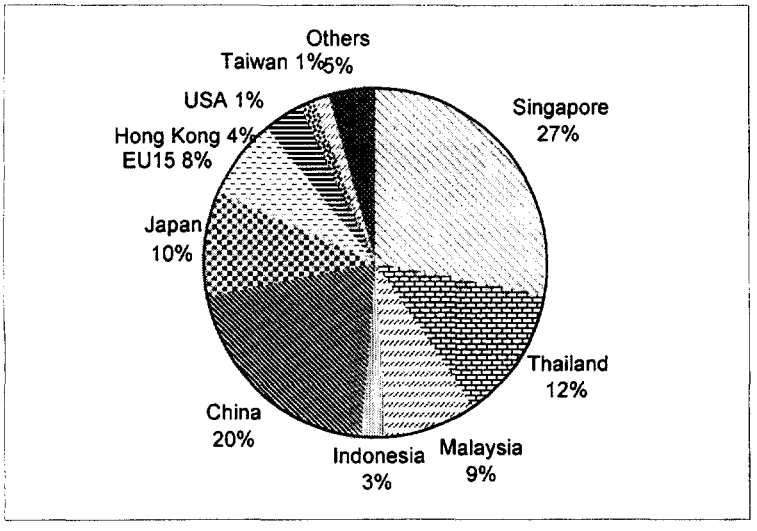
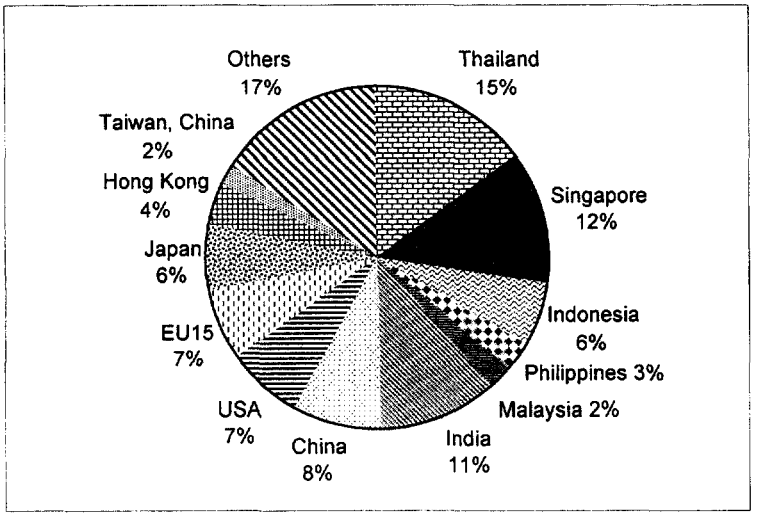


Figure 6.4 The Direction of Myanmar's Exports in 1996



Source: IMF (1997a); Thailand figures were taken from the 1995 UN COMTRADE System.

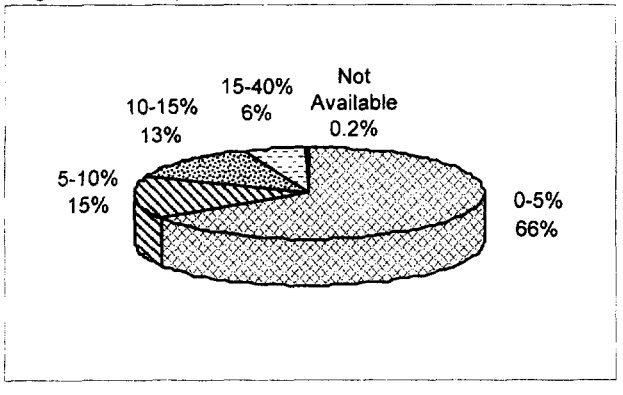
it had already lost GSP benefits on industrial goods.[69] In 1997, the USA banned all new investments in Myanmar by US companies and these sanctions were renewed in May 1999. A number of US cities has introduced selective purchasing laws, excluding firms that trade with Myanmar from public-sector contracts. The decision to allow the entry of Myanmar into ASEAN has reportedly been based on the principle of "constructive engagement" with the objective of contributing to the transformation of Myanmar into a more open society through increasing trade, investment, and economic relations.

[69] The Community GSP scheme was introduced in 1971 with the aim of helping developing countries to industrialize and diversify their exports. The GSP benefits applying to the least developed countries are more favorable than those applying to other countries. These special arrangements consist of complete exemptions from duty for industrial products and admission of a wide range of agricultural products under zero-duty rates. The EU withdrew access to GSP for goods from Myanmar primarily because of concerns on human rights grounds about forced labor practices.

6.1.3 Tariff and Nontariff Barriers (NTBs)

Under recent reforms, Myanmar's tariff rates have been substantially reduced. Under the old system, there were 23 import tariff rates ranging from zero to 500 percent. Effective June 1, 1996, tariff rates were reduced to a range from zero to 40 percent. At the same time, a new customs valuation exchange rate of 100 kyat per U.S. dollar was introduced in place of the official exchange rate of 6 kyat per U.S. dollar (IMF, 1997b). A range of exchange rates -- between 120 and 200 kyat per U.S. dollar -- is used to derive the "assessable" value of an imported commodity, but the exact modalities of Customs valuation are not transparent (World Bank, 1999d). With the market exchange rate at around 340 kyat per dollar, this valuation considerably reduces the effective tariff rate. Following the reforms, Myanmar's tariff schedule consists of 5,464 tariff lines with tariff rates ranging from 0 to 40 percent.[70] Figure 6.5 shows that about two thirds of tariff lines belong to the 0-5 percent range. Myanmar's simple average tariff as submitted to the WTO is 5.8 percent (WTO/World Bank, 1997).[71] These figures imply that Myanmar's tariff protection is low relative to the other ASEAN countries.

Figure 6.5 Myanmar's Tariff Ranges



Source: WTO/World Bank (1997).

In contrast, nontariff barriers (NTBs) that impose a number of constraints to external trade exist. On the import side, the government continues to control imports through licenses and composition controls. For each transaction, import licenses must be obtained for priority items (List A) and non-priority items (List B). An importer wishing to import items from List B is generally required to import goods from List A with a value equivalent to 80 percent of the values of goods on List B.[72] Although it is extremely difficult to accurately assess the restrictiveness of such a measure, it appears likely to increase substantially the costs involved in importing.

[70] 3,405 tariff lines belong to the 0.1-5.0 percent tariff band and 821 tariff lines cover 5.1-10.0 percent tariff range. 721, 298, and 16 tariff lines belong to 10.1-15.0 percent, 15.1-35.0 percent, and 35.1-40.0 percent respectively. 203 tariff lines are duty free and *ad valorem* tariff rates of 9 tariff lines are not available (WTO/World Bank, 1997).

[71] Myanmar has been a WTO member since 1995, and a GATT member since 1948.

[72] Under the Ministry of Commerce Order No. 4/98, imports were reclassified into "list A essential items" and "list B essential items." Importers should first apply for essential items in list A and only after their arrival, an application for importing essential items in list B shall be lodged (Government of Myanmar, March 1998). However, soft drinks,

On the export side, state enterprises monopolize leading traditional exports including rice, sugar, cotton, petroleum, precious stones and metals.[73] Rice is the crop most extensively covered by state restrictions on production, procurement and exports.[74] The government continues to own all farmland, to procure rice below market prices, and to monopolize the export marketing of all rice except that from private agricultural estate projects.[75] These government restrictions constitute an implicit tax on farmers. A recent World Bank study estimated that farmgate prices are substantially below world prices at around 35 percent less than the f.o.b. price (World Bank, 1999d). The current policy of compulsory rice procurement, under which farmers are forced to sell a significant portion of their rice crop to the state at well below market prices, results in disincentives to rice production. Further rice export liberalization is likely to give farmers a price incentive to increase rice production and to shift production towards higher-value grades of rice.

Exchange Rate Policies

The dual exchange rate system remains one of the most serious impediments in Myanmar's trade regime. Figure 6.6 presents the change in official and parallel exchange rates for the period 1989-1999. The Government has maintained an official exchange rate pegged at about 6 kyats/US dollar throughout the period. The parallel exchange rate stabilized somewhat in the early 1990s, but deteriorated after 1996/97 following the regional currency crisis. Since mid-1997, the pressure on the kyat and severe foreign exchange shortages have forced the Government to introduce a number of administrative measures to tighten foreign exchange control. As of 1998/99, the parallel market rate was about 340 kyats per U.S. dollar.

Finally, the overvaluation of the official exchange rate is a serious constraint for tradables especially for the private sector. While the private sector is allowed to undertake external transactions at the parallel market, the official rate still applies to public sector transactions. As a result, a complex exchange rate system exists, which segments the market for foreign exchange between the private and public sectors. Given the extreme shortages of foreign exchange at the official rate, the large excess demand for imports can only be maintained by rationing the available foreign exchange. This, in turn, facilitates rent-seeking activities such as importing goods purchased at the official exchange rate for sale at a price based on the parallel of exports.

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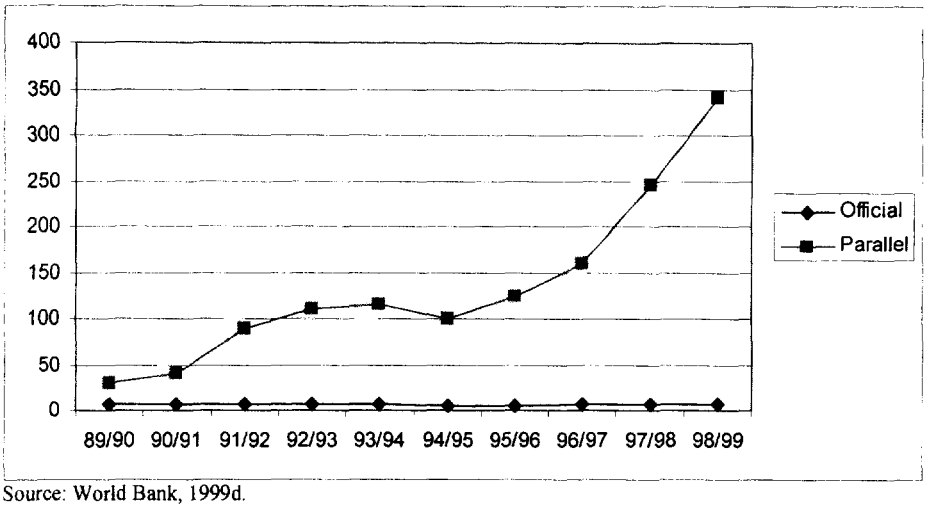
biscuits, canned food, alcohol, fresh fruits and some other goods are not included in either list, and hence banned from imports.

[73] Ministry of Commerce Order No. 6/98 classified the following items as "non-export" items: rice, sugar, molasses, sesame and sesame oil, groundnut and sesame expeller cake, gram, petroleum, gems, gold, jade, pearl, diamond, lead, wolfram, tungsten, silver, bronze, zinc, coal, other metals, ivory, buffalo, elephant, horse and other rare species, prawn powder, munitions, antiquities, rubber, cotton for both normal and border trade. Teak is banned only for border trade (Government of Myanmar, March, 1998).

[74] Rice production is the largest industry in Myanmar, accounting for roughly between a quarter to a third of the GDP.

[75] Under the land reclamation program that began in October 1998, the government has decided to develop large tracts of land to be farmed by private enterprises. As a part of the program to encourage private sector participation in agriculture, project investors may export a half of their products (rice and other restricted crops, except edible oil seeds) and are exempted from the rice procurement system (World Bank, 1999d).

Figure 6.6 Official and Parallel Exchange Rate FY89/90-98/99



Source: World Bank, 1999d.

Furthermore, the use of the official rate for the calculation of some official data distorts substantially economic statistics especially those involving international transactions.[76]

6.2 Modeling Approach

This section presents a very simple modeling approach that can be used to provide insights into the impacts on a small country of participation in a regional trade bloc. Its data and software needs are minimal but it is able to generate useful insights into the welfare effects of trade creation and diversion, and the benefits of using regional trade bloc membership as a stepping stone for further liberalization.

6.2.1 Model Structure

A simple model was developed for Myanmar in the spirit of so-called "1-2-3 model" with one country, two producing sectors and three goods (Devarajan, Go, Lewis, Robinson, Sinko, 1994). The two commodities that the country produces are: (1) an export good, Q_x, which is sold to foreigners and (2) a domestic good, Q_d, which is only sold domestically. The third good is an import, Q_m, which is not produced domestically. There is one homogeneous household who receives all income. The country is small in world markets, facing fixed world prices for exports and imports. This application extends the 1-2-3 approach by distinguishing between different trading partners on the import and export sides.

[76] For instance, exports and imports as a percentage of GDP are very low at 1.0 and 1.7 percent respectively at official exchange rate whereas exports are 35 percent and imports are 60 percent of GDP at parallel market exchange rates. The true values are probably somewhere in between these two extremes (World Bank, 1999d).

A 1-2-3 Model

The key concept of the 1-2-3 model is shown graphically in Figure 6.7. A transformation function showing the best combinations of export and nontraded goods that can be produced in the economy is depicted in the fourth (south-east) quadrant of the four-quadrant diagram in Figure 6.7. For any price ratio P_d/P_x, the point of tangency with the transformation frontier determines the amounts of the domestic and exported good that are produced. If the foreign capital inflows are zero, the balance of trade constraint is a straight line through the origin, as depicted in the first quadrant of Figure 6.7. Non-zero capital inflows can be accommodated by shifting the line above or below the origin. Setting all world prices equal to one by choice of units, the slope of this line is one. With fixed foreign capital inflows, the only source of additional foreign exchange is exports. Thus, the balance of trade constraint determines how much of the imported good (Q_m) the country can buy for a given level of exports produced (Q_x).

The second quadrant shows the consumption possibility frontier, which represents the combinations of the domestic and imported good that the consumer can buy, given the production technology as reflected in the transformation frontier and the balance of trade constraint. When world prices are equal and trade is balanced, the consumption possibility frontier is a mirror image of the transformation frontier. This quadrant also contains a community indifference curve showing the combinations of imported and domestic goods that would leave a representative consumer equally well off. The tangency of the indifference curve and the consumption possibility frontier will determine the amount of Q_d and Q_m that the consumer will demand, at price ratio P_d/P_m. The economy produces at point P and consumes at point C.

Now consider what would happen if the government imposes import tariffs. The results are shown in Figure 6.8. Consumers substitute domestic goods for imports and the consumption point moves from C to C′ with lower consumption of imports. The increase in demand for the nontraded good increases its price relative to the prices of traded goods—a relative price change frequently termed as a real exchange rate appreciation. On the production side, the relative price has shifted in favor of the domestic goods and against the exports. The new equilibrium is P′. Now domestic goods are more profitable relative to exports, this attracts resources away from exports and into nontraded goods. We would expect domestic prices to rise relative to world prices and the tradable sector to contract relative to the nontraded sector. Our analysis with the 1-2-3 model shed light on how protection (liberalization) on the import side brings about a decrease (increase) in exports through the real exchange rate appreciation (depreciation).

The relationships depicted in Figure 6.7, which characterize the 1-2-3 model, must be augmented by relationships characterizing substitution between imports from different sources, and the allocation of exports to different destinations. Imports from different sources are represented as imperfect substitutes, for which changes in prices are required to change market shares. Similarly, changes in export destinations are specified as requiring changes in output prices. The specification of the equations and the selection of parameter values are presented in Annex 6.A. The implementation of the model is documented in Annex 6.B.

Social Accounting Matrix (SAM)

A social accounting matrix (SAM) was constructed to provide a consistent characterization of the key value flows in Myanmar's economy. Each flow was categorized as a value flow from an agent in the left hand column of Table 6.1 to a recipient in the top row. A key feature of the SAM is that income always equals expenditure for the economy as a whole. In Table 6.1, expenditures appear along the rows, and incomes down the columns; thus the budget constraints require that the row sum (expenditure) must equal the column sum (income) and the overall SAM enforces consistency on the economic flows represented in the data. Through the process known as "calibration", the individual value flows in the SAM can be used to generate many of the key parameter values.

Table 6.1 Social Accounting Matrix (SAM) for Myanmar

Expenditures	Receipts							
	Producer	Household	Importer	Exporter	Government	Trading partner 1-3	Customs, 1-3	Financial Inflow
Producer		Value added		Exports				
Household	Consumption of domestic goods =domestic sales		Consumption of imported goods					
Importer						Imports, cif	Import tariff	
Exporter							Export tax	
Government		Trade Tax Transfer						
Trading Partner 1-3	Exports							
Customs 1-3					Trade Tax			
Financial Inflow		Foreign Savings						

In the producer account, we specify that total income derives from domestic sales and exports. The value added created by productive activities is paid to the representative household, which also receives transfers from the government and foreign transfers. The household account shows that the household, in turn, allocates its total receipts between consumption of domestic goods and imports. The role of government is very small in this stylized, trade-focussed model, with the government being responsible only for collecting the revenues associated with protection, and redistributing them to the household. The financial inflows considered are very broad, and include all of those financial inflows not resulting from the returns to factors resident in Myanmar—including foreign direct investment, portfolio investment, loans, net factor service income, and grants.

Figure 6.7 Free Trade

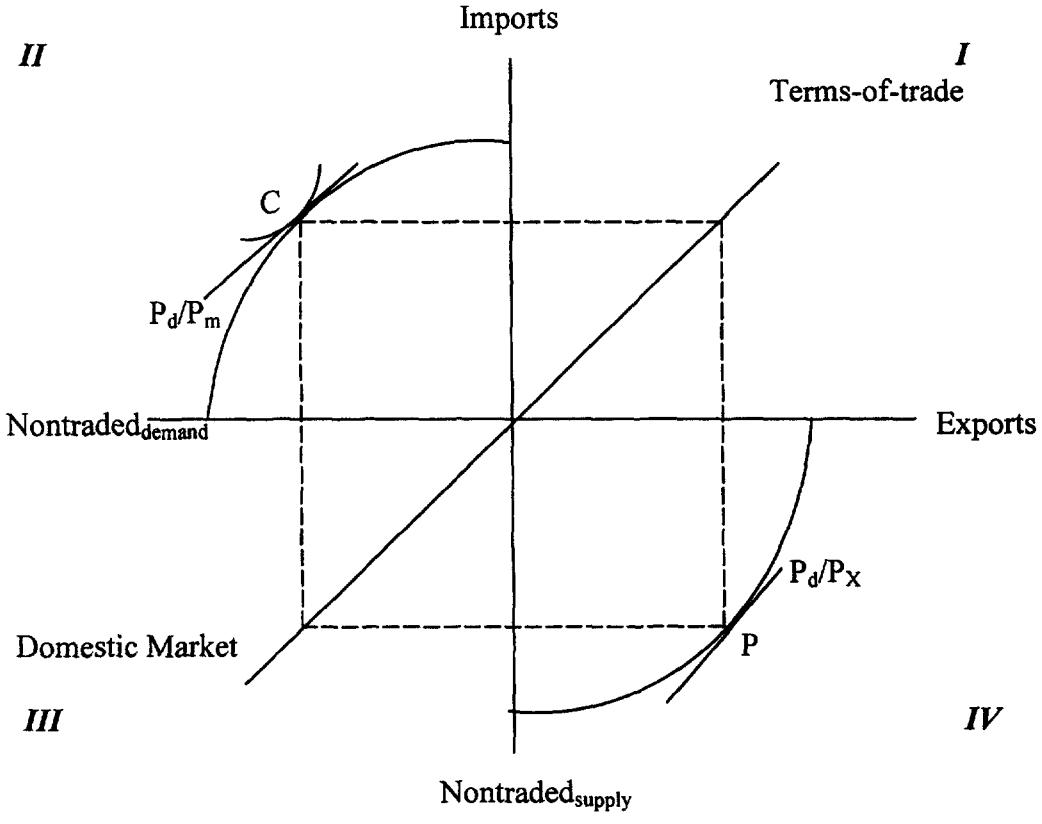
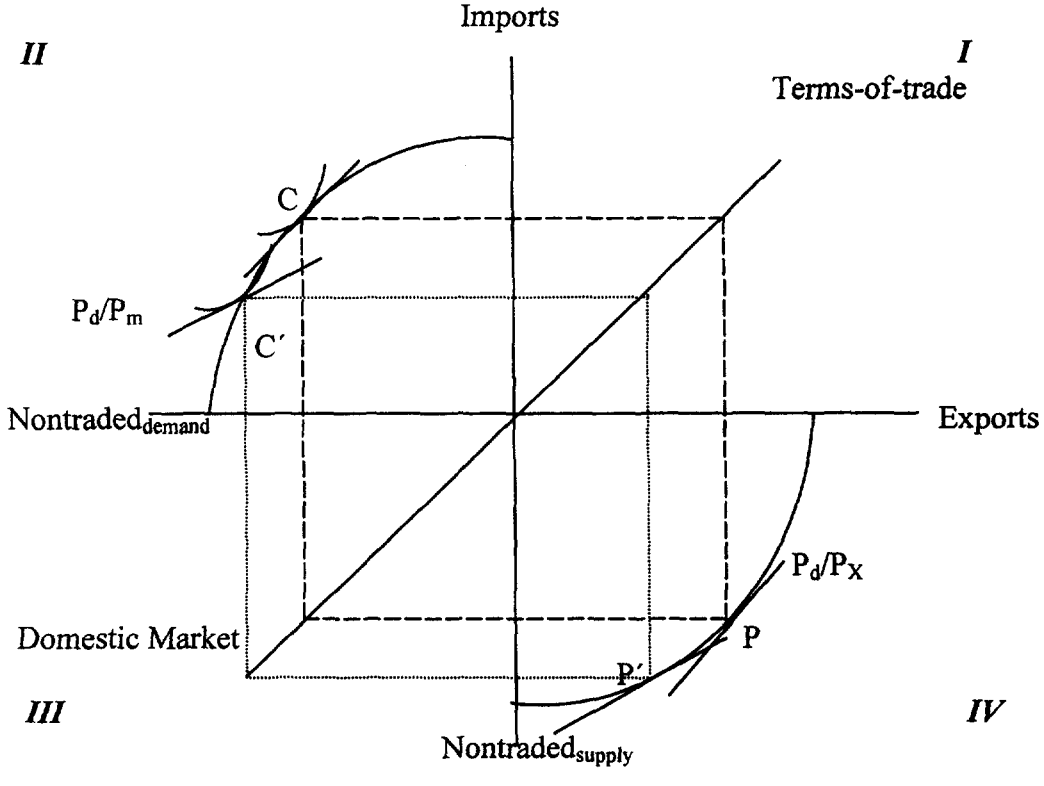


Figure 6.8 Import Tariff



6.2.2 Data

Myanmar's national accounts from national sources are distorted by the government's practice of converting foreign-currency-denominated transactions into kyat at the official rate, a practice which substantially undervalues external sector transactions. For our baseline representation of the economy, national accounts figures for the year 1995/96 published by IMF were used after adjusting foreign exchange components.[77] The exchange rate adjusted GDP of 690.9 billion kyat 1995/96 was used for the analysis is about 13 percent higher than the official GDP figures of 613.2 billion (IMF, 1997b).

Similarly, the market exchange rates were used for the re-valuation of imports and exports. For importers, it is assumed that the opportunity cost of all imports is, at the margin, the secondary-market rate. If an enterprise has less foreign exchange than it demands, it must purchase additional foreign exchange in the secondary market. If it initially has more foreign exchange than it requires, its opportunity cost of using foreign exchange is also the secondary-market rate (Martin, 1993). Thus, we simply use the market exchange rate for the conversion. In exporting, the nominal returns received by exporters depend upon the foreign currency price received, the rate of any export tax, and the share of foreign exchange earnings that enterprises are allowed to retain for sale on the parallel market. The higher the retention rate, the larger the weight on the secondary market and, hence, the higher the domestic currency price of exports. Given the policy of 100 percent foreign exchange retention reportedly now being applied in Myanmar, we simply apply the market exchange rate to export transactions. We compute the share of the ASEAN countries, the EU, and the rest of the world in Myanmar's total imports and exports based on the figures of *Direction of Trade Statistics Yearbook 1997* for 1996 (IMF, 1997a).[78]

6.2.3 Results

Simulation A — AFTA Reform

A simulation exercise for Myanmar reducing its tariff rates under the AFTA plan is implemented below. A key feature of the CEPT is that the concessions are granted on a "reciprocal", product by product basis. Thus, the impacts of AFTA follow from both the liberalization undertaken by Myanmar, and the increased market access given by its ASEAN partners.

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[77] In these figures, imports, exports and the import content of domestic investment and consumption were valued using market exchange rates. Following the IMF, the foreign exchange portion of consumption and investment were assumed to be 9.7 percent and 58 percent of total consumption and investment respectively (IMF, 1997b).

[78] There are discrepancies between the government data and *IMF Direction of Trade* Statistics. We used the *IMF Direction of Trade* statistics to compute the share of each country group due to the wider coverage of countries. However, the total trade figures adjusted by the exchange rates were taken from a government source in order to maintain the consistency with the other national income data. In 1996, the shares of ASEAN in Myanmar's imports and exports were 52 percent and 38 percent respectively.

In the absence of detailed tariff and trade information from Myanmar, import protection rates were set at 5.8 percent, which is the simple tariff average reported to WTO. Under the AFTA plan, the tariff rates of Myanmar are assumed to be reduced to 2.5 percent which is the mid-point of the AFTA requirement of 0-5 percent. The fall in the price of imports from ASEAN increases imports from ASEAN (*trade creation*) whereas this also causes consumers to substitute away from the goods supplied by the rest of the world (*trade diversion*). On the export side, the liberalization by Myanmar's trading partners raises the prices received by Myanmar's exporters, and improves Myanmar's terms-of-trade and welfare. The current protection rates of the ASEAN partner countries are set at 7.5 percent which is assumed to be reduced to 1.7 percent under the AFTA plan.[79]

Key results of the AFTA experiment are given in Table 6.2. The first two columns of the table show the effect of Myanmar's import liberalization, the second two the effect of liberalization by Myanmar's trading partners, and the third two the combined impact.

With the import liberalization resulting from Myanmar's tariff reduction against ASEAN partners, the fall in the price of imports from ASEAN increases imports from ASEAN (trade creation effect). This causes consumers to substitute away from the goods supplied by the rest of the world, creating a trade diversion effect. Imports from ASEAN (Q_{mas}) increase by 5.5 percent while imports from other trading partners (Q_{meu} and Q_{mr}) fall by 4.0 percent. Total imports (Q_m) increase by 0.8 percent. The combination of a fall in the price of imports and a fall in the price of nontraded goods leads to downward pressure on the overall level of consumer prices, lowering the consumer price index (P) by 1.1 percent. A consequence of trade liberalization is the depreciation of the real exchange rate (P_d), or a reduction in the price of nontraded goods relative to world prices. The increase in exports (Q_x) by 1.4 percent can be explained partly because the fall in the price of nontraded goods increases the incentive to export, and partly because the increase in imports needs to be financed by the increase in exports.

The welfare gains (u) are relatively small, 0.03 percent of total expenditure (or 0.03 percent of GDP) since the gains from the increase in imports are in part offset by the decrease in tariff revenue (Trevm). This is a classic case, where the welfare gains from additional trade creation are offset by the costs of trade diversion towards more costly within-region suppliers. However, the loss of import tax revenues is partially offset by the increase in export tax revenues (Trevx) since each additional unit exported yields a *second-best* welfare gain equal to the export tax. Overall, trade tax revenues (Trev) decrease by 14 percent. The very small welfare impact reflects both the offsetting natures of the trade creation and trade diversion as well as the low initial tariff level in Myanmar. The next two columns in Table 6.2 show the results of export liberalization resulting from ASEAN partners' tariff concessions. Exports to ASEAN (Q_{xas}) increase by 12.4 percent and total exports (Q_x) increase by 1.0 percent. As expected, revenue from exports (Revx) is higher by 2.9 percent from the baseline partly due to the increased trade volume (Q_x) and partly due to the increased price in exports (P_x). The increase in foreign exchange availability enables Myanmar to import more, resulting in an increase in imports (Q_m) of 1.6 percent. This yields increases in import tariff revenues (Trevm) and export tariff revenues (Trevx) of 1.6

[79] The current protection rates of ASEAN partners are computed by averaging the weighted average tariff rates scaled by Myanmar's export share to each countries. Under the AFTA plan, we assume that Thailand, the Philippines, and Indonesia will reduce their tariff rates against Myanmar's exports to 2.5 percent whereas the protection of Singapore remains zero.

percent and 0.9 percent respectively. In contrast with the case of trade creation on the import side, no offsetting welfare loss to Myanmar from trade diversion needs be considered. The increasing supply to the export markets implies a reduction of supply in the domestic market which in turn imposes upward pressure on the consumer price index (P), which rises by 0.9 percent. The real exchange rate (P_d) appreciates by 1.3 percent relative to the unchanging price of imports from non-partner countries. Overall, real expenditure (u) increases by 0.3 percent from the baseline or 0.39 percent of GDP.

The last two columns in Table 6.2 show the results of the combined effects of import liberalization and export liberalization. The results imply that the overall impacts of Myanmar's accession to AFTA are beneficial. The gains come primarily from the terms-of-trade gains that result from improved access to ASEAN markets. The welfare gain is measured by the potential increase in real expenditure of 0.37 percent, or 0.42 percent of GDP. Both imports and exports increase by 2.5 percent. The effects on the real exchange rates (P_d) cannot be predicted from theory since the effects of import liberalization and export liberalization work in opposite directions. The end result in this simulation is that the real exchange rate appreciates by 0.4 percent from the baseline. Trade tax revenues increase slightly relative to the import liberalization alone since the increased trade leads to higher tax collections.

However, considerable caution is needed in interpreting the results since the simulations consider only the effects of the tariff cuts. Besides tariff reductions, another important feature of AFTA is that the member countries are required to eliminate quantitative restrictions on products upon immediate enjoyment of CEPT concessions and to eliminate other non-tariff barriers within five years after receiving concessions. The elimination of NTBs by Myanmar and its ASEAN partners is likely to increase substantially the benefits of AFTA to Myanmar. It is particularly important for Myanmar's agricultural exports since NTBs on agricultural products have continued to be important in ASEAN.[80]

Simulation B — Alternative Policies

This section simulates some alternative policies: 1) liberalization on a nondiscriminatory basis, and 2) the effects of export tax removal. The results of alternative policies are presented in Table 6.3 along with the summary results of the AFTA simulations.

With its AFTA commitments in place, a key question for Myanmar is whether it should leave its current protection against other trading partners in place, or continue with further unilateral liberalization. To address this question, a simulation was implemented assuming that Myanmar reduces the tariff rates to 2.5 percent under AFTA and then extends the same liberalization to all of its trading partners. Column 2 of Table 6.3 presents the results of this non-discriminatory liberalization scenario. The benefits of complete trade liberalization for Myanmar are larger than those from joining AFTA only, because unilateral liberalization unwinds the welfare losses arising from trade diversion under the regional arrangement.

[80] See footnote 16.

Table 6.2. Impacts on Myanmar of the AFTA

Endogenous Variables			Import Liberalization		Export Liberalization		AFTA Total	
			Myanmar Reduces Tariff to 2.5 Against ASEAN		ASEAN Reduces Tariff to 2.5 against Myanmar's Exports		Import and Export Liberalizations Combined	
Variable	Description	Base Values	Sim Results	% Change	Sim Results	% Change	Sim Results	% Change
e	Expenditure	782651	774133	-1.1	792098	1.2	783488	0.1
Qd	Quantity of domestic goods	538981	537182	-0.3	537703	-0.2	535889	-0.6
Qm	Quantity of imported goods	243670	245685	0.8	247669	1.6	249721	2.5
P	Consumer price index	1.00	0.99	-1.1	1.01	0.9	1.00	-0.3
Em	Import expenditure	243670	241659	-0.8	247669	1.6	245630	0.8
Pm	Domestic price of imports	1.00	0.98	-1.6	1.00	0.0	0.98	-1.6
Qmas	Quantity of imports from ASEAN	125490	132381	5.5	127549	1.6	134556	7.2
Qmeu	Quantity of imports from EU	18519	17769	-4.0	18823	1.6	18061	-2.5
Qmr	Quantity of imports from the rest of the world	99661	95626	-4.0	101296	1.6	97198	-2.5
Rev	Revenue from production	663705	658990	-0.7	672806	1.4	668064	0.7
PO	Producer price	1.00	0.99	-0.7	1.01	1.4	1.01	0.7
Pd	Price of nontraded goods	1.00	0.99	-0.9	1.01	1.3	1.00	0.4
Qx	Quantity of exports	124724	126516	1.4	125998	1.0	127793	2.5
u	Utility Index (Real expenditure)	782651	782859	0.03	785352	0.3	785558	0.4
Trev	Trade tax revenue (Import plus export tax)	27195	23392	-14.0	27541	1.3	23673	-12.9
Revx	Revenue from exports	124724	126516	1.4	128376	2.9	130205	4.4
Px	Price of the composite export goods	1.00	1.00	0.0	1.02	1.9	1.02	1.9
Qxas	Quantity of exports to ASEAN	47894	48582	1.4	53850	12.4	54618	14.0
Qxeu	Quantities of exports to EU	8357	8477	1.4	7833	-6.3	7945	-4.9
Qxr	Quantities of exports to the rest of the world	68474	69457	1.4	64188	-6.3	65102	-4.9

Causally Posterior Equations		Base Values	Import Liberalization		Export Liberalization		AFTA Total	
Trevm	Import Tax Revenues	13336	9335	-30.0	13555	1.6	9488	-28.9
Trevx	Export Tax Revenues	13858	14057	1.4	13986	0.9	14185	2.4

Source: Authors' simulation results.

However, the increase in welfare gains is relatively small, reflecting already low *initial* tariff rates in Myanmar and the high share of the ASEAN countries in the Myanmar's total imports. Again, the result reflects only the impacts of Myanmar's tariff reductions. If other, less visible, trade barriers that appear to exist in Myanmar were eliminated, the effects of non-discriminatory liberalization would be substantially larger.

Table 6.3 Key Results of the Alternative Policies

	AFTA Liberalization (Summary Statistics)	Nondiscriminatory Liberalization	Export Tax Removal
	(%)	(%)	(%)
Total Imports	2.5	3.3	5.5
Imports from ASEAN	7.2	3.3	5.5
Imports from ROW	-2.5	3.3	5.5
Total Exports	2.5	3.7	9.2
Exports to ASEAN	14.0	15.5	9.2
Exports to ROW	-4.9	-3.7	9.2
Trade Tax Revenues	-12.9	-25.3	-48.3
Consumer prices	-0.3	-1.3	3.5
Producer prices	0.7	0.03	6.3
Real Exchange Rate	0.4	-0.4	5.2
Real Income	0.37	0.41	0.17
% of GDP	0.42	0.46	0.20

Source: Authors' simulation results.

Finally, an experiment was conducted to investigate the broad implications of eliminating the government's monopoly in the leading export commodities. As a result of the government's controls, farmgate prices are believed to be depressed as a means to transfer income from farmers to urban consumers. For want of better information, we assume that these restrictions are equivalent to a 10 percent export tax. Column 3 of Table 6.3 shows the results of a simulation removing the implicit export tax. The resulting increase in the export price of 11 percent leads to an increase in exports by 9.2 percent. The indirect consequence of export liberalization would be an increase in domestic prices relative to export prices. The increasing supply to the export markets results in a reduction in the supply to the domestic market which, in turn, pushes the consumer price index up by 3.5 percent. Producers of the commodities currently under the government's restrictions gain substantially, with an overall increase in producer prices of 6.3 percent. The increase in imports of 5.5 percent is partly because domestic goods are now more expensive relative to imports and partly because the increase in exports provides foreign exchanges to finance imports. Welfare increases by 0.17 percent of initial expenditure, or 0.2 percent of GDP.

6.3 Conclusions

The recent accession by Myanmar to ASEAN/AFTA provides an opportunity for Myanmar to benefit significantly from its own policy reforms and from improved market access in ASEAN markets. In particular, AFTA is likely to offer substantial potential for Myanmar's agricultural exports through reductions in both tariff protection and NTBs in

its ASEAN partner countries. A series of simulation analyses was conducted using a stylized simple general equilibrium model. Our model is simple and the results are qualitative indicators rather than realistic forecasts. However, the results shed some lights on the general implications of Myanmar's AFTA accession and the choice of alternative policies within this context.

The results showed that Myanmar's accession to AFTA is economically beneficial. On the import side, tariff reductions provide gains from trade creation that are only partially offset by the costs of trade diversion associated with reductions in imports from partner countries. However, the gains from cutting the tariffs alone are very small. This is because Myanmar's reported tariff rates are already low which implies that the marginal benefits of reducing tariffs are relatively small. In addition, the gains resulting from trade creation are partially offset by decreasing tariff revenues on imports from other markets. Most of the gains from AFTA accession come from the improvements in the terms-of-trade resulting from tariff cuts in partner countries. It is likely that the magnitude of the gains would increase substantially over the levels reported in this study, if both Myanmar and its partners eliminated nontariff barriers in addition to cutting tariffs.

Two alternative simulations were also implemented. A simulation of nondiscriminatory liberalization shows that Myanmar gains if it expands the tariff reduction to all of its trading partners. This is because this broader-based liberalization unwinds the welfare losses arising from trade diversion. Finally, a simulation of removing the export tax implies that Myanmar gains in economic efficiency if restrictions on its exports are eliminated. Many of the producers of these commodities are relatively poor farmers who gain substantially from higher prices if these restrictions are lifted.

Annex 6.A Equations of the Model[81]

Production Behavior

In the absence of an input-output table for Myanmar, only a single domestically-produced commodity is included in the model. The production sector is represented by a production possibility frontier that specifies the choice for producers between the domestic and export markets. Assuming that the production technology is of the Constant Elasticity of Transformation (CET) form, the curvature of the production possibility frontier is represented by a single CET parameter, σ_T.

Mathematically, the production possibility frontier can be represented by a CET revenue function:

$$1.\quad Rev = [\beta_d p_d^{(1+\sigma_T)} + \beta_x p_x^{(1+\sigma_T)}]^{1/(1+\sigma_T)}.Q$$

where p_d is the price of the domestic, nontraded good; p_x is the price of the composite export good; β_d and β_x are share parameters; σ_T is the elasticity of transformation between domestic and export output; and Q is the overall resource endowment of the economy.

Differentiating equation 1 with respect to the price of either of the outputs gives us the supply curves for each type of output as a function of the size of the economy and relative prices:

$$3\text{-}4.\quad Q_i = \beta_i .(p_i/ p_o)^{\sigma_T}. Q \qquad \text{(i = domestic, exports)}$$

where p_o is the composite price of output, such that

$$2.\quad Rev = p_o.Q$$

By the expedient of setting all prices initially to unity, the β_i parameters can be identified as the base-period shares of domestic and nontraded goods in the value of output in the economy. This process of calibration allows us to construct all of the supply equations of the model with base value data and just one behavioral parameter, the elasticity of transformation. The elasticity of transformation is related to the elasticity of export supply by the relationship $\eta_x = (1 - S_x).\ \sigma_T$, where S_x is the share of exports in production revenue. Many models, such as typical macroeconomic models, assume that the elasticity of transformation between domestic and export markets is infinite, although the empirical evidence suggests that this elasticity is considerably lower. Based on the extremely limited available evidence (see, for example, Goldstein and Khan 1985), we assign a value of 2.0 for this elasticity of transformation.

[81] The numbers of equations 1-20 correspond to those in the spreadsheet model in Annex 6.B.

Export Response

Because different export markets require different mixes of products, impose different product standards, and involve different production and transport requirements, we assume that exporters are not indifferent to the markets that they supply. Under these circumstances, shifting the composition of exports from one market to another will require changes in the prices received for exports. We represent the willingness and ability of Myanmar exporters to adjust between export markets by using a CET revenue function (*Revx*) ranging over three export markets: Myanmar's ASEAN partners, the European Union, and the rest of the world.[82]

$$5.\ Revx = [\sum_{i=1}^{3} \beta_{xi}\ p_{xi}^{(1+\sigma_d)}]^{1/(1+\sigma_d)}.Q_x \qquad \text{(i = asean, eu, row)}$$

where p_{xi} is the price of exports for each destination; βx_i is the share of exports; σ_d is the elasticity of substitution between export markets; and Qx is the overall exports.

Differentiating equation 5 with respect to the price of either of the exports gives us the export supply curves for each destination of exports as a function of the size of the exports and relative prices:

$$6\text{-}8.\ Qx_i = \beta_{xi}.(p_{xi}/p_x)^{\sigma_d}.Q_x \qquad \text{(i = asean, eu, row)}$$

where p_x is the composite price of exports, such that

$$9.\ Revx = p_x.Q_x$$

It seems likely that the divergences in production and standards requirements between the three different regional blocks are less than the difference between domestic and export markets in general. Thus, we assign a higher value to the elasticity of transformation between export partners than to that between the domestic and export markets. A value of 4.0 was used throughout the analysis.

Consumption Behavior

The consumption behavior of the representative household in the model is represented using a Constant Elasticity of Substitution (CES) expenditure function over the domestic nontraded good and the imported composite good. The resulting expenditure function is

$$10.\ e = [\alpha_d p_d^{(1-\sigma_m)} + \alpha_m p_m^{(1-\sigma_m)}]^{1/(1-\sigma_m)}.u$$

[82]Import source (export destination) can be singled out simply by specifying the share in Myanmar's total imports (exports).

Differentiating equation 10 leads, by Shephard's Lemma, to the demand equations for each of the composite consumer goods.

12-13. $Q_i = \alpha_i .(p_i/p)^{-\sigma_m} . u$ (i = domestic, imports)

where p is the composite price of the consumer good, such that. $e = p.u$

The value of the elasticity of substitution, σ_m, was chosen to be 1.5 based on the literature survey by Goldstein and Khan (1985). With domestic prices initially set to unity, the values of the σ parameters were based on consumption shares.

Import Sourcing

Import sourcing decisions were specified as being made according to a CES import expenditure function (*em*) ranging over imports from different source countries.

14. $em = [\sum_{i=1}^{3} \alpha_{mi}\ p_{mi}]^{(1-\sigma_s)1/(1-\sigma_s)}.Q_m$ (i = asean, eu, row)

where p_{mi} is the domestic price of imports from source i; α_{mi} is the share of imports; σ_s is the elasticity of substitution between import sources; and Qm is the volume of overall imports.

Differentiating equation 14 with respect to the price of either of the imports gives us the import demand equations for each source of imports as a function of the size of imports and relative prices:

16-18. $Qm_i = \alpha_{mi}.(p_{mi}/p_m)^{\sigma_s}.Q_m$ (i = asean, eu, row)

where p_m is the composite price of imports, such that

15. $em = p_m.Q_m$

The elasticity of substitution in this function was set at twice the value in the import demand function. This widely-used proportionality is given some support by Goldstein and Khan (1985) who find that the elasticities of demand for countries' exports (which depend primarily on substitutability between imports from different sources) are roughly twice as high as import demand elasticities.

Market Clearing

The supply of the domestic nontraded good must equal the domestic demand for this good. This market clearing condition allows us to solve for the price of the nontraded good, and hence for the real exchange rate in the model.[83]

Income-expenditure Condition

The model is closed by the income expenditure condition. This condition equates total expenditure to the sum of revenue obtained from production, tax revenues, and financial inflows from abroad.

The income-expenditure condition for the model may be written

$$19.\quad e = Rev + \sum_{i=1}^{3} t_{mi} \cdot Qm_{i} \cdot p_{mi} + \sum_{i=1}^{3} t_{x} \cdot Q_{xi} \cdot p_{xi} + f \qquad \text{(i = asean, eu, row)}$$

where t_{mi} is a vector of tariff rates; and Qmi is a vector of source-specific import demand; t_x is the source generic export tax rate; Q_{xi} is a vector of destination-specific export supply; and f is the total financial inflow into Myanmar.

Total trade tax revenues (*Trev*) consist of the sum of import tariff revenues and export tax revenues.

$$20.\quad Trev = \sum_{i=1}^{3} t_{mi} \cdot Qm_{i} + \sum_{i=1}^{3} t_{x} \cdot Q_{xi}$$

[83] See Footnote 40.

Annex 6.B Excel Model to Simulate the Regional Integration Arrangement (RIA)

Structure of the Spreadsheet

The spreadsheet "modelmy.xls" includes three sheets: The first, "SAM", is designed to organize the base data and the Social Accounting Matrix; The second, "Simult", is set up to implement the experiments. The third, "Variables", presents the description of all the variables. The values of the parameters in the sheet "SAM" are linked to the variables in the sheet "Simult" so that the model calibration is automatically updated whenever the base data is changed.

On the sheet "SAM", the block of *Basic Macro Data Worksheet* is used to compute the basic macro statistics including GDP, imports, exports, and trade tax revenues. The block of *Trade Share/Initial Tariff Worksheet* is designed to organize the trade shares and trade tax rates by source and destination countries. By filling the areas in the worksheets, the parameter values on the SAM in the upper part of the spreadsheet are automatically computed.

The sheet "Simult" is organized into three blocks: *Equations and Endogenous Variables* (Column A-E), *Exogenous Variables* (Column F-H), and *Parameters* (Column I-J). The equations are further decomposed into three parts. *Simultaneous Equations* indicate the simultaneous system where the endogenous variables are solved. *Causally Prior Equations* are calculated once the exogenous variables have been specified, in order to compute the domestic prices which are set to one in the initial equilibrium. The *Causally Posterior Equations block* computes some useful statistics which don't play a role in determining the solution of the simultaneous block. In the *Exogenous Variable* block, world prices are assumed to be fixed under the small country assumption. The changes in trade policy such as the reduction of tariff rates can be simulated by changing the value of tax rates. The block of *Parameters* includes the *Share Parameters* and the *Elasticities* of substitution or transformation. The share parameters are automatically computed from the sheet "SAM." By changing the values of the elasticities, sensitivity analyses can be conducted easily. *Microsoft Excel Solver* is used to solve the model.

Sheet "Simult"

A	B	C	D	E	F	G	H	I	J	K	L
ENDOGENOUS VARIABLES					**EXOGENOUS VARIABLES**			**PARAMETERS**			2
Variable	Base Values	Sim Results	%Change	% of GDP				**Share Parame**	**Share**		3
e	782651	782651	0.0	0.0	Pm_as	0.9453	=1/(1+SAM!L20)	alphad	0.689		4
Qd	538981	538981	0.0	0.0	Pm_eu	0.9453	=1/(1+SAM!L21)	alpham	0.311		5
Qm	243670	243670	0.0	0.0	Pm_r	0.9453	=1/(1+SAM!L22)	alphamas	0.515		6
P	1	1	0.0	0.0	Px_as	1.1111	=1/(1-SAM!N20)	alphameu	0.076		7
em	243670	243670	0.0	0.0	Px_eu	1.1111	=1/(1-SAM!N21)	alphamr	0.409		8
Pm	1	1	0.0	0.0	Px_r	1.1111	=1/(1-SAM!N22)	betad	0.812		9
Qmas	125490	125490	0.0	0.0	Q	663705		betax	0.188		10
Qmeu	18519	18519	0.0	0.0	f	91751		betaxas	0.384		11
Qmr	99661	99661	0.0	0.0	u0	782651		betaxeu	0.067		12
Rev	663705	663705	0.0	0.0				betaxr	0.549		13
PO	1	1	0.0	0.0	**Myanmar Tax**						14
Pd	1	1	0.0	0.0	Tmas	0.0579		**Elasticity**			15
Qx	124724	124724	0.0	0.0	Tmeu	0.0579		Elasticity	Value		16
u	782651	782651	0.0	0.0	Tmr	0.0579		sigmam	1.500		17
Trev	27195	27195	0.0	0.0	Txas	0.1000		sigmas	3.000		18
Revx	124724	124724	0.0	0.0	Txeu	0.1000		sigmat	2.000		19
Px	1	1	0.0	0.0	Txr	0.1000		sigmad	4.000		20
Qxas	47894	47894	0.0	0.0							21
Qxeu	8357	8357	0.0	0.0	**Partner Tariff Concession**						22
Qxr	68474	68474	0.0	0.0	Tpas	0.075	=SAM!n20				23
					Tpeu	0	=SAM!n21				24
Causally Posterior Equations					Tpr	0	=SAM!n22				25
Trevm	13336	13336	0.0	0.0	Tpcas	0.0750					26
Trevx	13858	13858	0.0	0.0	Tpceu	0.0000					27
					Tpcr	0.0000					28
											29
											30
											31
EQUATIONS											32
Simultaneous											33
1	Rev=	663705.38	=(betad*Pd^(1+sigmat)+ betax*Px^(1+sigmat))^(1/(1+sigmat))*Q								34
2	PO=	1.00	=(betad*Pd^(1+sigmat)+ betax*Px^(1+sigmat))^(1/(1+sigmat))								35
3	Qd=	538980.8841	=betad*(Pd/PO)^(sigmat)*Q								36
4	Qx=	124724.4932	=betax*(Px/PO)^(sigmat)*Q								37
5	Revx=	124724.49	=(betaxas*Pxas^(1+sigmad)+betaxeu*Pxeu^(1+sigmad)+betaxr*Pxr^(1+sigmad))^(1/(1+sigmad))*Qx								38
6	Px=	1.00	=(betaxas*Pxas^(1+sigmad)+betaxeu*Pxeu^(1+sigmad)+betaxr*Pxr^(1+sigmad))^(1/(1+sigmad))								39
7	Qxas=	47894.21	=betaxas*(Pxas/Px)^sigmad*Qx								40
8	Qxeu=	8356.54	=betaxeu*(Pxeu/Px)^sigmad*Qx								41
9	Qxr=	68473.75	=betaxr*(Pxr/Px)^sigmad*Qx								42
10	e=	782651.35	=(alphad*Pd^(1-sigmam)+alpham*Pm^(1-sigmam))^(1/(1-sigmam))*u								43
11	P=	1.00	=(alphad*Pd^(1-sigmam)+alpham*Pm^(1-sigmam))^(1/(1-sigmam))								44
12	Qd=	538980.88	=alphad*(Pd/P)^(-sigmam)*u								45
13	Qm=	243670.47	=alpham*(Pm/P)^(-sigmam)*u								46
14	em=	243670.47	=(alphamas*Pmas^(1-sigmas) + alphameu*Pmeu^(1-sigmas)+alphamr*Pmr^(1-sigmas))^(1/(1-sigmas))*Qm								47
15	Pm=	1.00	=(alphamas*Pmas^(1-sigmas) + alphameu*Pmeu^(1-sigmas)+alphamr*Pmr^(1-sigmas))^(1/(1-sigmas))								48
16	Qmas=	125490.29	=alphamas*(Pmas/Pm)^-sigmas*Qm								49
17	Qmeu=	18518.96	=alphameu*(Pmeu/Pm)^-sigmas*Qm								50
18	Qmr=	99661.22	=alphamr*(Pmr/Pm)^-sigmas*Qm								51
19	u=	782651.3514	=(Rev+Trev+f)/P								52
20	Trev=	27194.62	=(Tmas*Qmas*Pm_as+Tmeu*Qmeu*Pm_eu+Tmr*Qmr*Pm_r)+(Txas*Qxas*Px_as+Txeu*Qxeu*Px_eu+Txr*Qxr*Px_r)								53
											54
Causally Prior Equations											55
	Pmas=	1.000	=Pm_as*(1+Tmas)								56
	Pmeu=	1.000	=Pm_eu*(1+Tmeu)								57
	Pmr=	1.000	=Pm_r*(1+Tmr)								58
	Pxas=	1.000	=Px_as*(1-Txas)*(1+((Tpas-Tpcas)/(1+Tpas)))								59
	Pxeu=	1.000	=Px_eu*(1-Txeu)*(1+((Tpeu-Tpceu)/(1+Tpeu)))								60
	Pxr=	1.000	=Px_r*(1-Txr)*(1+((Tpr-Tpcr)/(1+Tpr)))								61

Sheet "SAM"

Social Accounting Matrix (SAM) for Myanmar

All values refer to 1996 and are in adjusted Myanmar kiat

	Producer	Household	Importer	Exporter	Government	ASEAN Partner	EU	ROW	Customs-ASEAN	Customs-EU	Custmos-ROW	Fin. Inflow	Total	
Producer		663705.4		13858.3									677563.7	
Household	538980.9		243670.5										782651.4	
Importer						118622.1	17505.4	94206.7	6868.2	1013.6	5454.6		243670.5	
Exporter									5321.6	928.5	7608.2		13858.3	
Government		27194.6											27194.6	
ASEAN Partne	47894.2												47894.2	
EU	8356.5												8356.5	
ROW	68473.7												68473.7	
Customs-ASEAN					12189.8								12189.8	
Customs-EU					1942.1								1942.1	
Customs-ROW					13062.8								13062.8	
Fin. Inflow		91751.4											91751.4	Check:
Total	663705.4	782651.4	243670.5	13858.3	27194.6	118622.1	17505.4	94206.7	12189.8	1942.1	13062.8	0.0	1988608.8	1988608.8

Basic Macro Data Work Sheet

	Kt m before a	Nonfactor se	Adjusted data
GDP	613200.0		**690900.0**
Imports	9881.0	771.4	**230334.1**
M duties			**13336.3**
Exports	5945.0	1690.2	**138582.8**
X duties			**13858.27703**
Fin Inflow			**91751.4**

Trade Share/Initial Tariff Work Sheet

	M Share	M Tax	X Share	X Tax	Partner Tariff
ASEAN (%)	**0.515**	**0.0579**	**0.384**	**0.1**	0.075
EU (%)	**0.076**	**0.0579**	**0.067**	**0.1**	
ROW (%)	**0.409**	**0.0579**	**0.549**	**0.1**	
Total Check	1		1		

ENDOGENOUS VARIABLES		
Variable		
e	Expenditure	
Qd	Quantity of domestic goods	
Qm	Quantity of imported goods	
P	Consumer price index	
em	Import expenditure	
Pm	Domestic price of imports	
Qmas	Quantity of imports from ASEAN	
Qmeu	Quantity of imports from EU	
Qmr	Quantity of imports from the rest of the world	
Rev	Revenue from production	
PO	Producer price	
Pd	Price of nontraded goods	
Qx	Quantity of exports	
u	Utility Index (Real expenditure)	
Trev	Trade tax revenue	
Revx	Revenue from exports	
Px	Price of the composite export goods	
Qxas	Quantity of exports to ASEAN	
Qxeu	Quantities of exports to EU	
Qxr	Quantities of exports to the rest of the world	
Causally Posterior Equations		
Trevm	Import tax revenue	
Trevx	Export tax revenue	
PARAMETERS		
Share Parameters		
alphad	Share of domestic goods in total consumption	
alpham	Share of imports in total consumption	
alphamas	Share of ASEAN in total imports	
alphameu	Share of EU in total imports	
alphamr	Share of the rest of the world in total imports	
betad	Share of domestic sales in total production	
betax	Share of exports in total production	
betaxas	Share of ASEAN in total exports	
betaxeu	Share of EU in total exports	
betaxr	Share of the rest of the world in total exports	
Elasticity		
sigmam	Elasticity of substitution between domestic and imported goods	
sigmas	Elasticity of substitution between import sources	
sigmat	Elasticity of transformation between domestic and export output	
sigmad	Elasticity of substitution between export markets	

EXOGENOUS VARIABLES	
Variable	
Pm_as	World price of imported ASEAN goods
Pm_eu	World price of imported EU goods
Pm_r	World price of imported rest of the world goods
Px_as	World price of exported goods to ASEAN
Px_eu	World price of exported goods to EU
Px_r	World price of exported goods to rest of the world
Q	Overall resource endowment of the economy
f	Financial inflow
u0	Initial utility level
Myanmar Tax	
Tmas	Import tax against ASEAN
Tmeu	Import tax against EU
Tmr	Import tax against the rest of the world
Txas	Export tax for the goods to ASEAN
Txeu	Export tax for the goods to EU
Txr	Export tax for the goods to the rest of the world
Partner Tariff Concession	
Tpas	ASEAN's tariff against Myanmar
Tpeu	EU's tariff against Myanmar
Tpr	Rest of the world tariff against Myanmar
Tpcas	ASEAN's tariff after concession
Tpceu	EU's tariff after concession
Tpcr	Rest of the world tariff after concession
Causally Prior Equations	
Pmas=	Domestic price of imported ASEAN goods
Pmeu=	Domestic price of imported EU goods
Pmr=	Domestic price of imported rest of the world goods
Pxas=	Domestic price of exported goods to ASEAN
Pxeu=	Domestic price of exported goods to EU
Pxr=	Domestic price of exported goods to the rest of the world

Data Preparation and Calibration

A convenient feature of the model is its modest data requirements. The only data required are: GDP, imports and exports by each source and destination countries, Myanmar's trade tax rates by trading partners (Import tax and Export tax), and Myanmar's trading partners' tariff rates against Myanmar's exports. The *Basic Macro Data Work Sheet* on the "SAM" sheet is designed to adjust and organize the basic macro data, and to remove distortions created by the presence of a highly overvalued official exchange rate that is essentially irrelevant for trade transactions.

Basic Macro Data Work Sheet			
	Kt m before adjustment	Nonfactor services	**Adjusted data**
GDP	613200		**690900**
Imports	9881	771	**230334**
M duties			**13336**
Exports	5945	1690	**138583**
X duties			**13858**
Fin Inflow			**91751**

Trade Share/Initial Tariff Matrix on the "SAM" is set up to compute the shares of trade by Myanmar's trading partners, and to organize tariff rates by source and destination.

Trade Share/Initial Tariff Work Sheet					Partner Tariff
	M Share	M Tax	X Share	X Tax	
ASEAN (%)	**0.515**	**0.0579**	**0.384**	**0.1**	0.075
EU (%)	**0.076**	**0.0579**	**0.067**	**0.1**	
ROW (%)	**0.409**	**0.0579**	**0.549**	**0.1**	
Check	1		1		

Once the basic macro data, trade share, and tax rates are assigned, the values on the Social Accounting Matrix (SAM) are automatically computed.

Shocks

Myanmar's import protection rates are set at 5.8 percent, which is the simple tariff average reported to WTO. Under the AFTA plan, the tariff rates of Myanmar are assumed to be reduced to 2.5 percent which is the mid-point of the AFTA requirement of 0-5 percent. To do this, we simply change Myanmar's import tax rates against ASEAN (T_{mas}) from the current 5.8 percent to 2.5 percent in *Myanmar Tax Box* in the sheet "Simult." Myanmar's export tax rates of 10 percent are assumed to be unchanged in this exercise.

Myanmar Tax	
Tmas	0.058
Tmeu	0.058
Tmr	0.058
Txas	0.1
Txeu	0.1
Txr	0.1

⟹ SHOCK

Myanmar Tax	
Tmas	0.025
Tmeu	0.058
Tmr	0.058
Txas	0.1
Txeu	0.1
Txr	0.1

On the export side, the liberalization by Myanmar's trading partners raises the prices received by Myanmar's exporters, and improves Myanmar's terms-of-trade and welfare. In the *Partner Tariff Concession Box,* the current protection of the ASEAN partner countries (T_{pcas}) are set to be 7.5 percent. Under the AFTA plan, the tariff rates of the partner countries (T_{pcas}) are assumed to be reduced to 2.5 percent.

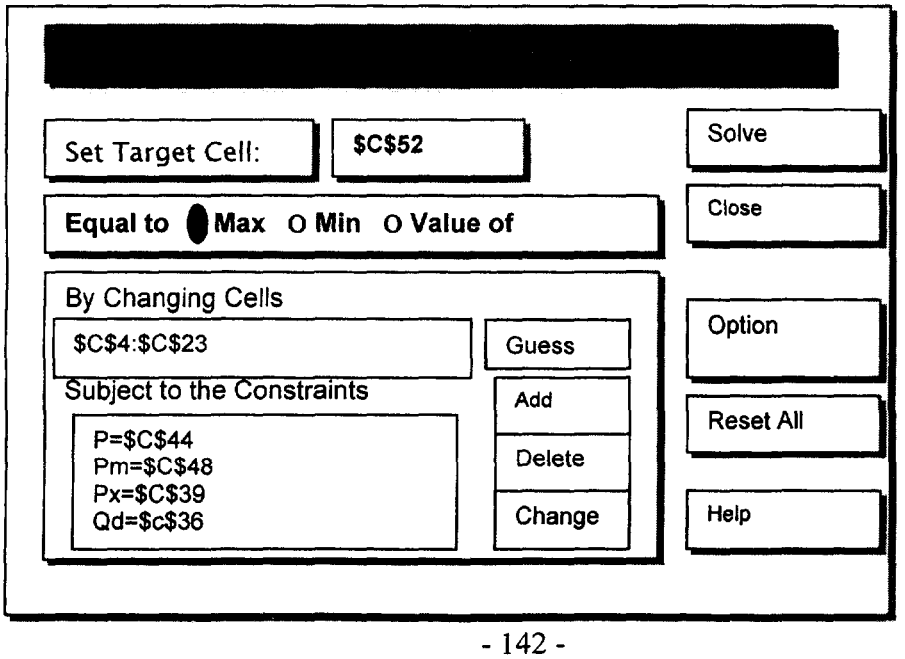
Partner Tariff	
Tpas	0.075
Tpeu	0
Tpr	0
Tpcas	0.0750
Tpceu	0.0000
Tpcr	0.0000

⟹ SHOCK

Partner Tariff	
Tpas	0.075
Tpeu	0
Tpr	0
Tpcas	0.0250
Tpceu	0.0000
Tpcr	0.0000

Solving the Model

The model is solved using the Solver option in EXCEL to maximize the value of one of the 20 endogenous variables in the model subject to the 20 constraints given by the equations of the model. Since the model is nearly linear, there is only one solution in each case, and this is located by the solution program. After selecting the *Solver* command from the *Tool Menu* in *Excel, a Solver Parameters Dialog Box* appears on the screen.



In the *Set Target Cell* space, the name of the variable that is being maximized (max option) or minimized (min option) in the objective function may be entered. For this simulation, we have chosen to maximize *utility* (cell location is at C52) *Subject to the Constraints*. The 20 *Simultaneous Equations* are specified as *Constraints* and allow solution of the model for the 20 endogenous variables. Since there is only one feasible solution, the choice of the variable to be maximized is essentially irrelevant. The *Add* option in the box allows us to specify the constraints one equation at a time. The "optimal" solution is found by the program systematically *Changing Cells* in search of solution. Choosing the *Solve* command runs the model. The *Endogenous Variables* in the sheet "Simult" are organized to display both the base values and solution values. After solving the model, *Causally Posterior Equations* decompose the trade tax revenues into import tax and export tax components.

The results are likely to depend on the specification of the key parameter values. For instance, if domestic goods and imports are good substitutes (the value of σ_m is higher), the magnitude of trade creation is likely to be greater following a reduction of tariffs to ASEAN countries. By contrast, if the elasticity of substitution between ASEAN and the rest of the world imports (σ_s) is larger, the magnitude of trade diversion will be larger. By changing the values of elasticities under *Elasticity Box* on the sheet "Simult", we can conduct easily the sensitivity analyses on the parameter values.

7 AFTA: Potential Impacts on Economic Growth[84]

The recent accession to ASEAN/AFTA by the new member countries—Cambodia, Lao PDR, Myanmar, and Vietnam—offers substantial potential for their economies to be further integrated into the Southeast Asian and global economies. After decades of wars, and subsequent isolation, these countries remain very poor. Since the second half of the 1980s, however, they have made significant initial progress in undertaking policy reforms toward market-oriented economies, and have unilaterally liberalized their trade and investment policies. Entering a regional group with their higher-income ASEAN predecessors may present opportunities for them to accelerate the catch up process.

Until the 1997 Asian financial crisis, the ASEAN economies were widely praised for their three decades of rapid growth, which resulted in large reductions in poverty. However, the persistent vulnerabilities of these economies since the crisis has led many economists to reconsider the nature of growth. Considering the implication of joining ASEAN on the new members' growth is an important component in assessing the overall impacts of ASEAN/AFTA.

This chapter aims to describe what the new member countries might expect from ASEAN/AFTA accession by way of dynamics. Having found that the static benefits of regional integration are usually small—and possibly even negative—advocates of regional trading arrangements typically appeal to the dynamic benefits.

Following Winters (1996), we define dynamics as:

> "anything that affects a country's rate of economic growth over the medium term. This includes both permanent increments to the rate of growth and temporary but long-lived increases of, say, over five years as countries move from one growth path to another. Such improvements in growth stem from accumulation: either of a factor of production—specifically capital, physical or human—or of knowledge."

In the existing literature, there is little evidence that dynamic gains always occur with regional integration especially in the case of integration schemes between developing countries. The existence of such gains depends heavily on the specific models used, and is very sensitive to the characteristics of the regional integration and the members' economic policies.

This chapter considers three channels through which the dynamic effects of regional integration might contribute to growth: knowledge (which induces productivity growth), accumulation of physical and human capital, and accelerated domestic reforms. Section 7.1 examines the likelihood that growth rates will converge among countries that trade intensively with each other. The growth trends of ASEAN countries and the current status of intra-ASEAN trade are reviewed. Section 7.2 investigates the possibility that increased openness may help the new members benefit from global technology spillovers. Section 7.3 explores how AFTA could change incentives for foreign and domestic investment in the new

[84] This chapter is based on an article written by Emiko Fukase and L. Alan Winters. We are grateful to L. Alan Winters for his permission to reprint it in this volume.

member countries. Section 7.4 considers the implications of accelerated domestic reforms. Section 7.5 presents a brief conclusion.

7.1 Convergence

Convergence is the phenomenon under which the differences between national per capita incomes narrow over time. Traditional growth theory predicts that accumulating factors of production will eventually run out of steam, for as one adds ever more units of physical and human capital to a fixed stock of land and labor, their rates of return decline to such an extent that further accumulation appears unprofitable. In the long run, therefore, economic growth tends to slow for higher income countries. Under standard neo-classical growth theory lower income countries carry the potential for rapid growth, with incomes catching up to those of the richer countries.

However, the historical evidence suggests rather strongly that the world's economies do not converge unconditionally. Ben-David (1994), for example, finds: a benign convergence among industrial countries, with the poorer catching up with the richer; no convergence between middle-income countries or between them and richer or poorer countries; and, a malign convergence among the poorest countries; whereby the less poor converge downward toward the more poor. The absence of evidence on global convergence was a major influence behind the seminal papers by Romer (1986) and Lucas (1988), which spawned the large literature on "New Growth" models that endogenized technological progress. One characteristic of many such models is the prediction that countries will converge to different equilibria rather than to a single target. Thus, many economists maintain that countries converge conditionally, such that, after allowing for a series of other explanatory variables, the remaining unexplained component of growth shows poorer economies growing more rapidly than richer ones, and thus converging. Among the variables used in these models are human capital, the rate of investment, political stability, and the openness of the economy.

Ben-David (1993, 1994, 1995) focuses on the role of international trade as the mechanism through which convergence occurs. Traditional growth theory predicts that, in countries with low barriers to goods and factor mobility, there should be a trend toward convergence in per capita incomes. In the absence of factor movements, free trade alone may contribute to a reduction in disparities. This is the conclusion of the factor price equalization theorem, which states that under certain conditions, free trade in commodities will not only equate commodity prices, but will also result in the equalization of factor prices. In addition, closer economic relations between countries may lead to spillovers of information and technology.

Ben-David (1993) offers strong evidence that after signing regional trading arrangements, the EC, the European Free Trade Association, and the US and Canada each displayed a marked increase in trade between members and a dramatic fall in the standard deviation of incomes per head across countries. Ben-David (1995) extends the analysis to explore the role of trade in creating "convergence clubs" using bilateral trade statistics to create groups of major trade partners. He finds that convergence is very common when members of a group are each other's major trading partners, but rare in similar sized groups formed by drawing countries randomly. However, while Ben David demonstrates rather strong evidence of convergence for OECD and a few middle-income countries, we do not yet have a firm handle on whether this holds for developing countries.

ASEAN is a diverse group of countries at different stages of development.[85] Singapore belongs to the "high-income" group with GNP per capita of $32,810 in 1997. Malaysia was classified as "upper-middle income" with per capita income of $4,530, while Thailand, the Philippines, and Indonesia belong to the "lower-middle income" group with per capita incomes of $2,740, $1,200 and $1,100 respectively. The new member countries – the Lao PDR, Cambodia, Myanmar, Vietnam -- are classified as "low-income" countries with per capita incomes of only $400 (Lao PDR), $300 (Cambodia), and $310 (Vietnam) (World Bank, 1999a).

In order for convergence to occur, poorer nations should grow at faster rates and catch up to richer nations. Table 7.1 shows the average real GDP growth rates of ASEAN member countries since its creation in 1967.

Table 7.1 Average Real GDP Growth Rates for ASEAN Countries

	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96	1997
Indonesia	6.8	8.0	8.1	4.4	6.5	7.3	4.6
	(4.2)	(6.3)	(5.6)	(2.2)	(4.8)	(5.7)	(3.1)
Myanmar	5.4	2.9	8.9	3.3	-1.9	7.2	4.6
	(3.3)	(0.7)	(6.3)	(1.0)	(-3.0)	(5.2)	(3.6)
Malaysia	7.1	8.4	7.6	4.0	8.3	8.7	7.8
	(4.6)	(5.5)	(4.8)	(1.3)	(5.5)	(6.3)	(5.4)
Philippines	5.2	6.7	5.2	-1.1	3.9	3.5	5.1
	(2.2)	(3.9)	(2.5)	(-3.6)	(1.3)	(1.0)	(2.8)
Singapore	13.1	8.6	9.0	4.8	9.4	8.6	7.8
	(11.5)	(6.9)	(7.7)	(4.1)	(7.6)	(6.6)	(7.6)
Thailand	7.9	6.5	7.3	5.4	10.9	8.0	-0.4
	(4.7)	(3.7)	(5.1)	(3.5)	(9.4)	(6.8)	(-1.4)
Vietnam	na	na	na	na	5.7	8.9	8.8[a]
					(3.6)	(6.8)	(7.1)
Lao PDR	na	na	na	na	4.3	7.0	6.5[a]
					(1.1)	(4.0)	(3.6)
Cambodia	na	na	na	na	Na	6.5	1.0[a]
						(3.4)	(-1.0)

Note: Figures in parentheses are GDP growth rates per capita.
Source: IMF, *International Financial Statistics*, various issues; [a]World Bank (1999a).

Table 7.1 implies remarkably high annual growth rates throughout the past three decades for the original ASEAN members. The Singaporean, Thai, Malaysian, and Indonesian economies grew at remarkable rates of 8.9 percent, 7.7 percent, 7.3 percent, 6.9 percent respectively, while the Philippines' growth rate of 3.9 percent was less impressive. Annual per capita incomes grew 7.4 percent for Singapore, 4.7 percent for Malaysia, 5.5 percent for Thailand, 4.8 percent for Indonesia, and 1.2 percent for the Philippines. The new members' growth rates are not available for the earlier years. Growth rates of 8.9 percent for Vietnam (6.8

[85] The World Bank's main criterion for classifying economies is gross national product (GNP) per capita. Low-income economies are those with GNPs per capita of $785 or less in 1997. Middle-income economies are those with GNPs per capita of more than $785 but less than $9,656. Lower-middle-income and upper-middle-income economies are separated at a GNP per capita of $3,125. High-income economies are those with GNPs per capita of $9,656 or more (World Bank, 1999a).

percent per capita), 7.0 percent for the Lao PDR (4.0 percent per capita), 6.5 percent for Cambodia (3.4 percent per capita), and 7.2 percent for Myanmar (5.2 percent per capita) over 1992-96 are, however, promising.

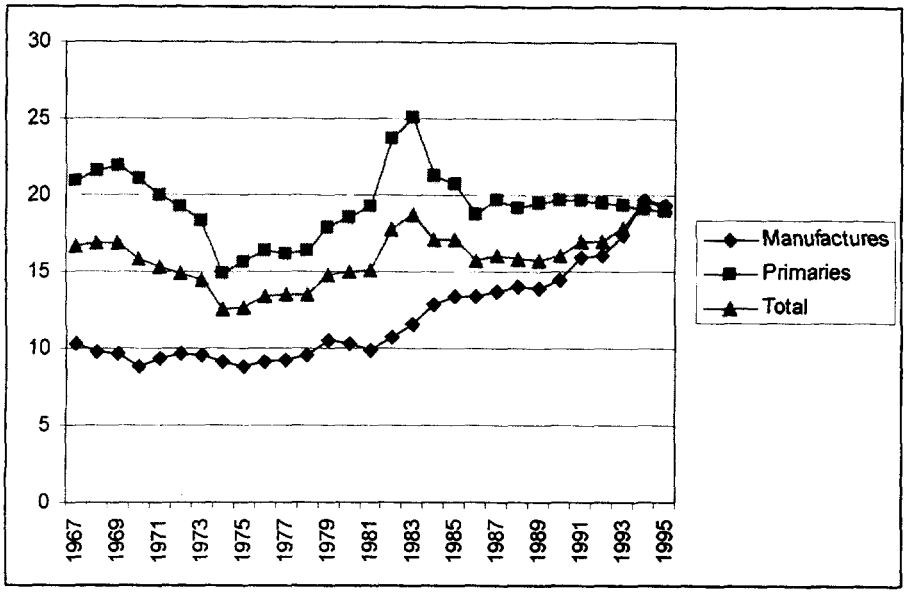
The Asian crisis, which started in Thailand in July 1997, deteriorated into a sharp contraction in the GDP of ASEAN 5, which registered negative growth rates in 1998. At the initial phase of the crises, Vietnam and Cambodia were partially protected by their semi-closed capital accounts and low ratios of short-term debt to reserves for Vietnam (World Bank, 1998), and by the dollarized economy in Cambodia. However, weak regional demand and a sharp slowdown in investments from the region has led the new member countries to adjust their growth targets downward in 1998, to 3.5-4.5 percent for Vietnam (World Bank, 1998), and 0.0 percent for Cambodia (World Bank, 1999b).

For the past three decades, there has been no sign of convergence among the member countries. Instead, the countries with the highest initial per capita incomes, Singapore and Malaysia, appeared to grow faster than the poorer members, with the exception of Thailand in the 1980s. The absence of convergence among ASEAN countries is not surprising given the wide difference in key variables such as political system, the timeframe of liberalization, and education level. In addition, intra-regional trade among the ASEAN countries was very small until the creation of AFTA.

It is well known that ASEAN was created primarily for security reasons in the midst of the Cold War vis-à-vis the communist countries of Indochina. The member countries initially had very weak economic links. Although a Preferential Trading Arrangement (PTA) was introduced at the Bali Summit in 1976, this initiative had little impact on regional trade because of its narrow commodity coverage and small margin of preferences. ASEAN countries pursued import-substitution policies in earlier years; but they switched to more export-oriented manufacturing regimes in the 1960s for Singapore, about the mid-1970s for Malaysia, the late 1970s for Thailand, and the mid-1980s for Indonesia and the Philippines (Montes, 1997). Moreover, the member countries primarily pursued trade liberalization unilaterally on a non-discriminatory basis rather than through ASEAN framework.

Figure 7.1 shows the trend of intra-regional trade in manufactures and primary commodities for ASEAN 5 over the period from 1967 to 1995. Before the creation of AFTA in 1992, the share of intra-regional trade was relatively modest, averaging around 15.6 percent. Excluding Singapore, the intra-regional trade share was minimal, at only 4.1 percent in average during the same period. Since the early 1980s the trade shares for primary products has been relatively stable with the exception of the early 1980s, while intra-regional trade in manufactures has increased steadily, almost doubling from 10.4 percent in 1980 to 19.4 percent in 1995. This trend appears to be attributable to shifts in government policies, FDI inflows, and an increasingly diversified economic structure in manufactures. Also, the very rapid growth of the region raised the share. Intra-regional trade rose especially after the creation of AFTA in 1992, registering 19.3 percent in 1995. How increasing intra-regional trade affects member countries' growth is not straightforward in the case of discriminatory liberalization. In particular, increasing intra-regional trade in manufacturing has potentially important implications on productivity growth. We will discuss this issue further in the next section.

Figure 7.1 Percentage of Intra-regional Trade for ASEAN 5



Notes: Primaries refer to SITC 1-4 + 68. Manufacturers refer to SITC 5-9 less 68.
Intra-regional trade is defined as imports plus exports of ASEAN 5 with ASEAN 5 divided by imports plus exports of ASEAN 5 with the world.
Source: UN COMTRADE System

7.2 Knowledge

There is a large theoretical and empirical literature on the positive relationship between per capita growth and outward orientation, e.g., Dollar 1992; Edwards 1993; Sachs and Warner 1995; Coe, Helpman and Hoffmaister 1997. Edwards (1998) found that more open countries have indeed experienced faster productivity growth using nine alternative openness indexes.[86] In this section, we concentrate on the view that open developing economies can benefit from research and development (R&D) that is performed in their trading partners by using imports to tap into the latter's stock of knowledge. A number of economists, however, have argued that outward-orientation should be combined with access to human capital. Therefore, we refer to the recent literature which suggests the importance of a country's "absorption capacity" in making best use of imports. Finally, we review the implications of the change in the specialization patterns on growth, into or away from high "learning by doing" sectors.

Rutherford and Tarr (1998a,b) discuss gains from trade liberalization that arise from the various fixed costs associated with establishing a product or a brand name. Their insight is that the research and development costs associated with developing each new product are likely to be higher for domestic firms that are entering new areas for the first time. Foreign firms, with experience in producing the product elsewhere, are likely to have substantially

[86] The following openness indexes were used: 1. Sachs and Warner Openness Index, 2. World Development Report Outward Orientation Index, 3. Leamer's Openess Index, 4. Black Market Premium, 5. Average Import Tariff on Manufacturing, 6. Average Coverage of Non Tariff Barriers, 7. The Heritage Foundation Index of Distortions in International Trade, 8. Collected Trade Taxes Ratio, and 9. Wolf's Index of Import Distortions. All but one of the equations showed the expected sign suggesting the positive relationship between openness and TFP growth. Although the coefficient of Wolf's Index showed the "wrong" sign, it was not significant.

lower fixed costs of establishment. In a growing economy, the need to continually invest in new products and plants imposes a more serious cost on countries that remain closed than in those that are relatively open.

Coe, Helpman and Hoffmaister (1997) assume that less developed countries that invest very little in R&D themselves benefit from R&D that is performed in the industrial countries. They identify several channels through which the productivity levels of countries are interrelated through international trade. These include the availability of larger numbers of varieties of intermediate products and capital equipment which enhance the productivity of its own resources; channels of communication that stimulate cross-border learning of production methods, product design, organizational methods and market conditions, and reverse engineering of imported goods. Thus, an economy benefits from foreign knowledge first according to how open it is and second according to whether it is open to those countries that have the largest knowledge stocks. They find that R&D spillovers from the industrial countries in the North to the less developed countries in the South are substantial.

In the spirit of Coe, Helpman and Hoffmaister, Annex 7.A-1 plots the trend of imports of machinery and transport equipment (defined as SITC 7) for ASEAN 4, Singapore, NIE 3, Japan, Europe, and the United States over 1980-96. These country classifications were chosen considering different levels of R&D stocks in these economies. Japan imported capital and transport equipment from the US and Europe throughout the period, whereas it only recently started to source from NIEs and ASEAN countries. The import pattern of NIEs remains relatively unchanged, with Japan being the major supplier followed by Europe and the United States. Singapore's imports from the rest of ASEAN rose substantially in recent years, quadrupling from around 5 percent of GDP in 1985 to 20 percent in 1996. A significant rise in imports of capital and transport equipment by ASEAN 4 started around 1985 perhaps reflecting increasing investments from Japan and the Asian NIEs. Since the creation of AFTA, imports from Singapore doubled registering 1.8 percent in 1992 and 3.6 percent of GDP in 1994.

Annex 7.A-2 shows the trend of capital and transport imports for the new member countries. The surges in imports since the latter half of 1980s reflect both their trade liberalization and the shift in the direction of trade from the Council for Mutual Economic Assistance (CMEA) countries toward market economies that resulted from the end of the Cold War. Starting from virtually nothing, total imports of capital and transport equipment as a percentage of GDP for Cambodia, the Lao PDR, and Vietnam reached 13.8 percent, 11.3 percent and 13.8 percent respectively. As for import sources, it is clear that the Lao PDR was importing mainly from the ASEAN countries. Thailand alone supplied 53.2 percent of the Lao PDR's imports of capital and transport equipment in 1995. In contrast, Vietnam's imports were characterized by a wider variety of sources including Japan and Europe followed by the NIEs and Singapore. Vietnam's imports from the ASEAN 4 remain relatively small although they have been increasing in the recent years.

The Coe, Helpman and Hoffmaister model implies that while increasing openness stimulates TFP, trade policy that switches a country's imports of machinery and equipment away from countries with high stocks of knowledge toward the ASEAN economies, which have lower stocks, may lower it.

If a country's initial imports were sourced substantially from ASEAN, like the Lao PDR, it would be more likely that the benefits from increased openness may outweigh some negative switching effects. In some cases, technological closeness and cultural similarities (e.g. similar languages between the Lao PDR and Thailand) facilitate technological transfer. In contrast, if a country initially sources its transport and machinery equipment mainly from industrial countries and then it opens its markets only against ASEAN, which effects would be larger becomes more ambiguous. We examine the model's implications for Vietnam below and find that the negative effect might dominate (Box 7.1). We should not take these results as a rigorous estimate, but it does illustrate a real danger for integration scheme between developing countries.

Box 7.1 Does AFTA Cause "Dynamic" Trade Diversion in Vietnam?

Coe, Helpman and Hoffmaister (1997) assume that a developing country can boost its productivity by importing a variety of intermediate products and capital equipment embodying foreign knowledge. They construct an index of total knowledge capital (measured by accumulated investment in R&D) in each industrial county, and then assume that trading partners get access to a country's stock of knowledge in proportion to their imports of machinery and transport equipment from that country. Using import-weighted sums of industrial country knowledge stocks to reflect developing countries' access to foreign knowledge, they seek to explain the latter's total factor productivity (TFP).

Vietnam sources its capital and transport equipment mainly from OECD and Asian NIE countries. Switching the origins of Vietnamese imports from these countries, which have higher stocks of knowledge, toward ASEAN may lower TFP growth. We apply a simplified version of Coe, Helpman and Hoffmaister's equation to test this possibility. Table 7.A reports the estimates of shares of Vietnam's imports of machinery and transport equipment coming from each source under different scenarios. The figures resulting from alternative policies were estimated based on recent simulation results conducted by Fukase and Martin (Chapter 5).

Table 7.A Access to Foreign R&D Capital

	R&D Capital Stock	Current Share	AFTA Share	MFN Share
	($ billion)	(%)	(%)	(%)
Indonesia	27[a]	1.6	1.5	2.7
Malaysia	12[a]	2.0	3.9	3.2
Philippines	20[a]	0.1	0.7	0.2
Singapore	5[a]	15.6	21.7	17.4
Thailand	8[a]	5.7	9.5	9.6
NIEs	360[a]	14.8	12.4	14.9
EU15	580	17.8	15.0	12.4
USA	1,041	7.1	6.0	6.1
Japan	260	23.4	19.7	23.5
ROW		11.7	9.8	9.9
Total Capital Stock		293.3	247.2	252.9

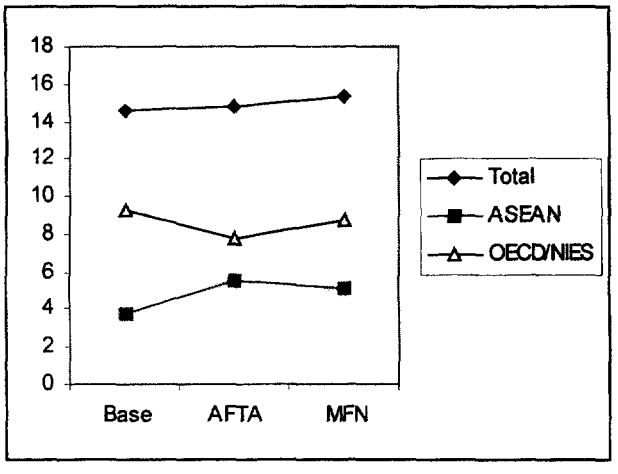
Note: [a] R&D capital stock for ASEAN and NIEs countries are preliminary guestimates assuming that the R&D stock and R&D investment are in a linear relationship.
Source: Coe, Helpman and Hoffmaister (1995); Comtrade; Fukase and Martin (Chapter 5)

Column 1 reports major Vietnamese trading partners' total stocks of R&D capital (knowledge) in 1990. Column 2 shows the shares of Vietnam's imports of machinery and transportation equipment from each source in 1995. At the foot of the column is reported the weighted sum R&D capital stock available to Vietnam using these trade shares. Column 3 (AFTA) reports shares of Vietnam's imports that might result from offering the ASEAN preferential access to the Vietnamese market under the CEPT Scheme. Column 4 shows the likely shares if Vietnam extends AFTA concessions to all its trading partners on a non-discriminatory basis. Because

of the higher initial weighted average tariff on imports from ASEAN (the result of an unfavorable commodity composition), a MFN liberalization toward a lower uniform tariff leads to a larger increase in imports from ASEAN than from the rest of the world.

Fortunately, Vietnam's entry into AFTA is likely not only to switch the source of imports, but also to increase its openness to imports of capital and transport equipment. Figure A shows the changes in shares of imports of machinery and transport equipment relative to GDP. In 1995, this share was 14.6 percent. With AFTA, the openness would increase to 14.8 percent. As expected, openness would be greatest with liberalization on a non-discriminatory basis, at 15.3 percent of GDP.

Figure 7.A Imports of Machinery and Transport Equipment as Percentage of GDP



Source: Fukase and Martin's simulation results (Chapter 5)

Figure 7.A also illustrates the shifts of Vietnamese imports of machinery and transport equipment from the OECD and NIEs to ASEAN under AFTA, whereas liberalization on MFN base eliminates the trade diversion. The Coe, Helpman and Hoffmaister equation is:

$$\Delta TFP = \ldots +0.479\ \Delta M + 0.967\ \Delta(M \log S)$$

where ΔTFP is the change in total factor productivity, M is the share of imports of machinery and transport equipment in GDP and S is the access to the stock of foreign knowledge, as represented by the weighted total of foreign knowledge capital using trade shares as weights. If AFTA affected S but not M, it would (under this equation) reduce TFP by about 2.4 percentage points. However, as increased openness partially would offset the negative effects of shifts of sources, the net effects on TFP are estimated at 1.6 percentage points lower for AFTA. When Vietnam extends its concession on a non-discriminatory base, the net effects on TFP would be positive accounting for a 2.0 percentage point increase.

It is inappropriate to take these results too seriously, for Coe, Helpman and Hoffmaister's model is not yet fully proven. In addition, given relatively open trade regimes of ASEAN countries, it is likely that the technology of OECD and Asian NIEs countries is already indirectly embodied in ASEAN goods either through trade or FDI. Thus, this result may over-estimate the negative effects of shifting import sources. The theoretical model presented above is more relevant to medium-term, rather than to year-to-year, developments in total factor productivity. Trade diversion implies a one-time decline in S which implies a one-time decline in TFP. The effects of this on long-run growth depends on the effects of the switch on the growth of S. There is no presumption on this. On the other hand, the qualitative message that switching trade from OECD and NIEs toward ASEAN is not necessarily beneficial does seem to be worth noting.

The results in Box 7.1 should be viewed as very preliminary since Coe, Helpman and Hoffmaister's model is not yet fully proven. In addition, we did not analyze the technology of OECD and NIEs, which is already embodied in ASEAN goods through trade and FDI. The net effects on TFP depend on ASEAN countries' abilities to absorb the industrial countries' technology and then transferring it to the new member countries. How the result would change once incorporating this "indirect" transfer of technology remains to further research. On the other hand, the qualitative message that switching trade from industrial countries toward ASEAN is not necessarily beneficial does seem to be worth noting. Static analysis of regional integration has long observed that such trade diversion is potentially harmful. What we have described here is a dynamic version of trade creation and diversion.

There is a series of theoretical and empirical papers which argues that the flow of advanced technology can increase the growth rate only by interacting with that country's absorptive capacity. Keller (1996) argues that technology is only implementable if the labor force has built up the corresponding skills. Navaretti, Soloaga and Takacs (1998) find that the ability to assimilate new technologies of a country affects the selection of the imports of machines. Borenszten, de Gregorio, and Lee (1995) find, identifying foreign direct investment (FDI) by multinational corporations (MNC) as a major channel for access to advanced technologies, that the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital.

Keller's model (1996) implies that, although technological information flows freely across national borders and can be available at sharply lower cost under an outward-oriented policy regime, the complementary human capital remains immobile, and needs largely to be home-provided. His model implies the importance of investment on human capital at importing/home country.

Table 7.2 shows secondary school enrollment rates for the ASEAN countries for 1970-95. Over the past 25 years, the ASEAN countries achieved substantial progress in human capital accumulation. However, secondary school enrollment rates in Thailand and Indonesia have remained low. Some economists point out Thailand's relatively poor educational performance in recent decades hindered its smooth advance up the "ladder of comparative advantage", from labor intensive to higher technology industries. While Vietnam's secondary school enrollment rate of 47 percent is relatively high, the ratios for Cambodia (27 percent), the Lao PDR (25 percent), and Myanmar (32 percent) remain low. Further investment in human capital could be critical in taking advantage of the technological opportunities resulting from trade liberalization.

Finally, some economists use endogenous growth approaches to relate growth to the static concepts of trade creation and diversion, e.g., Lucas, 1988; Waltz, 1997. Lucas (1988) analyzes "learning by doing" effects by considering a world in which human capital is the engine of growth. When trade barriers are removed, a country will produce products in which it has comparative advantage. According to his analysis, each country improves in the type of products it produces, which means that its comparative advantage increases through "learning by doing." This implies that some countries will be locked into sectors with low "learning by doing", experiencing negative divergence from the rest of the world.

Table 7.2 Gross Secondary School Enrollment Rates

	1970	1975	1980	1985	1990	1995
Indonesia	16	20	29	41	44	48
Cambodia	8	NA	NA	NA	NA	27
Lao PDR	3	7	21	23	25	25
Malaysia	34	42	48	53	56	61
Myanmar	21	21	22	23	23	32
Philippines	46	54	64	64	73	79
Singapore	46	52	58	62	68	67
Thailand	17	26	29	30	30	55
Vietnam	NA	46	42	43	33	47

Note: When the data for the exact year are not available, the data for the closest years were taken.
Source: World Bank, *World Development Indicators*, various issues.

Waltz (1997) suggests that the growth-rate effect of regional integration needs not always be positive. The reduction of barriers to trade induces resource reallocation, changing the specialization patterns of the integrating countries. Whether regional integration leads to an increase or a decrease in the steady-state growth rate depends upon whether it leads to a shift of resources into or away from dynamic sectors. If a country has a comparative advantage in a dynamic sector, trade creation which results in expansion of the dynamic sector, leads to faster growth; trade diversion, on the other hand, could result in the expansion of traditional sectors: and hence a decline in growth. If the ASEAN new members have comparative advantage in traditional sectors, this may potentially lead to specialization into traditional goods production and may lock in low "learning by doing." Whether countries are able to diversify their economic structures away from these dead-ends depends, in this model, on how government revenues from the traditional sectors would be directed towards improving the physical and institutional infrastructure as well as human resource development.

7.3 Investment

Regional integration makes trade easier and tends to raise the returns to at least some factors of production. An early and striking application of this insight is Baldwin (1989, 1992) who models the effects of trade liberalization on accumulation and introduced the notion of a medium-term growth bonus. If the cost of capital is unchanged, the response to increasing rates of returns is to invest more, and thus to increase the capital stock. This leads to a temporary increase in growth rates as the accumulation takes place that shifts the economy onto a higher trajectory: once the new steady-state level of capital stock has been achieved there will be higher levels of output per head but growth will return to its original level.

If we accept this basic model, the first question to ask is whether ASEAN will raise or lower its new members' rate of return to capital. A simple application of the Heckscher-Ohlin model might lead us to expect their returns to fall, as they are capital-scarce relative to the

ASEAN partner countries. Since international trade tends to increase the returns to the abundant factor and reduce those to the scarce factor, increased trade with ASEAN seems likely to reduce the returns to capital in the new members. However, there are several reasons to believe that the basic Heckscher-Ohlin model is too simple for our purposes and one might expect economic integration to raise the rates of returns on capital in both partners, regardless of capital abundance.

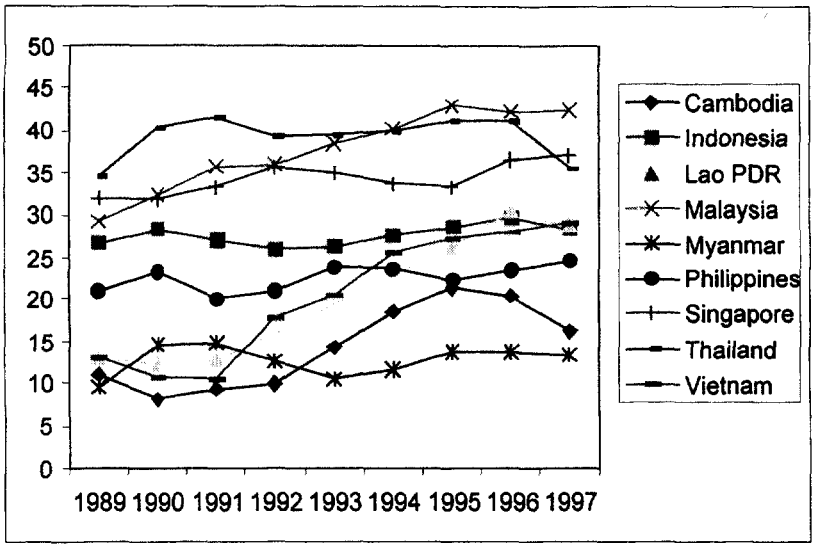
First, the standard Heckscher-Ohlin model applies only to a so-called square model with equal numbers of factors of production and goods; there is no indication that this is the way the real world is. Second, the Heckscher-Ohlin model presumes homogeneous products, while experience suggests that many markets are better represented by differentiated products and intra-industry trade. In the latter case the degree of substitutability of domestic and foreign goods becomes very important. Third, integration might affect the rate of return on capital through the price of capital goods. A reduction in tariffs and trading costs on imports of capital equipment will reduce the prices industry has to pay for investment goods. This, fairly naturally, is likely to increase the rate of return and encourage greater accumulation.

If trade liberalization raises the return to capital, it is most likely to stimulate both domestic and foreign investments. Figure 7.2 presents gross domestic investment to GDP ratios for 1989-97. Figure 7.2 shows that Thailand, Malaysia, and Singapore maintained remarkably high domestic investment to GDP ratios prior to the start of the Asian crisis in 1997: about 41 percent for Thailand and Malaysia and 37 percent for Singapore in 1996. Investment/GDP ratios were somewhat lower for Indonesia and the Philippines at 29 and 23 percent in 1996. In the 1990s, the new member countries, with the exception of Myanmar, experienced a rapid increase in their investment/GDP ratios: at around 10 percent in 1990, they more than doubled for Vietnam and Cambodia and almost tripled for the Lao PDR.

Young (1995) offers convincing evidence that the so-called Asian miracle owed less to mystery than to thrift: almost all the high growth rates of the Asian tigers appear to be due to their formidable rates of accumulation of physical and human capital. Once one accounts for the dramatic rise in factor inputs, the growth of total factor productivity in these economies is not particularly high. Krugman (1994) predicts that economic growth that is based on expansion of inputs such as labor and capital, rather than on growth in output per unit of input—which is primarily due to increases in knowledge—is inevitably subject to diminishing returns.

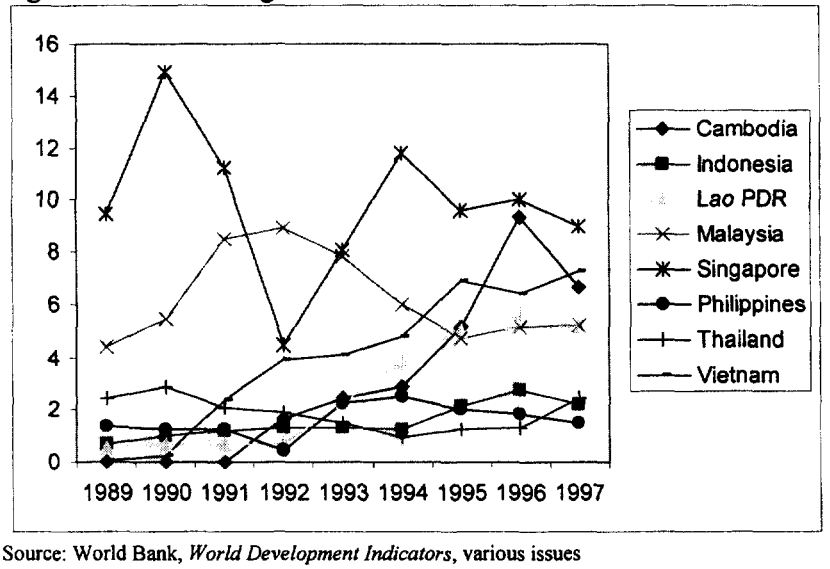
Figure 7.3 presents the trend of net foreign direct investment (FDI) ratio to GDP for the ASEAN countries. Net FDI to GDP ratios for Singapore and Malaysia are high and vary from year to year whereas FDI to GDP ratios for Indonesia, Thailand and the Philippines have been relatively low. Figure 7.3 demonstrates prodigious increases in the net FDI inflows in the new member countries during the 1990s. Net FDI to GDP ratios for Cambodia, the Lao PDR, and Vietnam, which were close to zero in the late 1990s, grew steadily registering 9.4 percent, 6.4 percent, and 5.6 percent respectively in 1996.

Figure 7.2 Gross Domestic Investment to GDP Ratio 1989-1997



Note: The data for the Lao PDR are not available for the years 1992-1994.
Source: IMF, *International Financial Statistics*

Figure 7.3 Net Foreign Direct Investment to GDP Ratio 1989-1997



Source: World Bank, *World Development Indicators*, various issues

As the new members are capital scarce and need to upgrade their technology, FDI has a potentially very important role in promoting economic development. Many economists see inflows of FDI, first, as harbingers of confidence in the economy and, second, as the route through which an economy can modernize—for example, through access to modern technology, modern management, marketing networks, and sources of inputs. Furthermore, these inflows have compensated for low levels of savings in the new member countries, filling a gap in the saving-investment balance.

Two types of FDI are observed in ASEAN countries: FDI associated with import substitution strategies and FDI induced by so-called "vertical integration." When the original ASEAN members were pursuing import substitution strategies in earlier years, some "tariff-jumping" FDI occurred as a way of penetrating these markets. In these cases, FDI acted mainly as a substitute for trade. However, this strategy was constrained by the limited market size of individual ASEAN countries. Among the new member countries, FDI associated with import substitution strategies is especially prevalent in Vietnam. Vietnam's strategy involves promoting a set of capital intensive and so-called "strategic" industries in the form of joint ventures between state-owned enterprises (SOE) and foreign firms. High protection is used to attract foreign firms (Chapter 5).

The "vertical" integration of East Asia's production structure has been observed by many economists, and the role of transnational firms as the integrating force has been recognized increasingly (Markusen, 1998; UNCTAD, 1997; Athukorala and Menon, 1997; Dobson and Yue, 1997).[87] Vertical integration is driven mainly by transnational firms that pursue firm-level economies of scale, allocating value-added segments by "slicing up the value chain" (Krugman, 1995) in different locations according to each location's comparative advantage. Production networks are trade creating either within a firm or among cooperating firms, resulting in trade in products that are at different stages of the production process (Dobson and Chia, 1997).

Puga and Venables (1997, 1998) study the spatial implications of economic development endogenizing the location of firms in their model. Their model provides a useful way of thinking about the spread of industry from Japan to its East Asian neighbors, and more recently from Asian NIEs to ASEAN countries and China. According to Puga and Venables, economic underdevelopment is a manifestation of the spatial pattern of agglomeration, and development occurs as this pattern changes, with industry spreading from existing concentrations to new ones. They suggest that there are few fundamental differences between countries that generate immutable patterns of comparative advantage: instead, the pattern of trade and development is determined mainly by history. Thus, the pattern of comparative advantage is not set in stone but is potentially flexible, and less developed countries can develop and converge—in both income and economic structure—to developed economies through the process of industrialization. Different trading arrangements can trigger or postpone industrial development, as trade liberalization changes the attractiveness of countries as bases for manufacturing production and as potential markets.

Puga and Venables (1998) identify forces that may affect the concentration of industry in a single location: first, transport costs or other trade barriers create incentives for firms to locate close to customers and suppliers. Second, firms have increasing returns to scale, which play the role of forcing firms to choose where to produce. The third is the presence of input-output linkages, which again create an incentive for firms to locate close to other firms, their suppliers and customers. Puga and Venables observe that rising demand for manufactures

[87] The pursuit of integrated strategies by transnational firms may involve either horizontal or vertical integration. "Horizontal" integration refers to firms which produce roughly the same product or service in multiple locations. "Vertical" integration refers to firms that geographically fragment the production process by stages. The former tends to occur between similar countries whereas the latter is associated with factor endowment dissimilarities between countries.

relative to other tradable sectors increases demand for labor in established manufacturing countries, opening an increasing wage gap between these and other countries. Despite this wage gap, it is not profitable for any firm to move out if the forward and backward linkages received by being in a country compensate for the higher wage. However, at some point this wage gap becomes unsustainable, and industry starts to spill over to low-wage economies. Low wages of the new member countries relative to ASEAN predecessors are the essential advantage to attract FDI for labor-intensive manufacturing. The rapid development of the garment industry in the Lao PDR and Cambodia since the late 1980s was initiated by FDI mainly from Asian NIEs who faced rising wages and Multifibre Arrangement (MFA) quota limits in their home countries.

As the original ASEAN members graduate from GSP benefits, preferential access to industrialized countries provides an additional opportunity for the new member countries to attract FDI. As a large portion of garments are shipped to the industrialized countries, the market-access conditions such as MFN status with the US[88] and Generalized System of Preferences (GSP) with the EU[89] are critical for the competitiveness of their exports. With ASEAN membership, the application of the "regional" cumulation of origin provisions provides additional incentives for foreign firms to locate within ASEAN. The EU's GSP status offers special provisions allowing the EU rules of origin to be calculated using region-wide cumulation. This provision enables a firm located in a new member country to source cheap inputs from ASEAN while maintaining GSP status in the EU market. For instance, the EU GSP privileges for the Lao PDR were once removed because of a low share of value-added occurring inside the Lao PDR. However, with the Lao PDR's ASEAN accession in 1997, "regional cumulation of origin provisions" applied to ASEAN helped the Lao PDR to restore GSP status in 1997 (Chapter 3).

AFTA affects FDI in different ways. On the one hand, an announcement that protection will be reduced under AFTA is likely to encourage existing import-competing firms to begin adjusting to the changes towards more efficient and competitive firms. Some firms who seek profit opportunities created by distortions rather than efficiency lose incentives to relocate. On the other hand, the formation of AFTA is likely to accelerate further the "vertical" integration inducing transnational firms to establish within the region, as the removal of barriers to trade facilitates the relocation of production processes across the ASEAN countries. The geographical proximity of the ASEAN 10 appears to facilitate the restructuring of production, and complementary economic structures provide scope for intra-industry specialization. Typically, skilled-labor and technology-abundant Singapore plays the

[88] As of December 1999, the Lao PDR and Vietnam remain two of handful countries to which the US has not yet granted MFN status. As a result, their exports face much higher tariff rates applied under the general tariff schedule. The US granted Cambodia MFN status in 1996. As a WTO member, Myanmar receives permanent and unconditional MFN status.

[89] Since 1977, the Community has consistently afforded special treatment to the countries considered by the UN as the "least advanced" of the developing countries, including the Lao PDR and Cambodia. These special arrangements consist of complete exemption from duty for industrial products and admission of a wide range of agricultural products under zero-duty rates. The EU withdrew access to GSP for goods from Myanmar on human right grounds primarily because of concerns about forced labor practices.

role of a management hub, while production and assembly of components are located across ASEAN countries.[90]

7.4 Accelerated Domestic Reform

Since the second half of the 1980s, the new member countries have made significant initial progress in undertaking policy reforms toward market-oriented economies. Vietnam embarked on comprehensive economic reforms (*doi moi*) in 1986 and the Lao PDR followed suit introducing the New Economic Mechanism (NEM). Myanmar began to reform its economic policies and started to take steps during the late 1980s to open the economy and increase the role of markets. The end of the Cold War led to a UN-sponsored election in 1993 in Cambodia and it implemented a bold plan for reconstruction and rehabilitation. Under these initial reforms, macroeconomic management has been improved, the activities of private sector have been increasingly recognized, and trade and investment policies have been unilaterally liberalized. Despite these achievements, the legacy of centrally planned systems remains in a number of forms, such as inefficient state-owned enterprises in Vietnam or the multiple exchange rate system in Myanmar. In addition, the new members' development potential is often constrained by the poor state of physical and human capital, limited institutional capacity, and poor infrastructure.

The process of implementing AFTA accelerates domestic reforms. The Common Effective Preferential Tariff (CEPT) scheme under AFTA involves binding liberalization schedules, and identifying and eliminating NTBs at all tariff line levels. The CEPT is based on the principle of "reciprocity", which implies that the new members have to reciprocate to receive concessions.[91] This requires the new members to harmonize their customs nomenclatures, based on the Harmonized Commodity Description and Coding System (HS) of the World Customs Organization (WCO). AFTA also accelerates the implementation of the GATT Valuation Agreement by the new member countries.

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[90] In addition to the traditional role of entrepot, Singapore's role in Southeast Asia as a manufacturing base and management hub is increasingly important. For instance, Singapore has become an important international trading hub for electronics industry. Many transnational firms have located regional headquarters (RHQ) activities in Singapore in order to source components and parts and to coordinate geographically dispersed activities. Singapore is playing an integrative role in Asia through such procurement and RHQ activities (Dobson and Chia, 1997).

[91] Under the CEPT scheme, four lists, -- the Inclusion List (IL), the Temporary Exclusion List (TEL), the Sensitive List (SL), and the General Exceptions List (GEL), -- are used as key instruments to determine the pace and scope of the liberalization. The IL consists of the items subject to the tariff reductions immediately to bring them down to the range of 0-5 percent by the year 2002 (2006 for Vietnam, 2008 for the Lao PDR and Myanmar, and 2010 for Cambodia). The items in the TEL are initially excluded from tariff reductions, but these items are to be transferred to the IL by 2000 beginning from 1996 and then reduced to 0-5 percent by 2002. The SL is the list of unprocessed agricultural products and to be phased into the IL between 2001-2003 and to be in the 0-5 percent range by 2010 (2013 for Vietnam, 2015 for the Lao PDR and Myanmar, and 2017 for Cambodia). In principle, the GEL is intended to consist of items, which satisfy Article XX of the GATT (ASEAN Secretariat 1995). A key feature of the CEPT is that the concessions are granted on a reciprocal, product by product basis. There are three conditions for a product to be eligible for concessions under the CEPT. 1) The product has to be included in the IL of the both importing and exporting countries; 2) to receive concessions, the product must have an CEPT tariff of 20 percent or below. 3) It has to satisfy the local content requirement of 40 percent (Chapter 2).

The loss of tariff revenues associated with tariff reductions requires the development of the alternative revenue sources which in turn accelerates needed fiscal reforms. Import duties remain an important source of the new members' government revenues, accounting for 23 percent for the Lao PDR, 25 percent for Vietnam and 46 percent in Cambodia in 1996. Cambodia's heavy reliance on Customs duties as a source of revenues is mainly attributed to the weak performance of other revenue collection. This implies a strong need to implement domestic tax reforms in conjunction with the AFTA reforms. As a part of these reform efforts, Cambodia introduced a Value Added Tax (VAT) in January 1999 (Chapter 4).

Increasing competition from ASEAN partner countries stimulates both private and public sectors by urging private sectors to increase competitiveness. It also helps heighten awareness within the public sector of the need for domestic reforms in a wide range of areas, including measures to provide macroeconomic stability, to formulate legal and regulatory frameworks, to strengthen basic infrastructure, and to develop human resources. The binding nature of AFTA offers the opportunity for the new members to "lock in" more liberal trade reforms through international commitments.

Should the new members open their markets to ASEAN before they open to the rest of the world, or should they move directly towards WTO or alternative trading arrangements such as APEC? ASEAN is normally regarded as South-South integration and several economists warn that South-South integration can be ineffective or even harmful. For instance, Panagariya (1994) argues that the small share of ASEAN in world GDP implies that for a majority of products, the most efficient producers are likely to be located outside the region. Therefore, preferential trading will lead to a net trade diversion. Puga and Venables (1997) suggest that the gains from North-South arrangements are likely to be greater than the South-South arrangements, as the South can benefit from improved access to Northern market. Such arrangements also have the important advantage of lowering the costs of imported intermediates from the North even as they increases Northern competition for local firms.

ASEAN accession by the new members bears some of the flavor of North-South integration, however, due to a large economic and technological gap and the transitional nature of these economies. Many policy makers in the new member countries see AFTA as a training ground toward broader liberalization rather than as a goal in itself. They view AFTA, APEC, and WTO not as alternatives but as a path to further integration into a global economy.[92] It is widely thought that the formation of a regional identity such as the ASEAN 10 may strengthen rather than weaken members' extra-regional linkages, providing economies of scale both politically and economically. These include increased bargaining power as a regional group (Andriamananjara and Schiff, 1998) and strengthened trade-FDI links as a regional group (Athukorala and Menon, 1997).

Andriamananjara and Schiff (1998) argue that forming a regional grouping is particularly important for small new members, as they do not possess enough human and physical resources to unilaterally conduct multiple bilateral and multilateral negotiations. Small countries can gain by acting together by articulating shared interests and sharing the fixed

[92] Vietnam became a member of APEC in November 1998. Vietnam's accession to WTO is ongoing. The Lao PDR and Cambodia took steps to prepare for both APEC and WTO memberships.

costs of international negotiations. Cambodia's accession to ASEAN in April 1999 was widely seen as recognition of political stability by ASEAN, and as a signal of Cambodia's commitment towards trade and investment liberalization. Given the history of decades of war and conflicts, associating Cambodia with ASEAN as a regional identity helps create a positive image and to boost the psychology of Cambodia (Kao Kim Hourn, 1999). As an ASEAN member, Cambodia is able to secure greater access to bilateral, regional, and multilateral institutions, and to act more effectively in international negotiations on such issues as industrial cooperation and development assistance.

Given the limited domestic markets of the new member countries, it is particularly important for them to pursue economies of scale and strengthening of trade-FDI links (Athukorala and Menon, 1997). The proximity of the ASEAN 10 countries offers economies of scale large enough to attract multinational firms to locate within ASEAN both for market potential and as production sites. Given factor endowment dissimilarities, the new members are likely to be integrated into the dynamic production network of transnational firms, which offers potential to upgrade their industry structure in line with shifting comparative advantage.

Finally, AFTA can be an important initial step for further liberalization. ASEAN/AFTA offers substantial opportunities for the new members to improve on the status quo relative to the inward-looking strategy, as long as sufficient attention is paid to pursue good policies. However, extending AFTA on a MFN basis will be important, as the discriminatory nature of AFTA bears potential dangers of static and dynamic trade diversion. Clearly, the new members in the future open to the whole world will be better relative to those only open to ASEAN.

7.5 Conclusions

This chapter has considered channels through which dynamic effects of regional integration contribute to the ASEAN new members' growth. Three channels are identified: knowledge, which induces productivity growth, accumulation of physical and human capital and accelerated domestic reforms. Growth depends on changes in these variables and their rates of change can be affected by a regional integration.

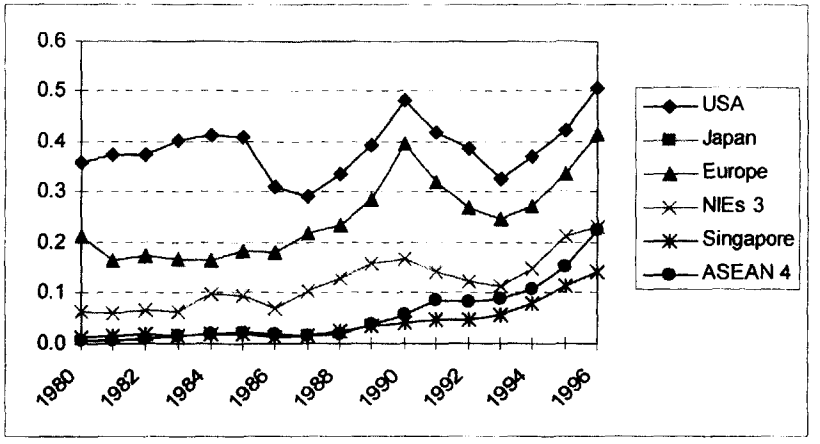
The evidence of direct correlation between regional integration and growth is weak. Rather, ASEAN/AFTA is likely to change the incentives for accumulation, either of a factor of production or of knowledge, and hence countries' rates of growth. Increasing trade openness offers better access to foreign knowledge. Trade liberalization is likely to stimulate returns to capital, both physical and human, which in turn stimulates domestic and foreign investments. In particular, AFTA appears to promote further "vertical" integration of new members into dynamic production network of multinational firms. The process of AFTA accession—and increasing competition—is likely to accelerate domestic reforms in all areas.

However, some cautions should be borne in mind in the integration scheme between developing countries. Potential danger exists that the shift of trade or investment from industrial countries to ASEAN may impose negative effects on productivity growth. In addition, the increased opportunities of technology transfer depend highly on local absorptive

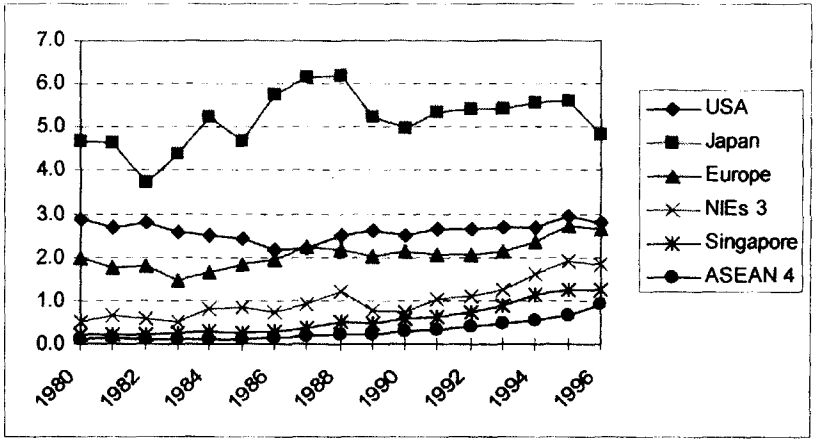
capabilities. How much the new member countries benefit from the ASEAN membership appears to depend heavily on how they use the opportunities it creates to improve their domestic policies.

Annex 7.A-1. Imports of Capital and Transport Equipment as Percentage of GDP

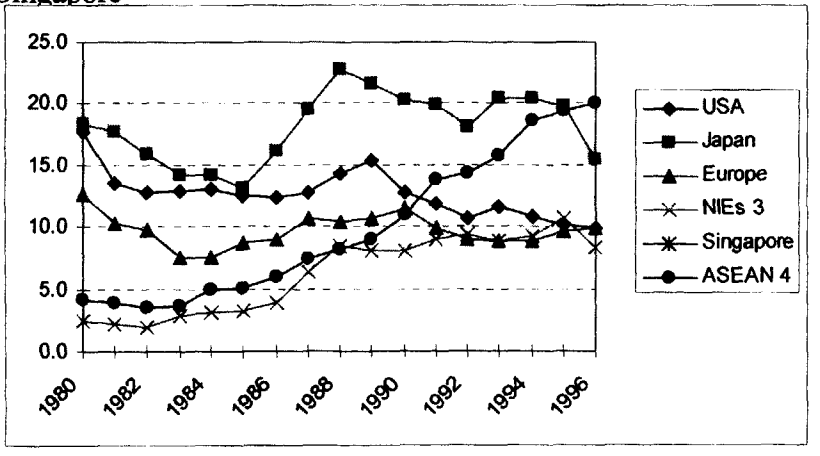
Japan



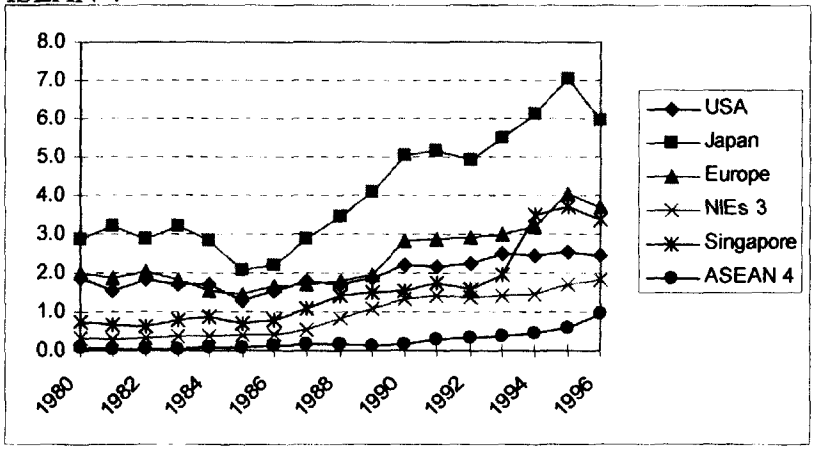
NIEs 3



Singapore



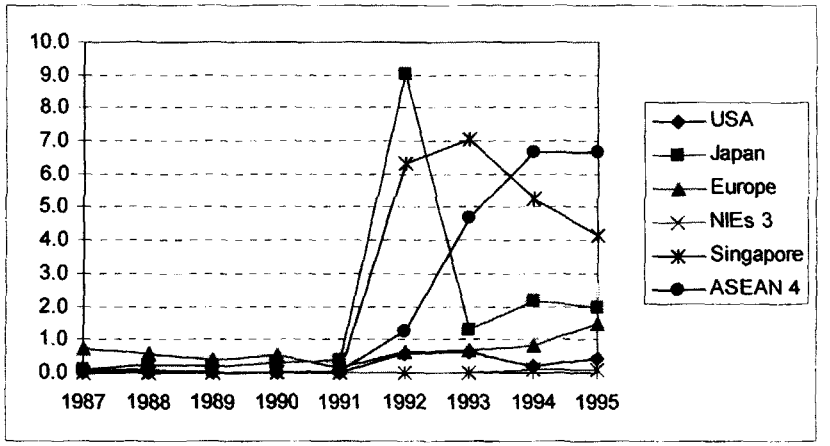
ASEAN 4



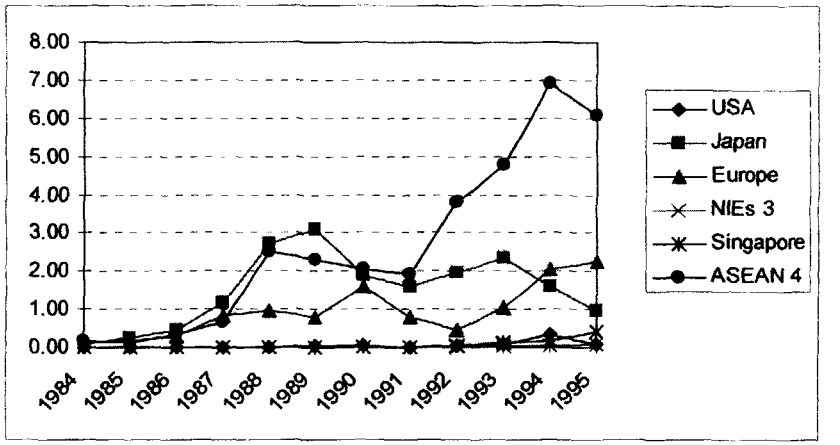
Source: Authors' simulation results; UN COMTRADE System; World Bank, *World Development Indicators,* various issues.

Annex 7.A-2. Imports of Capital and Transport Equipment as Percentage of GDP

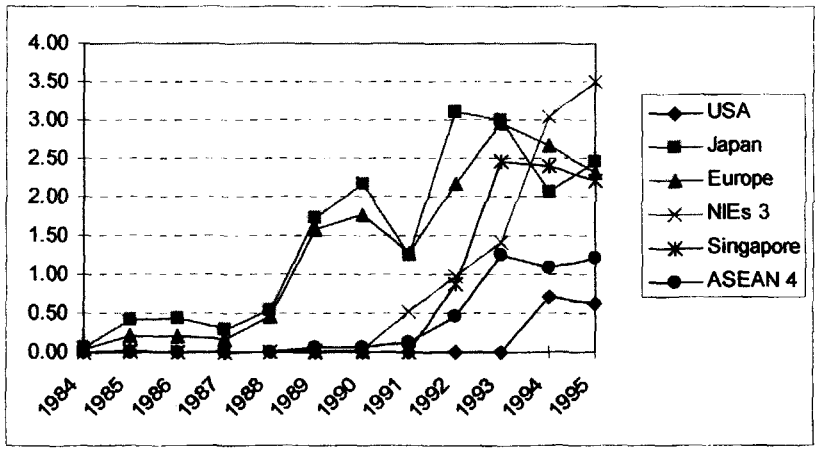
Cambodia



Lao PDR



Vietnam



Note: Taiwan (China) is not included in NIEs 3 before 1994. These figures do not include trade with the former CMEA countries due to the non-availability of the data.
Source: Authors' simulation results; UN COMTRADE System; World Bank, *World Development Indicators*, various issues.

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