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2005

Follow-up Study on the Impact of APEC Investment Liberalization and Facilitation

APEC
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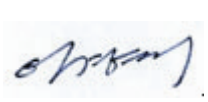
Foreword

FOREWORD

The Follow-up Study on the Impact of APEC Investment, Liberalization and Facilitation aims to analyze the economic effects in a quantitative manner. This is a follow-up on the previous study carried out under the APEC Economic Committee (EC) in 2002. The original report found that the APEC Individual Action Plans (IAPs) are not necessarily required to be comprehensive or standardized with other economies and it called for continuous updates and improvements in IAPs. Accordingly, the key element for the follow-up study is updating the quantification of investment barriers through improvements in the comprehensiveness and consistency of IAPs.

In the new study, the economic model simulations are based on the updated investment barriers quantified by information from the 2004 IAPs and recent world economic data. The main findings remain broadly consistent with those of the 2002 study. First, all member economies will benefit from investment liberalization. Second, the growth in FDI spurred by investment liberalization will be in complementary relationship with trade volume. Import and export trade volume grows by 0.26 to 0.27 percent respectively as a result of investment liberalization.

My special thanks go to Dr. Kenichi Kawasaki for leading the study and Mr. Goushi Kataoka for compiling the updates.



Dr Kyung Tae Lee
Chair, APEC Economic Committee
Seoul, October 2005

Summary

SUMMARY

It has been stressed on a number of occasions and in various articles that higher economic growth in the APEC region has largely been led by expansion in foreign direct investment (FDI) inflows as well as exports. Moreover, the experience of the Asian crisis in 1997 taught us that what is required for sustainable growth is long-term physical capital such as FDI rather than speculative financial investment that can be withdrawn in a short time period. Reduction of investment barriers and enhancement of the environment for further investment have become key elements to achieve the Bogor Goals, in addition to traditional liberalization of trade in goods and services.

The main objective of this study is to analyze the economic effects of investment liberalization and facilitation in a quantitative manner following up on the previous study on "The Impact of APEC Investment Liberalization and Facilitation," which was carried out under the APEC Economic Committee (EC) in 2002. The key element for the follow-up study is updating the quantification of investment barriers through improvements in the comprehensiveness and consistency of the information in the Individual Action Plan (IAP). Moreover, the economic model simulations are conducted based on the updated investment barriers quantified by the information in the IAP 2004 and recent data on the world economy.

The main findings of the study remain broadly unchanged from the previous 2002 study. First, all member economies will benefit from investment liberalization. Those benefits will be larger for economies with steeper investment barriers, although this is dependent on internal and external FDI stock prior to investment liberalization. Second, the growth in FDI spurred by investment liberalization will have a complementary relationship with trade volume. Trade volume for both imports and exports will grow as a result of investment liberalization.

IAPs are updated and improved continually. Therefore, it is important to undertake periodic follow-up assessments of the anticipated impacts of APEC actions in terms of evaluating the current state of investment liberalization and facilitation in the region.

Introduction

1. INTRODUCTION

It has been stressed on a number of occasions and in various articles that higher economic growth in the APEC region has largely been led by expansion in FDI inflows as well as exports. Moreover, the experience of the Asian crisis in 1997 taught us that what is required for sustainable growth is long-term physical capital such as FDI rather than speculative financial investment that can be withdrawn in a short time period.

However, investment liberalization continues to face persistent resistance, especially among advocates of protection of domestic industries. In addition, solid growth in FDI requires, along with broader measures, transparency and stability in relevant legal schemes, predictability in FDI, assurance of business latitude for activities of foreign corporations, and other measures to reduce investment barriers and develop relevant laws.

In this regard, reduction of investment barriers and enhancement of the environment for further investment have become key elements to achieve the Bogor Goals, in addition to traditional liberalization of trade in goods and services.

The study on “The Impact of APEC Investment Liberalization and Facilitation” was carried out under the APEC Economic Committee (EC) in 2002, in order to analyze quantitatively the economic effects of investment liberalization and facilitation. Since the Committee was established in November 1994 at the 6th APEC Ministerial Meeting in Jakarta, it has been involved in a broad range of research and analysis in support of APEC’s work on trade and investment liberalization and facilitation, which is the principal goal of APEC’s activities.

There were two main objectives in the 2002 study. One was to quantify the investment barriers in the APEC member economies. This was the first attempt to quantify investment barriers based on the descriptions of investment-area activities in the Individual Action Plans (IAP) of the APEC member economies, which is vital in showing the state of progress made in APEC toward the goals announced at Bogor. The other objective was to estimate the economy-wide impact of investment liberalization and facilitation, when investment barriers are eliminated. Key messages from the outcomes of quantitative model simulations include: first, all APEC member economies will benefit from investment liberalization and facilitation, in terms of real GDP; and second, FDI and trade may have a complementary relationship, that is, increases in FDI will create trade.

Quantitative analysis of investment rather than trade liberalization and facilitation is still a difficult task. Although there have been several signs of progress, much remains to be done. The 2002 study has achieved an important point but, more importantly, it has clarified the issues for future studies. For example, it must be noted that IAPs are developed voluntarily by each APEC member economy and so they lack both comprehensiveness and standardization with other economies. The presented quantification may not exactly reflect reality in some areas. Development of IAPs with greater comprehensiveness and in adjustment with the various economies will clarify where we stand vis-à-vis the Bogor Goals. Such IAP data will be extremely useful in economic analysis, as well as for investors in making investment decisions.

IAPs are updated and improved continually. Therefore, it is important to undertake periodic follow-up assessments of the anticipated impact of APEC actions in terms of evaluating the current state of investment liberalization and facilitation in the region. In fact, in response to a report to the Investment Expert Group (IEG) in February 2003, the vast majority of the member economies requested that the 2002 study be followed up and updated. The follow-up study will respond to the acceptance of this requirement by the EC Chair.

The first key element for the follow-up study is improvements in the comprehensiveness and consistency of IAPs, which will clarify where we stand vis-à-vis the Bogor Goals. Improvements to

IAPs were also recommended in the Report to APEC Economic Leaders by the APEC Business Advisory Council (ABAC) in October 2002. Moreover, the model simulations are conducted based on the updated investment barriers quantified by information from IAP 2004.

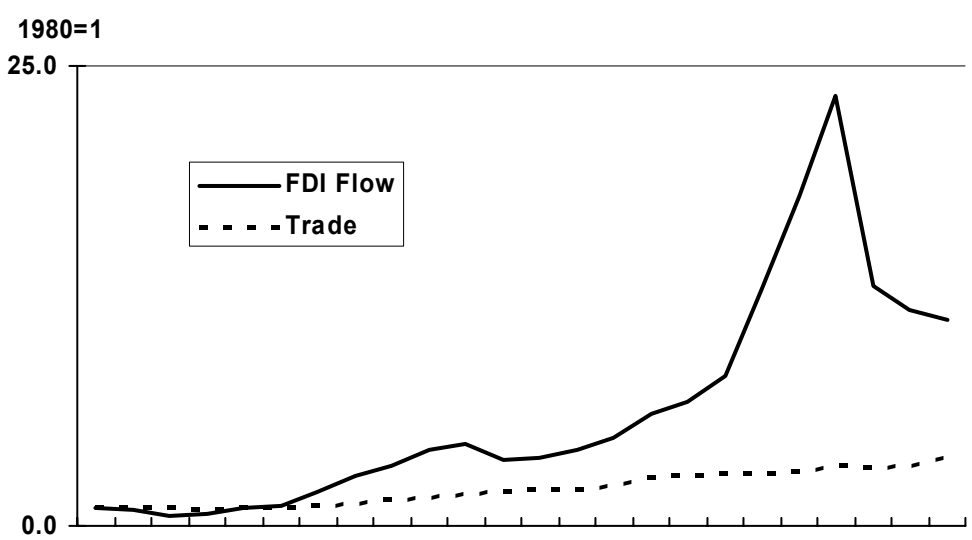
The structure of this study is as follows. Following this introduction, the recent developments of international investment in APEC will be looked at in Chapter 2. After the presentation of the revisions of the quantified FDI barriers in Chapter 3, the updated estimates of the impact of investment liberalization as shown by CGE (Computable General Equilibrium) model simulations will be discussed in Chapter 4. Chapter 5 concludes this study.

Developments of International Investment in APEC

2. DEVELOPMENTS OF INTERNATIONAL INVESTMENT IN APEC

FDI flows have steadily expanded and exceeded 1 trillion US dollars annually in 1999,[1] as seen in Chart 2-1. Although this amount has declined since 2001, its level in 2003 was still more than 10 times the level of two decades ago and far surpassed the pace of increase in worldwide trade volume (three to four times over the past two decades).

Chart 2-1 Trends in FDI Flow and Trade in Goods



Source: IMF International Financial Statistics

On the other hand, the stock of FDI worldwide amounted to around 6 trillion US dollars in 2000 and exceeded 8 trillion US dollars in 2003, reaching a level of more than 10 times that in 1980, as shown in Table 2-1. Examining the respective shares of developed and developing economies, one discovers that around 90 percent of the investor economies and about 70 percent of the host economies are developed economies; FDI between developed economies clearly continues to account for the majority of worldwide FDI.

[1] Inward FDI worldwide in 2000 amounted to approximately 1.4 trillion US dollars, while outward FDI reached about 1.2 trillion US dollars according to UNCTAD (2004).

Table 2-1 Trends in FDI Stock

FDI outward stock (Billion US dollars)						
	1980	1985	1990	1995	2000	2003
World	559.6	738.8	1,758.2	2,897.6	5,983.3	8,196.9
Developed economies	499.4	664.9	1,629.0	2,582.8	5,163.8	7,272.3
Developed Share of world	89.2%	90.0%	92.7%	89.1%	86.3%	88.7%

FDI inward stock (Billion US dollars)						
	1980	1985	1990	1995	2000	2003
World	692.8	972.2	1,950.3	2,992.1	6,089.9	8,245.1
Developed economies	390.7	569.7	1,399.5	2,035.8	4,011.7	5,701.6
Developed Share of world	56.4%	58.6%	71.8%	68.0%	65.9%	69.2%

Source: UNCTAD *World Investment Report*

As was discussed in the 2002 study, the first factor that can be seen as contributing to the rapid expansion of FDI from the latter half of the 1990s is the increase in cross-border mergers and acquisitions (M&As)[2]. Internationalization, technological innovation, and shrinking product life cycles have exposed companies to even stronger competitive pressures, requiring even greater efficiency in their investment activities. As a result, investor companies have come to place strategic emphasis not on greenfield investment, i.e. brand-new investment in plant and equipment in the host countries, but more on cross-border M&A, where they can promptly make use of the tangible and intangible assets that local companies already hold (manufacturing lines, human resources, sales and distribution networks, and other know-how).

The second factor contributing to the expansion of FDI is the worldwide drive to liberalize trade and investment. At the multilateral level, several agreements related to investment have taken effect under the WTO system created in 1995 through the Uruguay Round negotiations. Among these are the Trade-Related Investment Measures (TRIM) Agreement, which sets out provisions on investment measures related to trade in goods, and the General Agreement on Trade in Services (GATS), which covers FDI in the service sector.

Efforts at the bilateral level to protect or liberalize FDI have accelerated since 1990, with the number of bilateral investment treaties (BITs) climbing. There has also been a surge in treaties concluded to avoid double taxation, as well as in free trade agreements (FTAs) that provide for the protection and liberalization of investment. At the same time, progress in autonomous deregulation and privatization in individual countries, typified by China's moves toward a market economy, have enhanced the predictability, transparency and stability of markets and contributed to the expansion of FDI.

The APEC economies have generally enjoyed a steady expansion in the amount of inward FDI (on a flow basis), which reached approximately US$570 billion in 2000, as shown in Table 2-2-A. This amount corresponds to about 41 percent of the inward FDI worldwide and is second in scope only to the inward FDI in EU countries (about US$670 billion, approximately 48 percent). Although the amount of FDI inflows have decreased since 2001, in particular in North America, in line with those worldwide trends, the Asia-Pacific region can be said to play an important role today as a highly profitable target for investment.

In 2003 the recipient of the largest single share of investment among the APEC economies was China, which accelerated its moves toward the adoption of a market economy by such steps as

[2] See JETRO (2001)

accession to the WTO, and which became the region's largest host economy for the first time in history. China is followed by the United States (which had been the largest host economy until then); Hong Kong, China; Mexico; and Singapore.

Table 2-2-A Trends in Inward FDI Flow in APEC Economies

(Million US dollars)

	1990	1995	2000	2001	2002	2003
Australia	8,128	11,970	13,071	4,006	13,978	7,900
Brunei Darussalam	3	583	549	526	1,035	2,009
Canada	7,582	9,255	66,791	27,487	21,030	6,580
Chile	661	2,956	4,860	4,200	1,888	2,982
China	3,487	37,521	40,715	46,878	52,743	53,505
Hong Kong, China	3,275	6,213	61,939	23,775	9,682	13,561
Indonesia	1,092	4,346	▲ 4,550	▲ 2,977	145	▲ 597
Japan	1,753	41	8,323	6,241	9,239	6,324
Korea	759	1,249	8,572	3,683	2,941	3,752
Malaysia	2,611	5,815	3,788	554	3,203	2,474
Mexico	2,633	9,655	16,586	26,776	14,745	10,783
New Zealand	1,735	3,659	3,347	1,911	823	2,017
Papua New Guinea	398	595	96	63	21	101
Peru	41	2,557	810	1,144	2,156	1,377
Philippines	550	1,574	1,345	982	1,792	319
Russia		2,065	2,714	2,469	3,461	1,144
Singapore	5,575	11,591	17,217	15,038	5,730	11,409
Chinese Taipei	1,330	1,559	4,928	4,109	1,445	453
Thailand	2,575	2,070	3,350	3,813	1,068	1,802
United States of America	48,422	58,772	314,007	159,461	62,870	29,772
Viet Nam	180	1,780	1,289	1,300	1,200	1,450
APEC	92,791	175,826	569,747	331,439	211,196	159,118
World	208,646	335,734	1,387,953	817,574	678,751	559,576
APEC Share of World	44.5%	52.4%	41.0%	40.5%	31.1%	28.4%

Source: UNCTAD *World Investment Report*

The APEC economies play an important role not only as host economies but also as investor economies. Investment originating from APEC economies in 2000 (on a flow basis) exceeded 300 billion US dollars in 2000 and remained at a high level of around 250 billion US dollars in 2003, as shown in Table 2-2-B. This accounted for about 40 percent of the world's outward FDI[3]. The largest investor economy among the APEC economies is the United States, the source of about 62 percent of the total FDI from APEC, followed by Japan and Canada.

[3] Investment by the EU countries accounted for approximately 55 percent (about 340 billion US dollars) of the outward FDI worldwide.

Table 2-2-B Trends in Outward FDI Flow in APEC Economies

(Million US dollars)

	1990	1995	2000	2001	2002	2003
Australia	994	3,284	829	12,228	7,576	15,108
Brunei Darussalam		20	▲ 3	9	8	5
Canada	5,237	11,462	44,675	36,113	26,409	21,542
Chile	8	752	3,987	1,610	294	1,395
China	830	2,000	916	6,884	2,518	1,800
Hong Kong, China	2,448	25,000	59,375	11,345	17,463	3,769
Indonesia	▲ 11	1,319	150	125	116	130
Japan	48,024	22,630	31,558	38,333	32,281	28,800
Korea	1,052	3,552	4,999	2,420	2,617	3,429
Malaysia	129	2,488	2,026	267	1,904	1,370
Mexico	223	▲ 263	984	4,404	930	1,390
New Zealand	1,594	▲ 337	1,300	▲ 1,116	376	188
Papua New Guinea	8	0	▲ 2	109	1	3
Peru	50	8	0	74	0	60
Philippines	22	98	▲ 108	▲ 160	59	158
Russia		606	3,177	2,533	3,533	4,133
Singapore	2,034	4,467	5,298	17,063	3,699	5,536
Chinese Taipei	5,243	2,983	6,701	5,480	4,886	5,679
Thailand	154	887	▲ 22	162	106	557
United States of America	30,982	92,074	142,626	124,873	115,340	151,884
Viet Nam						
APEC	99,020	173,030	308,466	262,756	220,115	246,936
World	242,057	358,235	1,186,838	721,501	596,487	612,201
APEC Share of World	40.9%	48.3%	26.0%	36.4%	36.9%	40.3%

Source: UNCTAD *World Investment Report*

Outward and inward FDI stocks of selected economies in 2001 are shown in Table 2-3. The United States and Europe are the main sources of and destinations for FDI. Japan is much more important as a source than as a destination. Inward FDI exceeds outward FDI in most of the other APEC economies except Canada, Japan, Chinese Taipei and the United States. Among the APEC member economies, Hong Kong, China; and Singapore had high inward FDI stock over GDP ratios.

Table 2-3 Outward and Inward FDI Stocks

(Billion US dollars)

	Outward		Inward	
Australia	93.6	(26.2)	99.5	(27.8)
Canada	250.4	(35.0)	207.4	(29.0)
Chile	11.9	(17.9)	43.7	(65.7)
China	32.7	(2.8)	384.2	(33.1)
Hong Kong, China	352.6	(216.6)	406.1	(249.5)
Indonesia	2.5	(1.7)	55.8	(38.4)
Japan	300.1	(7.2)	48.7	(1.2)
Korea	29.0	(6.8)	39.5	(9.2)
Malaysia	24.4	(27.7)	51.6	(58.6)
Mexico	11.9	(1.9)	136.0	(22.0)
New Zealand	5.9	(11.6)	19.0	(37.6)
Peru	0.6	(1.2)	11.5	(21.2)
Philippines	0.7	(1.0)	10.1	(14.1)
Russia	32.4	(10.5)	35.6	(11.5)
Singapore	75.0	(88.3)	117.4	(138.4)
Chinese Taipei	54.7	(19.4)	31.0	(11.0)
Thailand	2.6	(2.3)	32.3	(28.1)
United States of America	1,381.7	(13.7)	1,279.4	(12.7)
Viet Nam	0.0	0.0	15.4	(47.1)
Rest of Asia	4.1	(0.6)	40.4	(5.4)
Rest of America	141.9	(11.2)	398.4	(31.6)
Europe	3,463.7	(38.8)	2,614.3	(29.3)
Rest of the World	62.4	(4.6)	257.7	(19.1)

Note: The figures in the parenthesis show the ratio over the GDP in per cent.
Sources: - *World Investment Report 2004*, United Nations
- *International Direct Investment Yearbook 2004*, OECD
- *Annual Foreign Direct Investment Statistics of Japan 2004*, Ministry of Finance of Japan
- *Foreign Direct Investments in the USA 2004*, Bureau of Economic Analysis of the USA
GTAP Version 6 database

The FDI stock data were used to estimate the output of FDI employing the methodology in Petri (1997). FDI output was estimated by multiplying capital incomes associated with FDI and ratios of output to capital income in the Global Trade Analysis Project (GTAP) database. These output estimates are shown in Table 2-4, which compares the output of outward FDI with conventional exports, and the output of inward FDI with conventional imports. The scale of FDI output and international trade indicate that these two are equally important in the world economy.

Table 2-4 FDI Output and Trade

(Billion US dollars)

	Outward FDI output	Exports	Inward FDI output	Imports
Australia	64.7	73.9	69.9	72.9
Canada	173.1	271.3	143.3	243.1
Chile	8.2	23.8	42.1	19.9
China	22.6	388.4	440.1	281.2
Hong Kong, China	243.7	105.2	370.6	114.4
Indonesia	1.7	69.1	52.3	45.4
Japan	207.4	478.4	23.7	413.1
Korea	20.1	191.8	30.2	162.6
Malaysia	16.9	128.1	44.6	76.7
Mexico	8.3	166.3	81.2	149.8
New Zealand	4.1	19.0	14.9	15.8
Peru	0.4	8.5	7.1	8.6
Philippines	0.5	38.8	8.1	43.8
Russia	22.4	108.2	20.5	74.0
Singapore	51.8	116.9	108.1	124.5
Chinese Taipei	37.8	139.0	34.2	116.8
Thailand	1.8	81.3	21.5	63.9
United States of America	954.9	907.5	1,017.4	1,300.9
Viet Nam	0.0	15.8	11.4	25.1
Rest of Asia	2.9	111.6	32.4	116.6
Rest of America	98.1	218.5	251.5	241.8
Europe	2,393.9	3,047.3	1,734.3	3,010.7
Rest of the World	43.1	436.0	168.0	423.2

Sources: GTAP Version 6 database and author's estimates

Revisions of the Quantified FDI Barriers

3. REVISIONS OF THE QUANTIFIED FDI BARRIERS

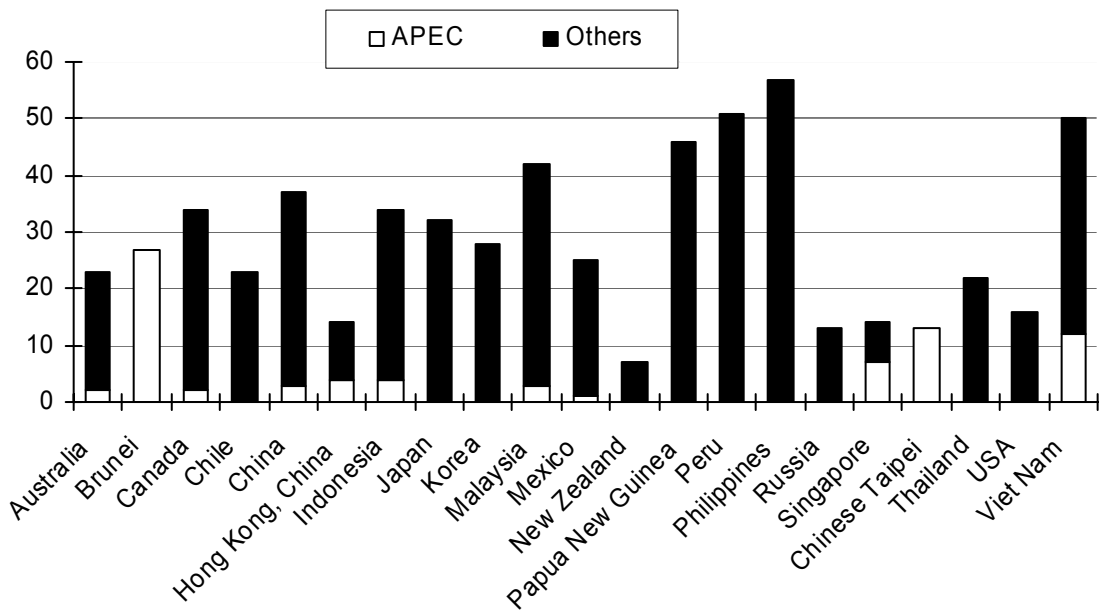
There are three important elements in the methodology of quantifying investment barriers in the 2002 study. First, the information on existing FDI restrictions was primarily collected from "Individual Action Plans (IAPs) 2001 of APEC Member Economies." However, this was complemented with further information from other sources. Investment barriers were updated from earlier studies, and quantified in detail by both sector and economy. Second, investment barriers were defined and classified according to the aspect of investment that they most affect, such as a) market entry, b) ownership and control, and c) operations. Third, such qualitative information was transferred to certain numerical indicators by frequency and coverage measures, which is one well-established methodology of quantifying qualitative information such as investment barriers.

Among others, one significant shortcoming in the 2002 study must be noted. Investment barriers were first quantified based on "Individual Action Plans (IAPs) 2001 of APEC Member Economies," *APEC IAPs database*. However, it was found that IAPs are not necessarily required to be comprehensive or standardized with other economies. Although the data were complemented with substantial information from other sources, for example, that issued by the OECD, the European Commission, the US Department of State, and the Asia-Europe Meeting (ASEM) Database,[4] the quantification presented in the study might not exactly reflect reality in some areas. It should be noted that investment barriers are measured as relatively higher in those economies where descriptions of investment-area activities in the IAPs are more detailed and accurate.

In fact, the share of APEC information, such as IAPs and the APEC Guide to Investments, was around 10 percent of the total source information on FDI barriers on average. However, there are certain differences in this share among the member economies. There is a good reason why APEC information does not have a higher ratio. IAPs are developed voluntarily by member economies, and they are not necessarily required to be comprehensive. On the other hand, information from the other sources should also be qualified. Several investment barriers may remain listed even after they have already been removed in member economies.

[4] Further information can be found in: *Guide to Investment Regimes of the APEC Member Economies 1999*, APEC, APEC Committee on Trade and Investment; *Market Access Sectoral and Trade Barriers Database*, European Commission, GD Trade Database; *Country Commercial Guides: Fiscal Year 2001*, US Department of State, Bureau of Economic and Business Affairs; *The Asia-Europe Investment Promotion Action Plan (IPAP)*, European Commission, The Asia-Europe Meeting (ASEM) Database; and "OECD Member Countries: Reservations to the Code of Liberalization of Capital Movements", OECD, *Foreign Direct Investment and Capital Movements*, Documentation.

Chart 3-1 The Share of APEC Information



In addition to the quantitative aspect in the coverage of IAPs, the qualitative aspect should also be noted. As discussed in the 2002 study, FDI barriers or impediments in this study are defined as any government policy measures that may distort decisions about where to invest, or in what form. According to the UNCTAD, those FDI barriers are classified by what aspect of the investment they most affect—establishment, ownership and control, or operations—as follows.

Classification of FDI Barriers

Restrictions on market entry
- Bans on foreign investment in certain sectors
- Quantitative restrictions (e.g. limit of 25 percent foreign ownership in a sector)
- Screening and approval (sometimes involving national interest or net economic benefits tests)
- Restrictions on the legal form of the foreign entity
- Minimum capital requirements
- Conditions on subsequent investment
- Conditions on location
- Admission taxes

Ownership and control restrictions
- Compulsory joint ventures with domestic investors
- Limits on the number of foreign board members
- Government-appointed board members
- Government approval required for certain decisions
- Restrictions on foreign shareholders' rights
- Mandatory transfer of some ownership to locals within a specified time (e.g. 15 years)

Operational restrictions
- Performance requirements (e.g. export requirements)
- Local content restrictions
- Restrictions on imports of labor, capital and new materials
- Operational permits or licenses
- Ceilings on royalties
- Restrictions on repatriation of capital and profits

This means that the definition of FDI barriers in this study covers, *inter alia*, those measures which do not discriminate between foreign and domestic investments, and which are put in place to protect health and the environment; to meet conservation, safety and security needs; and to fulfill obligations under multilateral agreements. However, higher costs induced from managing a business from a distance, or higher market prices for input in one economy compared with another, are not barriers to FDI.

Specific examples of barriers that certain member economies include in IAPs and that are listed in the other sources include phytosanitary certificates for the export of plants and food, health certificates for the import of food, licenses and quoting for the import of substances depleting the ozone layer, and licenses for pharmaceuticals and medicines. These technical barriers may exist widely in the member economies, but they are included only in limited cases. This makes it difficult for economists to compare investment barriers. Information in IAPs may be standardized with other economies.

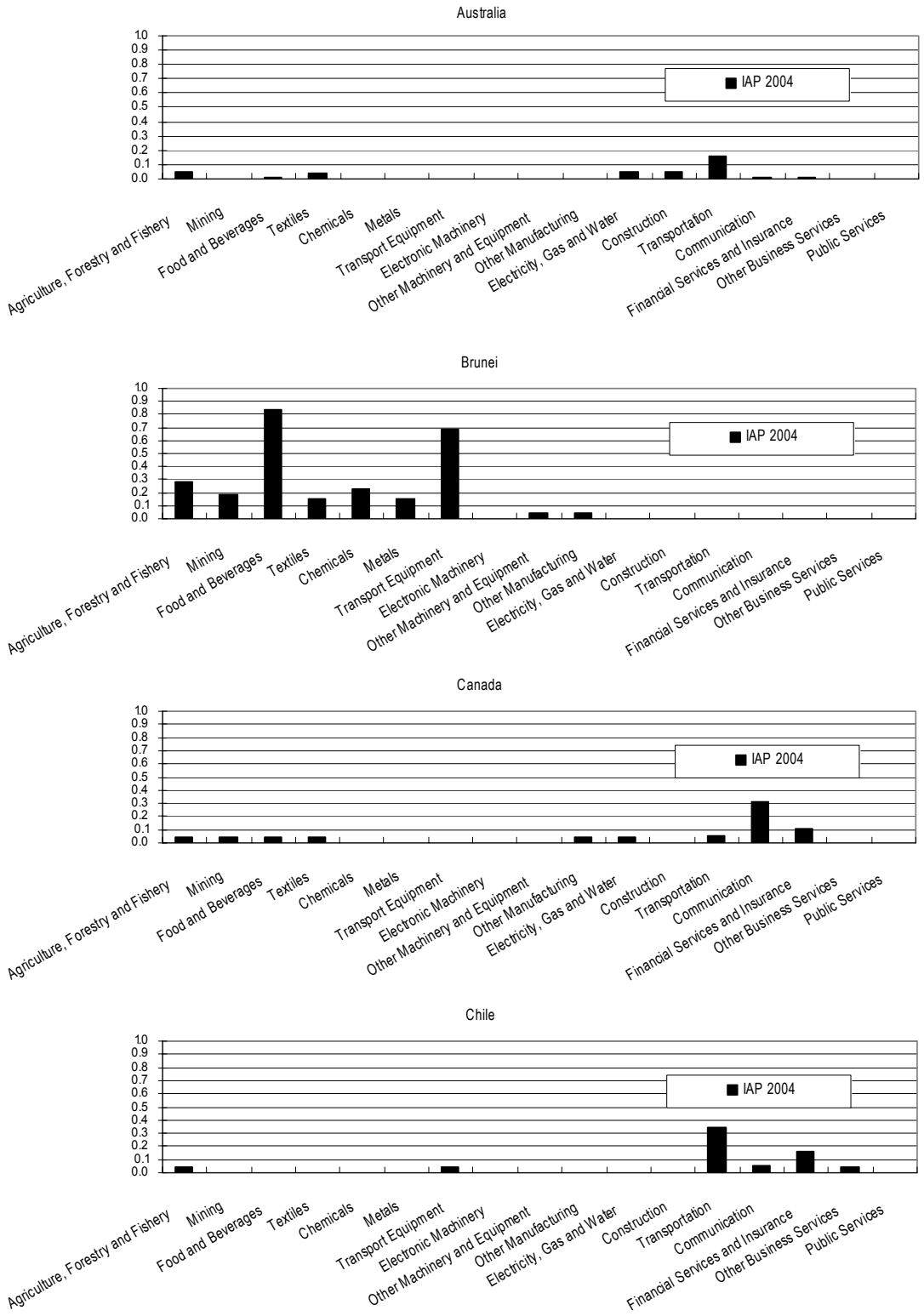
Conceptually, it is possible to identify prices or rate of return wedges, or tariff equivalents, for FDI restrictions.[5] However, it is very difficult to isolate the effects of FDI barriers, identify an appropriate benchmark or determine what the return would be in the absence of FDI barriers. Nevertheless, frequency and coverage measures provide useful insights into the extent of restrictions across countries and sectors over time. They do not provide any information about the likely impact of barriers on prices or rates of return, which are key factors to input into the general equilibrium modeling of the impacts of FDI barriers.

In the 2002 study, new tariff equivalent estimates were adopted. Several shortcomings of earlier frequency and coverage approaches[6] were addressed, applying the methodology in Hardin and Holmes (1997) concerning the following points: which impediments to include as separate components of the index, the weights to assign to each type of barrier, and the weights to assign when aggregating across sectors or countries. The same methodology of frequency and coverage measures is adopted in this follow-up study. Those weights applied to individual FDI barriers are presented in the Annex.

Quantified FDI barriers are shown in Chart 3-2. Most economies have at least some significant barriers to FDI. The only economies where barriers are low across the board are Hong Kong, China; New Zealand; and the United States. Calculating the simple average of those barriers among the sectors in the economies, it is suggested in Chart 3-3 that there may be significant differences in the degree of FDI barriers among APEC economies. By sector, most economies tend to have higher barriers in several service sectors, such as Communication, Financial Services and Insurance, and Other Business Services, when those are compared to other sectors within the individual economy.

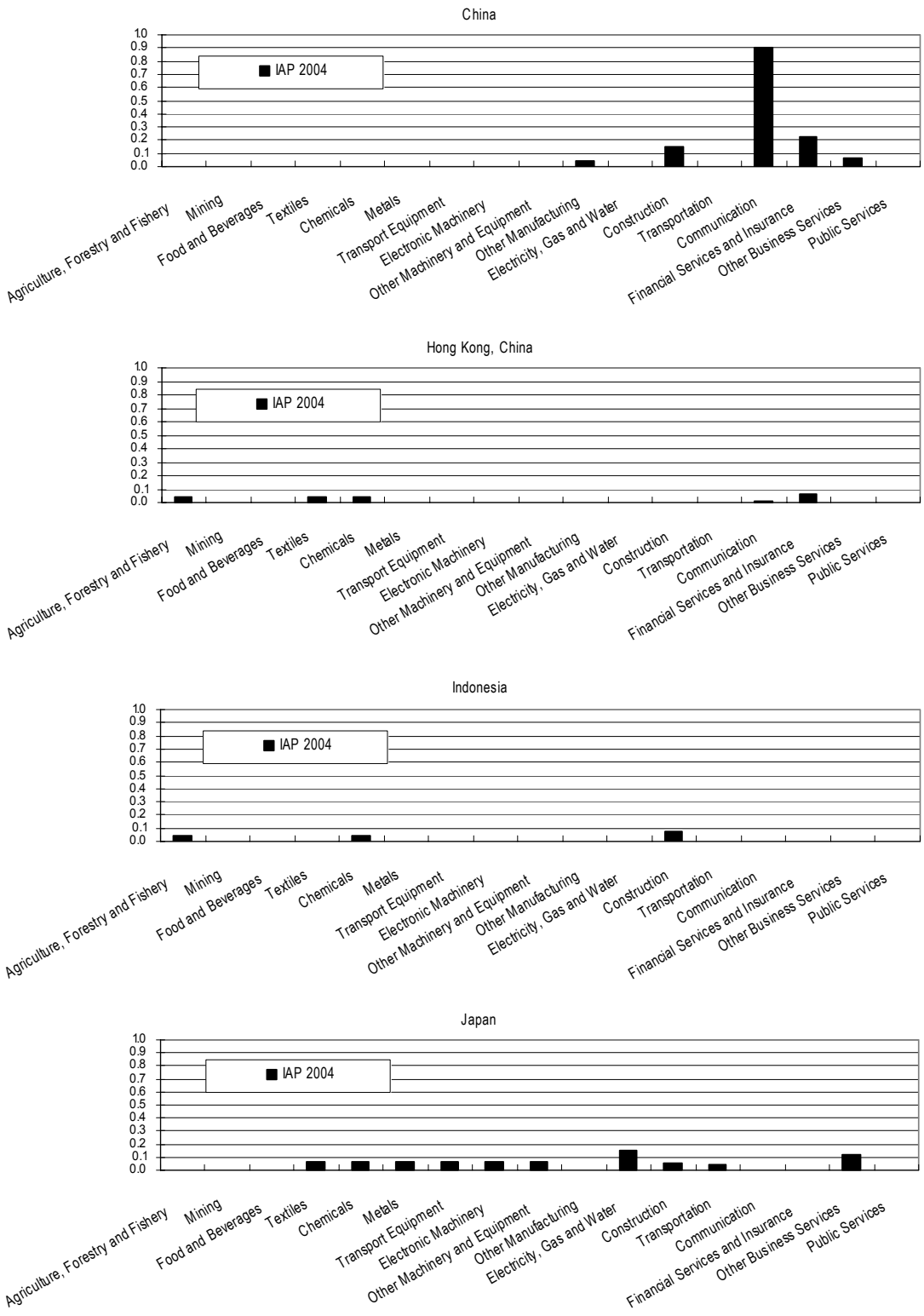
[5] Earlier studies that estimated FDI barriers have concentrated on service sectors. See Kaleeswaran et al. (2000) for the estimates of barriers to trade in banking services, and Warren (2000) for those in the telecommunications sector, which are the basis of the ad valorem equivalents of FDI barriers in Hanslow et al. (2000).
[6] See, for example, Hoekman (1995) for an earlier attempt.

Chart 3-2 Quantification of FDI Barriers*



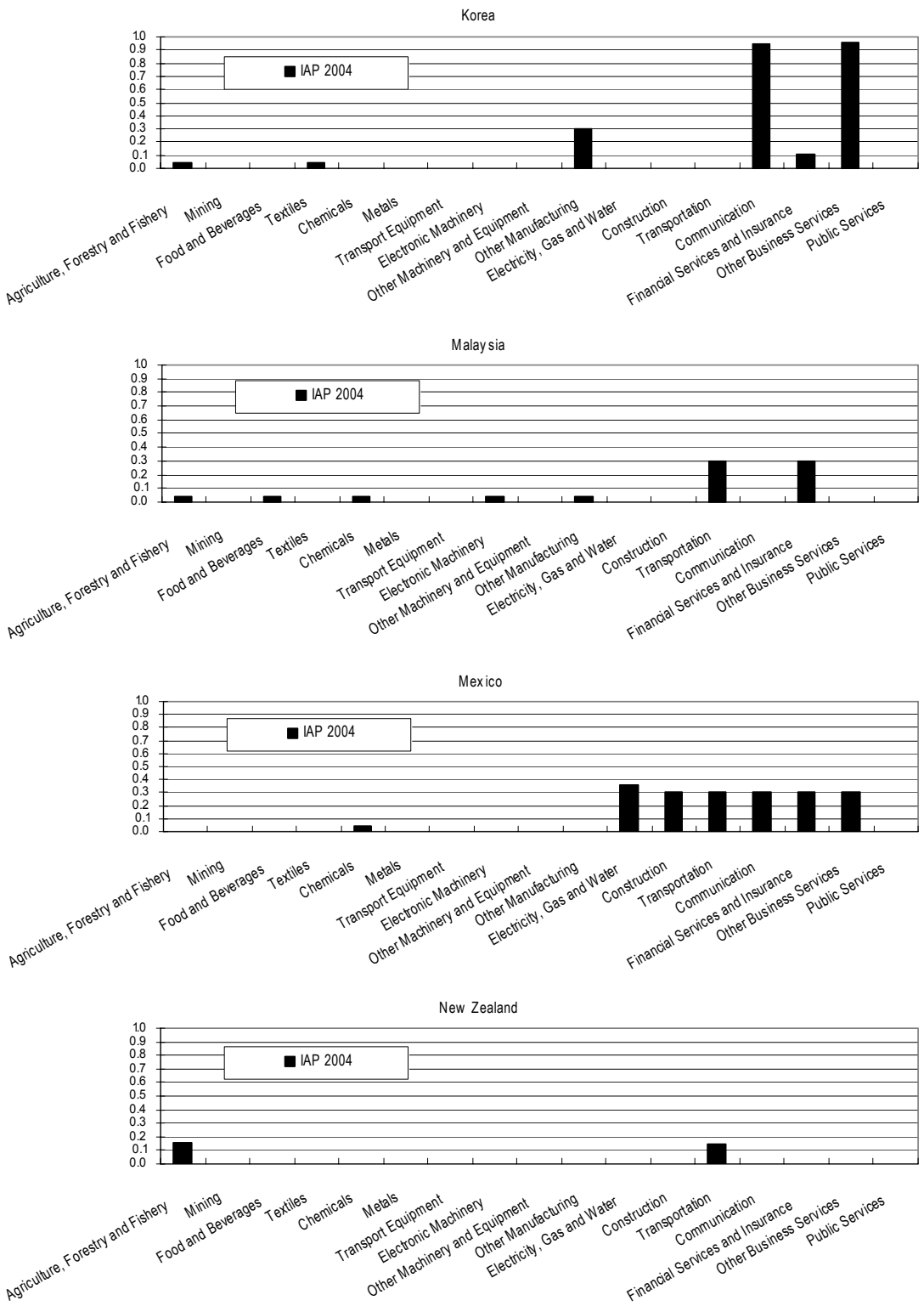
* These graphs offer limited information as they are created based on voluntary reporting by members. Therefore, they are not an appropriate source for comparing differences of actual investment barriers among member economies.

Chart 3-2 Quantification of FDI Barriers (Cont.)*



* These graphs offer limited information as they are created based on voluntary reporting by members. Therefore, they are not an appropriate source for comparing differences of actual investment barriers among member economies.

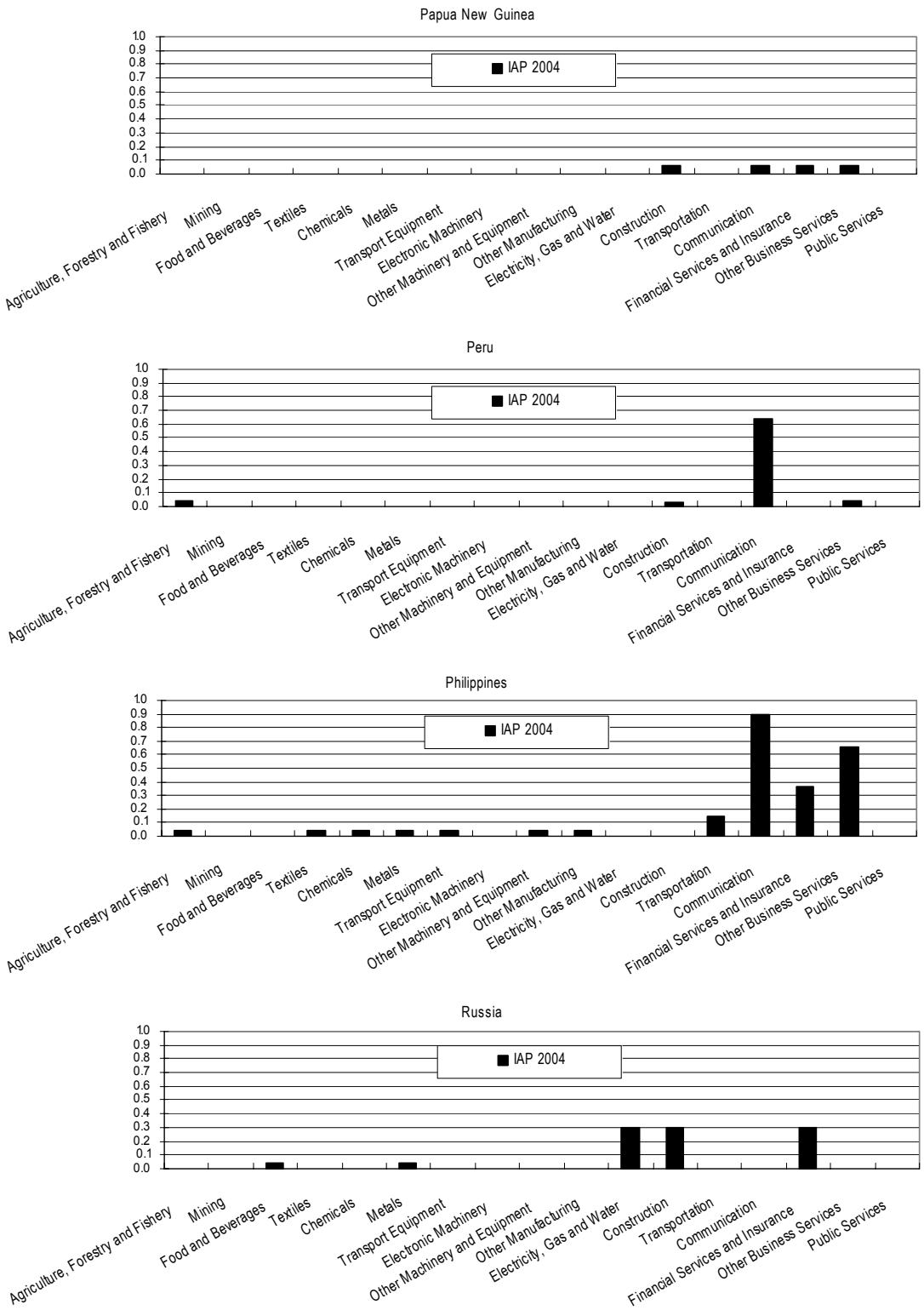
Chart 3-2 Quantification of FDI Barriers (Cont.) [7*]



[7] Improvements after the completion of IAP 2004, including liberalization in the financial sector of Malaysia, can be found on the APEC IAP website. (www.apec-iap.org).

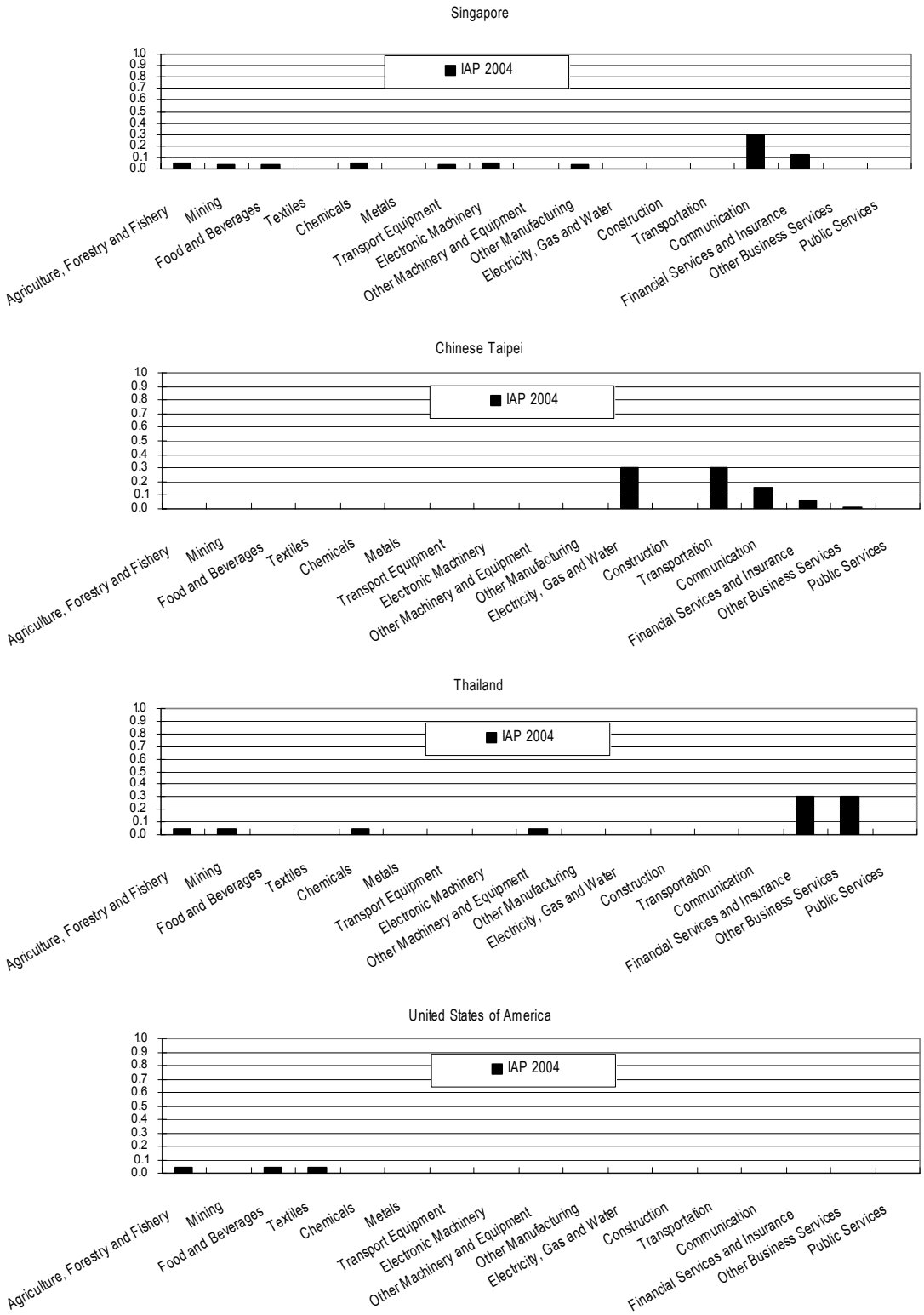
[*] These graphs offer limited information as they are created based on voluntary reporting by members. Therefore, they are not an appropriate source for comparing differences of actual investment barriers among member economies.

Chart 3-2 Quantification of FDI Barriers (Cont.) *



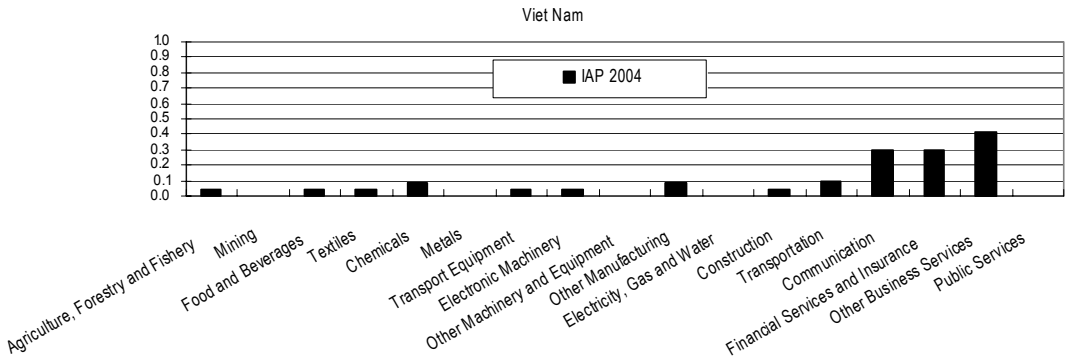
* These graphs offer limited information as they are created based on voluntary reporting by members. Therefore, they are not an appropriate source for comparing differences of actual investment barriers among member economies.

Chart 3-2 Quantification of FDI Barriers (Cont.) *



* These graphs offer limited information as they are created based on voluntary reporting by members. Therefore, they are not an appropriate source for comparing differences of actual investment barriers among member economies.

Chart 3-2 Quantification of FDI Barriers (Cont.)*



Source: Author's calculation based on "Individual Action Plans (IAPs) 2004 of APEC Member Economies," APEC

Chart 3-3 Extent of FDI Barriers

* The graphs offer limited information as they are created based on voluntary reporting by members. Therefore, they are not an appropriate source for comparing differences of actual investment barriers among member economies.

The Impact of Investment Liberalization and Facilitation

4. THE IMPACT OF INVESTMENT LIBERALIZATION AND FACILITATION

The CGE model simulations for analysis of the impact of the APEC investment liberalization and facilitation are also updated, based on the revised quantification of investment barriers and recent data on the world economy.

4.1 A CGE Model

A CGE model numerically simulates the general equilibrium structure of the economy. It is built on the Walrasian general equilibrium system, in which the central idea is that market demand equals supply for all commodities at a set of relative prices. As well, a CGE model has solid micro-foundations that are theoretically transparent. Functional forms are specified in an explicit manner, and interdependencies and feedback are incorporated. Therefore, the model provides a framework for assessing the effects of policy and structural changes on resource allocation by clarifying "who gains and who loses."

These characteristics differentiate it from the partial equilibrium model, which is not economy-wide; the macroeconomic model, which is not multi-sectoral; and the input-output model, in which agents do not respond to changes in prices. Moreover, the multi-country model is required to analyze international economic affairs such as trade and investment policies, which affect not just one but a number of economies.

The database for the project is constructed on the basis of the Global Trade Analysis Project (GTAP) Version 6 database, which was published in spring 2005 and describes the most updated state of the world economy, although its base year is 2001. In comparison, the previous 2002 study used 1997 as its base year. The GTAP database is one of the most comprehensive global databases available for the analysis of Asia-Pacific economies. It has also been utilized in studies carried out by the APEC EC[8] during the past several years.

The GTAP database currently consists of 57 disaggregated sectors and 87 economies, which are aggregated to the appropriate version for simulations. The APEC member economies will be concerned mainly about the effects on their own individual economies. In this study, economies are aggregated into 23 areas, and 19 areas are allocated to APEC economies. The APEC member economies are disaggregated individually where data are available. (Data for Brunei and Papua New Guinea are not available.) Industries/commodities are aggregated to 17[9] following a standard classification in the national accounts, taking into consideration the importance of industries in the economy as a whole. Compared with earlier studies, such as Petri (1997) and the FTAP model[10] used in Dee and Hanslow (2000), the industries are disaggregated in more detail by the APEC economies individually.[11]

[8] See, for example, APEC (1997), which analyzed the impact of trade liberalization and facilitation in accordance with the Manila Action Plan (MAPA).
[9] Further disaggregation in industries is limited by computational capacities.
[10] See Hanslow, Phamduc and Verikios (2000) for the description of the FTAP model, which is a version of GTAP with FDI.
[11] Regions are aggregated to six in Petri (1997) and 19 in the FTAP model. However, industries are aggregated to three (primary, secondary and tertiary) in both models.

Table 4-1 Regional and Commodity Aggregation

	Economies		Commodities/Industries
AUS	Australia	AGR	Agriculture, Forestry and Fishery
CAN	Canada	MNG	Mining
CHL	Chile	PFD	Food and Beverages
PRC	China	TXL	Textiles
HKC	Hong Kong, China	CHM	Chemicals
INA	Indonesia	MTL	Metals
JPN	Japan	TRN	Transport Equipment
ROK	Korea	ELE	Electronic Machinery
MAS	Malaysia	OME	Other Machinery and Equipment
MEX	Mexico	OMF	Other Manufacturing
NZ	New Zealand	EGW	Electricity, Gas and Water
PER	Peru	CNS	Construction
RP	Philippines	T_T	Transportation
RUS	Russia	CMN	Communication
SIN	Singapore	FSI	Financial Services and Insurance
CT	Chinese Taipei	OSP	Other Business Services
THA	Thailand	PUB	Public Services
USA	United States of America		
VN	Viet Nam		
SAS	Rest of Asia and Oceania		
LTN	Rest of America		
WEU	Europe		
ROW	Rest of the World		

The CGE model employed for this APEC/EC study is built on the basis of the GTAP model[12] Version 4.1. Sensitivity of model properties to key parameters is one essential aspect of model development. There are four types of behavior parameters in the GTAP model: elasticities of substitution (in both demand and production), transformation elasticities that determine the degree of mobility of primary factors across sectors, the flexibilities of regional investment allocation, and consumer demand elasticities. All these parameters are set as they are derived from the GTAP Version 6 database for this analysis.

The GTAP model is a standard CGE model, which depicts the behavior of households, governments, and global sectors across each economy in the world. It is composed of regional models, which are linked through international trade. Prices and quantities are simultaneously determined in factor markets and commodity markets by the accounting relationships, the equilibrium conditions specified by the behavior of economic agents, and the structure of international trade. The model includes three main factors of production: labor, capital and land. Labor and capital are used by all industries, but land is used only in agricultural sectors. Capital and intermediate inputs are traded, while labor and land are not traded between regions.

A standard version of the GTAP model includes several key assumptions. First, perfect competition, and thus constant return to scale, is assumed. Second, imperfect substitution in goods and services between the home economy and abroad, and those among different origins of economies, are assumed by Armington parameters.[13] Third, the amount of total labor, which is one of the factor endowments, is fixed. This means that the model assumes full employment and no unemployment. The amount of total capital is also fixed in the standard GTAP model.

[12] See Hertel (1997) for details of the GTAP model.
[13] See Armington (1969).

However, a standard version of the GTAP model can be modified for dealing with capital formation. Important “dynamic” effects of capital accumulation are introduced[14] into the standard static model. According to the growth theory, a medium-run growth or accumulation effect induces additional savings and investment. The induced savings and investment (larger capital stock) in turn link to the production capacities, causing a further increase in income.

In general, a permanent shock to the GDP is translated into a shock to the steady state level of capital. The magnitude of this effect crucially depends on the assumed underlying saving behavior. Under the assumption of a fixed saving ratio, the change in steady state capital stock is proportional to the change in the steady state level of GDP. In contrast, with the endogenous saving ratio, which is determined by the condition that the opportunity cost of postponed consumption should equal the net marginal return of capital, the medium-run impact can differ quite substantially from the static impact. The latter “dynamic” decision of saving to an infinite horizon is incorporated[15] in the current model.

According to the conventional theory of capital movements, the static impact of capital transfer on economic welfare is suggested through the efficiency and terms of trade effects. From the perspective of resource allocation efficiency, the international capital movement enhances the economic welfare of both the investor country and the host country.

In addition, the dynamic impact of capital movement is expected due to capital accumulation and a rise in productivity. In an open economy, receiving capital from abroad enables investment beyond the level of domestic savings and contributes to economic growth by expanding the country’s future production capacity. Moreover, it is expected that the technology that a multinational corporation possesses will be transferred to its subsidiary company and will be diffused to other companies and other industries, thereby contributing to greater productivity in the host country.

The earlier studies of incorporating FDI behavior into a CGE model are classified into three groups. The first group does not model FDI explicitly, but when examining the impact of services trade liberalization, the studies may implicitly include the reduction of FDI barriers. The second group does not explicitly model FDI or the reduction of investment barriers. Investment liberalization is assumed to affect certain variables, such as the extent of capital mobility, and the effects of this are then simulated. The third group explicitly models FDI and captures many of the important economic characteristics of FDI.

The standard GTAP model does not incorporate the behavior of FDI in an explicit manner. In order to assess the impact of investment liberalization and facilitation, the model must be significantly extended. The work of building such a model of the third group is composed of three parts. The first is to estimate FDI data. The FDI stock matrix, which describes bilateral outflow and inflow of FDI stock among the economies, is constructed. The second is to quantify the barriers of investment. These will be utilized for model simulations as exogenous shock variables in order to analyze the impact of investment liberalization. The third is to adjust the model equations to incorporate FDI behavior. The activities of domestic and foreign-owned firms in both production and demand are distinguished.

In order to explicitly model FDI and capture many of the important economic characteristics of FDI, it must be recognized that there are links between parent companies and foreign affiliates and that foreign and domestic firms within a given region are different. In this regard, the activities of domestic and foreign-owned firms are distinguished. However, the scale of the FDI model is significantly larger than the standard CGE model, which does not explicitly incorporate such

[14] See Francois, McDonald and Nordstrom (1996) for the methodology to implement this mechanism into the GTAP model.
[15] With the endogenous saving ratio, international capital movement is irrelevant to national capital formation. The rate of return on capital would not necessarily be equalized across the economies through international capital movements. Therefore, it is assumed that the external balance remains unchanged in the model simulations.

behavior. The model simulations are subject to computational capacity. In fact, in incorporating FDI behavior, the model was forced to face this serious problem. Therefore, FDI-specific equations were simply not incorporated in the simulations in the 2002 study in order to allow detailed descriptions of the outcomes by higher disaggregation both by regions and sectors. The same model was used in this follow-up study to compare the simulation outcomes with those in the 2002 study.

4.2 Simulation Results

The experiments were carried out on the APEC investment liberalization in the case when FDI barriers are eliminated in the APEC member economies.[16] The assumptions on the reduction in capital costs are shown in Table 4-2. The FDI barriers quantified in Chart 3-2 are translated assuming that the levels of FDI barriers are on average as high as the import protection given by the GTAP database.[17]

[16] It was assumed that FDI barriers in the APEC economies will be removed regardless of the source regions of FDI inflows in accordance with the APEC spirit of "open regionalism."

[17] The FDI output weighted average of FDI barriers in the APEC economies shown in Chart 3-2 is approximately 0.03, which is compared with the corresponding average in the 2002 study of 0.11. Meanwhile, the average rate of import protection in the APEC economies derived by the difference between the import prices in the world market and those in individual domestic markets was 5.1 percent in the 2002 study. The FDI barriers in Chart 3-2 are translated by multiplying by 5.1/0.11.

Table 4-2 Reductions in Capital Costs
(Percent of Sectoral Capital Prices)

	AGR	MNG	PFD	TXL	CHM	MTL	TRN	ELE	OME	OMF	EGW	CNS	T_T	CMN	FSI	OSP	PUB
Australia	0.218	0.000	0.024	0.194	0.000	0.000	0.000	0.000	0.000	0.000	0.218	0.243	0.753	0.024	0.024	0.000	0.000
Canada	0.237	0.237	0.237	0.210	0.000	0.026	0.000	0.000	0.000	0.210	0.237	0.000	0.263	1.630	0.552	0.000	0.000
Chile	0.628	0.000	0.000	0.000	0.000	0.000	0.628	0.000	0.000	0.000	0.000	0.000	5.415	0.863	2.590	0.706	0.000
China	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.256	0.000	0.961	0.000	5.765	1.441	0.384	0.000
Hong Kong, China	1.856	0.206	0.206	1.856	1.856	0.000	0.206	0.206	0.000	0.206	0.000	0.000	0.000	0.413	2.475	0.000	0.000
Indonesia	0.371	0.041	0.000	0.041	0.371	0.000	0.000	0.000	0.000	0.000	0.000	0.659	0.000	0.000	0.000	0.000	0.000
Japan	0.001	0.000	0.001	0.009	0.009	0.009	0.009	0.009	0.009	0.000	0.022	0.007	0.007	0.000	0.001	0.018	0.000
Korea	0.057	0.000	0.000	0.057	0.000	0.000	0.000	0.000	0.000	0.427	0.000	0.000	0.000	1.345	0.149	1.359	0.000
Malaysia	0.416	0.000	0.416	0.000	0.416	0.046	0.046	0.416	0.046	0.416	0.000	0.000	2.776	0.000	2.776	0.000	0.000
Mexico	0.000	0.000	0.000	0.000	0.141	0.000	0.000	0.000	0.000	0.000	1.271	1.059	1.059	1.059	1.059	1.059	0.000
New Zealand	1.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.993	0.000	0.000	0.000	0.000
Peru	0.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.107	0.000	2.292	0.000	0.161	0.000
Philippines	0.097	0.000	0.000	0.097	0.097	0.097	0.097	0.000	0.097	0.097	0.000	0.000	0.364	2.182	0.873	1.600	0.000
Russia	0.000	0.000	0.061	0.000	0.000	0.061	0.000	0.000	0.000	0.000	0.456	0.456	0.000	0.000	0.456	0.000	0.000
Singapore	0.974	0.865	0.865	0.000	0.974	0.000	0.865	0.974	0.000	0.865	0.000	0.000	0.000	6.491	2.596	0.000	0.000
Chinese Taipei	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.000	0.800	0.427	0.160	0.027	0.000
Thailand	0.154	0.154	0.000	0.000	0.154	0.000	0.000	0.000	0.154	0.000	0.000	0.000	0.019	0.000	1.155	1.155	0.000
United States of America	0.116	0.013	0.116	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.013	0.000
Viet Nam	0.313	0.000	0.353	0.313	0.627	0.039	0.313	0.313	0.000	0.666	0.000	0.353	0.784	2.351	2.351	3.292	0.000

4.2.1 Macroeconomic impact

The macroeconomic impact of the APEC investment liberalization is shown in Table 4-3. The real GDP of the APEC member economies as a whole would increase by 0.12 percent, mainly supported by capital formation, which would expand by 0.27 percent. The world real GDP would increase by 0.07 percent. The APEC trade would be boosted by 0.26 to 0.27 percent. Also, the APEC economic welfare measured by the equivalent variation would improve by about 17 billion US dollars. These estimated gains are approximately half of those shown in the previous 2002 study. This is primarily attributed to those differences in the magnitude of initial FDI barriers and the share of FDI output in the total output. FDI barriers in the current study are one-third smaller on average. Meanwhile, the share of FDI capital stock in the total capital stock, and thus the share of FDI production in the total production, has increased by around 50 percent.

Table 4-3 Macroeconomic Impact of APEC Investment Liberalization (Rates of Change in Percentage)

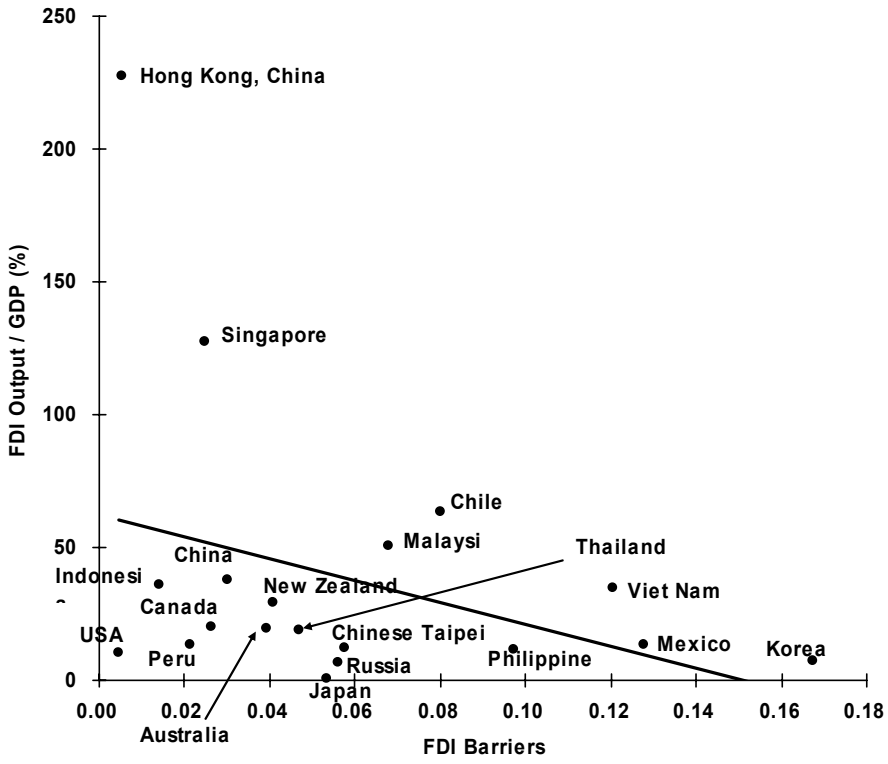
	Real GDP	Capital Stock	Exports	Imports	EV *
Australia	0.12	0.33	0.14	0.16	0.33
Canada	0.08	0.22	0.05	0.04	0.43
Chile	2.65	4.97	2.45	2.19	1.33
China	0.21	0.54	0.16	0.21	1.55
Hong Kong, China	0.18	0.33	0.16	0.14	0.23
Indonesia	0.11	0.18	0.09	0.18	0.15
Japan	0.00	0.00	0.03	0.05	0.19
Korea	0.46	0.96	0.34	0.34	1.33
Malaysia	0.67	1.47	0.53	0.78	0.36
Mexico	1.77	2.68	1.58	1.46	8.45
New Zealand	0.26	0.57	0.28	0.29	0.09
Peru	0.26	0.41	0.23	0.23	0.11
Philippines	0.47	0.81	0.62	0.47	0.24
Russia	0.07	0.17	0.03	0.09	0.16
Singapore	0.46	1.01	0.78	0.64	0.18
Chinese Taipei	0.20	0.49	0.21	0.23	0.42
Thailand	0.47	0.74	0.41	0.47	0.38
United States of America	0.00	0.00	0.13	0.13	0.71
Viet Nam	1.61	3.36	1.47	0.78	0.35
Rest of Asia and Oceania	-0.02	-0.05	-0.01	0.00	-0.10
Rest of America	-0.02	-0.04	0.00	0.03	-0.04
Europe	-0.01	-0.02	0.00	0.01	-0.29
Rest of the World	-0.02	-0.04	-0.03	0.01	0.02
APEC Total	0.12	0.22	0.27	0.26	16.98
World	0.07	0.12	0.12	0.12	16.57

Note: Changes in Equivalent Variation in billion US dollars

All the APEC member economies would gain in real GDP from investment liberalization. Those gains range from 2.7 percent in Chile to virtually zero in Japan and the United States. On balance,

the impact on real GDP is larger in developing APEC economies both in Asia and central/south America, where it is seen in percentage changes. As discussed above, these real GDP effects of investment liberalization depend on the magnitude of initial FDI barriers and the share of FDI output in total output,[18] which is shown in Chart 4-1. However, it should be noted that these two may have a trade-off relationship.

Chart 4-1 FDI Barriers and Output



The magnitudes of real GDP gains among the economies are parallel to the expansion of capital stock at a macro level. The rates of change in real GDP are approximately half of those in capital stock.

As far as welfare improvements are seen in terms of absolute changes, it is shown that outstanding gains are suggested in Mexico, which covers around half of that of the APEC economies as well as of the world economy as a whole. Mexico is followed by China, Chile and Korea.

The theoretical literature indicates that FDI and trade can be either substitutes or complements, depending on the assumptions. Empirical evidence such as Petri (1997) finds that FDI and trade are likely to be complements at the economy-wide level in the APEC economies. The current simulation result suggests that FDI and trade exhibit a complementary relationship. It is shown that investment liberalization results in an expansion of imports and therefore also exports.

4.2.2 Sectoral impact

The impact of investment liberalization is much more significant when it is looked at on a sectoral

[18] It must be noted that neither income receipts from outward FDI nor income payments to inward FDI are counted in the current simulation. The initial level of outward FDI stock relative to inward FDI stock is another key factor in distinguishing economic gains among the economies.

basis. These variations are indicated not just in terms of the magnitude of the adjustments but also in their direction. Sectoral adjustments in output, capital stock and trade due to the APEC investment liberalization are shown in Table 4-4-A through to Table 4-4-D.

Investment liberalization would expand output in most of the sectors in the APEC member economies. Such expansion would be larger in heavy manufacturing sectors than in primary and services sectors, with few exceptions. It may be suggested that sectors that benefit from investment liberalization are the capital-intensive sectors in general. However, such differences in sectoral gains are much less important than sectoral adjustments caused by trade liberalization, in which case the winners and losers resulting from the reallocation of production endowments in line with the relative competitive scenario are quite apparent.

Table 4-4-A Sectoral Output Adjustments
(Rates of Change in Percentage)

	AGR	MNG	PFD	TXL	CHM	MTL	TRN	ELE	OME	OMF	EGW	CNS	T_T	CMN	FSI	OSP	PUB
Australia	0.13	0.08	0.09	0.12	0.14	0.17	0.17	0.15	0.19	0.13	0.13	0.31	0.16	0.09	0.09	0.11	0.06
Canada	0.22	0.10	0.11	0.07	0.07	0.05	-0.01	-0.13	-0.04	0.12	0.14	0.20	0.08	0.30	0.12	0.07	0.05
Chile	0.65	2.05	1.36	2.59	2.83	3.13	4.12	4.18	3.62	3.45	2.77	4.54	4.10	2.53	2.79	2.86	0.95
China	0.01	0.33	-0.02	-0.02	0.26	0.39	0.37	0.14	0.37	0.28	0.21	0.52	0.18	0.58	0.27	0.21	0.16
Hong Kong, China	0.01	0.31	0.16	1.19	0.62	0.11	0.14	0.20	0.07	0.18	0.12	0.32	0.09	0.20	0.70	0.09	0.07
Indonesia	0.06	0.12	0.07	0.09	0.21	0.14	0.16	0.12	0.23	-0.03	0.14	0.18	0.12	0.12	0.11	0.12	0.09
Japan	0.02	0.13	0.00	-0.02	0.01	0.02	-0.01	-0.04	0.04	-0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Korea	0.03	0.82	0.13	0.24	0.40	0.54	0.30	0.36	0.55	0.60	0.40	0.92	0.35	0.58	0.40	0.75	0.22
Malaysia	0.32	0.00	0.67	0.07	0.70	0.52	0.66	0.76	0.47	0.62	0.88	1.11	1.24	0.58	1.01	0.09	0.41
Mexico	0.51	0.35	1.11	1.77	1.91	2.26	2.07	1.98	2.18	1.90	1.67	2.66	2.04	1.96	2.08	2.22	1.04
New Zealand	0.38	-0.07	0.25	0.16	0.25	0.21	0.32	0.24	0.26	0.21	0.22	0.48	0.38	0.19	0.23	0.24	0.13
Peru	0.13	0.19	0.19	0.26	0.27	0.15	0.37	0.32	0.48	0.27	0.22	0.41	0.24	0.81	0.24	0.31	0.18
Philippines	0.11	0.97	0.17	0.42	0.51	0.93	0.99	0.53	0.87	0.61	0.46	0.80	0.59	2.85	0.72	0.76	0.27
Russia	0.04	0.05	0.06	0.03	0.03	0.09	0.12	0.01	0.08	0.03	0.07	0.16	0.06	0.03	0.08	0.07	0.06
Singapore	0.02	1.93	0.79	0.24	1.09	0.60	0.88	0.94	0.52	0.92	0.44	0.95	0.25	2.47	1.09	0.26	0.04
Chinese Taipei	0.04	0.34	0.05	0.13	0.27	0.34	0.20	0.18	0.31	0.12	0.25	0.43	0.26	0.20	0.18	0.18	0.09
Thailand	0.06	0.53	0.11	0.38	0.46	0.59	0.55	0.55	0.74	0.46	0.48	0.71	0.50	0.46	0.64	0.83	0.25
United States of America	0.09	0.02	0.02	-0.03	0.01	0.00	0.01	-0.04	0.00	-0.03	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
Viet Nam	-0.13	1.63	-0.08	1.15	2.68	2.76	2.04	2.45	2.29	1.46	0.94	3.33	1.52	2.41	3.55	2.19	0.16
Rest of Asia and Oceania	0.00	0.17	-0.01	-0.07	-0.05	-0.05	-0.04	-0.08	-0.06	-0.06	-0.03	-0.04	-0.03	-0.05	-0.03	-0.03	0.00
Rest of America	0.01	0.08	-0.02	-0.12	-0.04	-0.06	0.00	-0.10	-0.04	-0.06	-0.03	-0.04	-0.02	-0.05	-0.02	-0.02	0.00
Europe	0.02	0.11	0.00	-0.03	0.01	-0.01	0.00	-0.06	0.01	-0.02	-0.01	-0.02	-0.01	-0.04	-0.01	-0.02	0.00
Rest of the World	0.00	0.05	-0.01	-0.10	-0.07	-0.10	-0.06	-0.14	-0.11	-0.08	-0.03	-0.04	-0.02	-0.05	-0.03	-0.04	0.00

Table 4-4-B Sectoral Capital Stock Adjustments
(Rates of Change in Percentage)

	AGR	MNG	PFD	TXL	CHM	MTL	TRN	ELE	OME	OMF	EGW	CNS	T_T	CMN	FSI	OSP	PUB
Australia	0.22	0.12	0.15	0.39	0.19	0.23	0.23	0.21	0.27	0.19	0.23	0.67	1.18	0.15	0.17	0.16	0.16
Canada	0.30	0.20	0.28	0.32	0.11	0.12	0.03	-0.08	0.00	0.36	0.24	0.26	0.48	1.77	0.76	0.09	0.09
Chile	1.42	2.39	2.51	4.07	4.09	4.24	5.70	6.16	5.52	4.55	3.65	6.39	8.02	4.35	7.10	3.97	4.06
China	0.07	0.39	0.09	0.14	0.41	0.56	0.51	0.27	0.52	0.55	0.30	1.77	0.39	2.24	1.26	0.54	0.39
Hong Kong, China	0.50	0.41	0.30	2.84	2.02	0.19	0.43	0.41	0.14	0.38	0.15	0.41	0.17	0.50	2.93	0.14	0.21
Indonesia	0.19	0.16	0.11	0.16	0.42	0.18	0.21	0.16	0.30	0.01	0.17	0.76	0.16	0.15	0.16	0.16	0.21
Japan	0.02	0.14	-0.01	-0.01	0.02	0.02	-0.01	-0.04	0.04	-0.02	0.01	0.01	0.00	-0.01	0.00	0.01	-0.01
Korea	0.17	0.88	0.35	0.61	0.64	0.80	0.65	0.58	0.79	1.23	0.49	1.36	0.76	1.49	0.88	1.46	0.68
Malaysia	0.51	0.05	1.03	0.37	1.20	0.84	1.03	1.32	0.82	1.23	1.01	1.53	4.77	0.82	3.31	0.31	0.89
Mexico	0.89	0.57	1.45	2.41	2.46	2.87	2.71	2.70	2.85	2.35	2.90	5.23	3.07	2.87	3.83	3.13	2.59
New Zealand	0.62	0.00	0.39	0.33	0.39	0.37	0.50	0.39	0.41	0.35	0.28	0.62	1.50	0.28	0.36	0.32	0.34
Peru	0.25	0.25	0.22	0.30	0.34	0.25	0.44	0.35	0.50	0.29	0.44	0.51	0.66	1.84	0.46	0.48	0.45
Philippines	0.28	1.02	0.24	0.59	0.61	1.02	1.10	0.58	0.90	0.74	0.53	0.95	0.85	3.14	1.01	1.27	0.70
Russia	0.08	0.08	0.14	0.10	0.08	0.18	0.20	0.08	0.15	0.09	0.22	0.62	0.15	0.08	0.62	0.12	0.14
Singapore	0.37	2.14	1.31	0.47	1.72	0.81	1.81	1.45	0.77	1.71	0.50	1.20	0.53	3.82	3.30	0.42	0.40
Chinese Taipei	0.11	0.38	0.15	0.26	0.38	0.46	0.32	0.27	0.45	0.26	0.57	0.60	1.36	0.53	0.40	0.25	0.27
Thailand	0.23	0.63	0.22	0.54	0.64	0.72	0.69	0.65	0.92	0.61	0.58	0.87	0.62	0.55	1.26	1.36	0.67
United States of America	0.14	0.05	0.07	0.06	0.00	-0.01	0.01	-0.05	0.00	-0.03	-0.01	0.00	-0.01	-0.01	0.01	0.00	0.00
Viet Nam	0.37	2.06	1.06	2.62	3.71	3.85	3.67	3.79	3.51	2.99	2.18	4.81	3.62	5.06	6.08	3.50	1.68
Rest of Asia and Oceania	0.00	0.18	-0.03	-0.10	-0.06	-0.06	-0.06	-0.10	-0.07	-0.09	-0.04	-0.08	-0.06	-0.06	-0.05	-0.04	-0.04
Rest of America	0.02	0.10	-0.04	-0.14	-0.06	-0.09	-0.02	-0.12	-0.06	-0.08	-0.05	-0.05	-0.06	-0.06	-0.05	-0.04	-0.04
Europe	0.02	0.13	-0.01	-0.04	-0.01	-0.03	-0.01	-0.08	0.00	-0.04	-0.01	-0.03	-0.03	-0.05	-0.02	-0.02	-0.02
Rest of the World	0.00	0.07	-0.03	-0.12	-0.09	-0.12	-0.08	-0.15	-0.13	-0.10	-0.04	-0.06	-0.05	-0.06	-0.06	-0.05	-0.03

Table 4-4-C Sectoral Export Adjustments
(Rates of Change in Percentage)

	AGR	MNG	PFD	TXL	CHM	MTL	TRN	ELE	OME	OMF	EGW	CNS	T_T	CMN	FSI	OSP	PUB
Australia	0.23	0.03	0.15	0.17	0.13	0.16	0.12	0.13	0.18	0.06	0.50	0.18	0.32	-0.25	-0.01	-0.02	-0.01
Canada	0.45	0.14	0.23	0.06	0.03	0.00	-0.04	-0.23	-0.13	0.11	0.63	0.13	0.15	1.30	0.32	0.04	0.12
Chile	-2.32	1.29	0.38	2.97	1.84	2.81	3.44	2.86	2.40	3.53	2.81	1.97	6.76	2.21	2.24	3.57	-2.28
China	-0.17	0.59	-0.22	-0.11	0.19	0.44	0.40	0.09	0.32	0.35	0.23	0.50	0.01	9.90	1.81	0.51	0.22
Hong Kong, China	-0.11	-1.31	0.29	1.46	1.04	-0.03	0.02	0.21	0.05	0.17	-0.05	0.05	-0.05	0.22	1.64	-0.08	-0.17
Indonesia	-0.02	0.08	-0.09	0.08	0.38	0.16	0.34	0.12	0.30	-0.09	0.06	0.43	0.02	-0.30	-0.01	-0.06	-0.06
Japan	0.15	1.11	0.05	-0.06	0.12	0.18	-0.02	-0.04	0.11	-0.07	-0.08	0.09	0.01	-0.36	-0.08	-0.05	0.05
Korea	-0.42	1.31	-0.20	0.20	0.30	0.39	0.12	0.29	0.45	0.72	0.46	0.21	0.12	2.10	0.15	2.44	-0.15
Malaysia	-0.50	-0.70	0.49	-0.05	0.41	0.25	-0.10	0.74	0.39	0.27	0.10	0.07	1.56	-0.58	2.32	-0.17	-0.52
Mexico	-2.36	-1.94	1.15	2.29	1.72	1.72	1.71	1.83	1.97	1.83	2.27	0.95	3.59	3.60	1.87	3.64	-1.08
New Zealand	0.68	-0.85	0.28	0.08	0.16	0.08	0.11	0.01	0.13	0.05	0.04	0.15	0.64	-0.27	-0.10	0.01	-0.11
Peru	-0.24	0.20	0.17	0.44	0.46	0.06	0.77	0.53	0.97	0.58	-0.16	0.56	0.10	4.97	0.06	0.49	-0.12
Philippines	-0.96	0.96	-0.26	0.39	0.44	1.38	1.01	0.52	0.83	0.66	0.64	0.44	1.00	5.50	2.70	3.56	0.16
Russia	0.04	0.05	0.06	-0.08	-0.07	0.07	0.13	-0.07	0.06	-0.04	0.15	0.45	0.00	-0.26	0.20	0.02	0.08
Singapore	0.00	2.12	1.05	0.23	1.14	0.52	0.93	0.94	0.50	1.28	0.52	0.17	0.25	19.61	2.76	0.24	-0.04
Chinese Taipei	0.07	0.49	0.01	0.13	0.31	0.37	0.20	0.17	0.27	0.07	2.04	0.10	0.45	0.27	0.05	0.06	-0.10
Thailand	-0.63	0.56	-0.23	0.30	0.42	0.48	0.48	0.53	0.74	0.38	0.36	0.31	0.41	-0.05	2.60	1.80	-0.16
United States of America	0.42	0.30	0.17	0.13	0.16	0.21	0.21	0.17	0.25	0.02	-0.17	0.05	-0.07	-0.41	-0.09	-0.09	0.04
Viet Nam	-1.07	0.98	-0.15	1.12	1.83	1.42	0.96	2.23	1.69	1.24	0.69	1.18	1.24	2.65	3.91	12.94	0.45
Rest of Asia and Oceania	0.30	0.57	0.06	-0.11	-0.02	0.00	0.03	0.17	-0.02	-0.11	-0.06	0.08	-0.04	-0.38	-0.03	-0.09	0.10
Rest of America	0.13	0.25	-0.05	-0.24	-0.01	-0.04	0.12	-0.14	0.07	-0.12	-0.08	0.02	-0.09	-0.41	-0.07	-0.13	0.04
Europe	0.11	0.23	0.01	-0.03	0.03	0.00	0.01	-0.08	0.03	-0.04	-0.01	0.10	-0.01	-0.32	-0.01	-0.07	0.08
Rest of the World	0.11	0.11	-0.05	-0.18	-0.12	-0.11	-0.09	-0.17	-0.14	-0.20	-0.12	0.02	-0.08	-0.43	-0.08	-0.14	0.02

Table 4-4-D Sectoral Import Adjustments
(Rates of Change in Percentage)

	AGR	MNG	PFD	TXL	CHM	MTL	TRN	ELE	OME	OMF	EGW	CNS	T_T	CMN	FSI	OSP	PUB
Australia	0.05	0.30	0.04	0.05	0.15	0.18	0.19	0.24	0.21	0.17	-0.13	0.15	0.00	0.26	0.21	0.16	0.08
Canada	-0.01	0.16	-0.03	0.02	0.06	0.03	0.03	0.05	0.08	0.01	-0.33	0.20	0.03	-0.38	0.07	0.09	-0.01
Chile	2.97	2.74	1.45	1.20	2.10	2.39	3.38	2.84	3.78	1.60	0.57	2.46	-0.74	1.10	1.60	1.49	2.72
China	0.22	0.26	0.19	0.20	0.23	0.26	0.29	0.23	0.28	0.15	0.10	0.32	0.09	-4.27	-0.54	0.00	0.05
Hong Kong, China	0.10	0.50	0.01	-0.02	0.17	0.27	0.20	0.14	0.23	0.19	0.22	0.15	0.23	0.11	0.14	0.21	0.17
Indonesia	0.19	0.32	0.21	0.11	0.16	0.18	0.19	0.17	0.20	0.16	0.13	0.01	0.19	0.31	0.27	0.15	0.15
Japan	-0.10	-0.01	0.01	0.02	0.04	0.08	0.03	0.14	0.08	0.12	0.09	0.03	0.08	0.23	0.09	0.04	-0.01
Korea	0.37	0.38	0.26	0.16	0.35	0.46	0.51	0.53	0.46	0.27	0.06	0.71	0.34	-0.28	0.38	-0.49	0.31
Malaysia	0.93	1.05	0.84	0.64	0.85	0.75	0.86	0.91	0.82	0.71	1.04	1.45	0.11	1.28	0.01	0.40	0.67
Mexico	2.28	2.81	0.70	0.56	1.27	1.42	1.71	1.69	2.00	1.07	0.75	2.24	0.07	0.12	1.21	0.38	1.53
New Zealand	-0.02	0.46	0.14	0.17	0.28	0.31	0.35	0.41	0.48	0.26	0.17	0.14	-0.01	0.31	0.36	0.31	0.22
Peru	0.34	0.34	0.19	0.10	0.24	0.30	0.20	0.28	0.14	0.38	0.21	0.21	0.24	-1.68	0.37	0.18	0.27
Philippines	0.79	0.51	0.48	0.28	0.48	0.40	0.61	0.56	0.70	0.39	0.06	0.64	-0.04	-1.22	-0.29	-1.06	0.31
Russia	0.09	0.16	0.04	0.06	0.12	0.08	0.13	0.07	0.12	0.09	0.00	0.01	0.13	0.26	0.08	0.08	0.05
Singapore	0.13	1.05	0.06	0.39	0.54	0.62	0.67	0.84	0.69	0.36	0.31	0.36	0.04	-7.55	-0.09	0.51	0.47
Chinese Taipei	0.12	0.27	0.10	0.16	0.18	0.25	0.23	0.22	0.35	0.20	-0.65	0.50	-0.01	0.15	0.19	0.23	0.18
Thailand	0.63	0.46	0.39	0.28	0.43	0.54	0.53	0.55	0.66	0.37	0.31	0.43	0.36	0.52	-0.39	-0.17	0.38
United States of America	-0.24	0.00	0.05	0.13	0.09	0.15	0.11	0.19	0.22	0.16	0.34	0.03	0.10	0.26	0.13	0.07	0.02
Viet Nam	0.85	2.92	0.17	0.79	1.07	2.30	1.43	1.73	2.40	0.90	0.80	2.81	0.89	0.97	1.03	-2.56	-0.09
Rest of Asia and Oceania	-0.09	-0.15	0.03	0.01	0.03	0.00	0.00	0.08	0.00	0.03	0.02	-0.02	0.04	0.18	0.09	0.01	-0.04
Rest of America	-0.06	0.00	0.06	0.04	0.04	0.08	0.01	0.01	0.00	0.10	0.00	0.01	0.08	0.16	0.09	0.06	-0.01
Europe	-0.03	-0.01	0.00	0.00	0.00	0.01	0.00	0.00	-0.01	0.01	0.00	-0.01	0.06	0.14	0.06	0.04	-0.03
Rest of the World	-0.02	0.02	0.04	0.01	0.03	-0.02	-0.02	-0.01	-0.02	0.03	0.02	0.01	0.08	0.26	0.10	0.06	0.01

To be more specific, the changes in sectoral output are largely explained by those in sectoral capital stock. It must again be noted that the output effects depend on the degree of investment liberalization, that is, on the magnitude of initial FDI barriers. Relatively significant increases in the output of certain service sectors can be explained by this factor. In contrast, contractions in certain sectors, although much less significant in their magnitudes, are attributable to inter-sectoral capital movement within the economies.[19]

The impact on trade, in particular exports, of investment liberalization varies much more widely. It is shown that investment liberalization leads to an increase in exports of manufacturing, and to a lesser extent exports of the service sector, in most APEC economies. However, the effect on the primary sector is mixed. The export of primary products would decrease in several Asian and Central/South American economies. The import of primary products from those economies would also decrease in trade partners, although to a lesser extent in terms of rate of change. These results are consistent with the expectation that trade and investment linkage is extensive in the manufacturing sector, in micro perspectives.

There are two possible factors in differentiating the impact of investment liberalization on sectoral exports. First, the economies which would enjoy larger benefits from investment liberalization would face much more inflationary pressure than other economies. Second, significant investment liberalization in certain manufacturing and services sectors would induce inter-sectoral capital movements to those sectors, and therefore limit increases in capital stock in the primary sector. These could result in changes in the relative competitiveness of sectors across the economies.

[19] It should be noted that external balances are fixed in the current model simulation. Therefore, international capital mobility is not allowed.

Conclusion and Recommendations

5. CONCLUSION AND RECOMMENDATIONS

Since the Bogor Declaration of the APEC Economic Leaders in 1994, the APEC member economies have been working voluntarily through the process to develop the environment for open and free investment.

The findings of this follow-up study remain broadly unchanged from the previous 2002 study, which revealed that all member economies will benefit from investment liberalization. Those benefits would be larger for economies with steeper investment barriers, although this is dependent on internal and external FDI stock prior to investment liberalization.

Moreover, it is shown that the growth in FDI spurred by investment liberalization has a complementary relationship with trade volume. Trade volume for both imports and exports would grow as a result of investment liberalization. These results suggest that promoting liberalization of investment will be vitally important for APEC in the years ahead.

In this study, quantification of investment barriers was updated based on the most recent description of investment-area activities in the IAP of each member economy. However, IAPs are updated and improved continually. Therefore, it is important to undertake periodic follow-up assessments of the anticipated impact of APEC actions in terms of evaluating the current state of investment liberalization and facilitation in the region.

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ANNEX: WEIGHTS OF FDI BARRIERS

According to Hardin and Holmes (1997), entire bans on foreign investment are given the weight of one. Even if this is not the case, restrictions on market entry are the most important and are given the weight of 0.6, while ownership and control restrictions and operational restrictions each have weights of 0.2. The same weights are applied to these three groups, as shown in Annex Table 1.

However, the individual weights assigned to each type of barrier within each group are adjusted, taking into account the frequency of barriers. These compositions are shown in Annex Table 2.

Annex

Table 1: Weights of Barriers to FDI in the Aggregated Index of FDI Restrictions

		Max Point	Max Weight	Weight
Restrictions on market entry	Bans on foreign investment in certain sectors	1	1	1
	Quantitative restrictions	0.6	0.5	
	Foreign equity limits on all firms			
	Less than 50 percent foreign equity permitted			0.5 or
	More than 50 percent and less than 100 percent foreign equity permitted			0.25
	Foreign equity limits on existing firms, none on greenfield			or
	No foreign equity permitted			0.5 or
	Less than 50 percent foreign equity permitted			0.25 or
	More than 50 percent and less than 100 per cent foreign equity permitted			0.125
	Screening and approval		0.1	
	Investor required to demonstrate net economic benefits			0.1 or
	Approval unless contrary to national interest			0.075 or
	Notification (pre or post)			0.05
	Other restrictions on market entry		0.4	0.4
Ownership and control restrictions	All firms	0.2 or		
	Existing firms, none for greenfield	0.1		
Operational restrictions	All firms	0.2 or		
	Existing firms, none for greenfield	0.1		

Annex
Table 2: Composition of Barriers to FDI

A: Other restrictions on market entry	
	Weight
Restrictions on the legal form of the foreign entity	0.25
Minimum capital requirements	0.25
Conditions on subsequent investment	0.125
Conditions on location	0.25
Admission taxes	0.125

B: Ownership and control restrictions	
	Weight
Compulsory joint ventures with domestic investors	0.4
Limits on the number of foreign board members	0.05
Government appointed board members	0.05
Government approval required for certain decisions	0.05
Restrictions on foreign shareholders' rights	0.05
Mandatory transfer of some ownership to locals within a specified time (eg.15 years)	0.4

C: Operational restrictions	
	Weight
Performance requirements (eg. export requirements)	0.3
Local content restrictions	0.4
Restrictions on imports of labour, capital and raw materials	0.2
Operational permits or licences	0.025
Ceilings on royalties	0.025
Restrictions on repatriation of capital and profits	0.05

Abbreviations

ABBREVIATIONS

ABAC	APEC Business Advisory Council
APEC	Asia-Pacific Economic Cooperation
ASEM	Asia-Europe Meeting
BITs	Bilateral Investment Treaties
CGE	Computable General Equilibrium
EC	Economic Committee
ECOTECH	Economic and Technical Cooperation
FDI	Foreign Direct Investment
FTAs	Free Trade Agreements
GATS	General Agreement on Trade in Services
GDP	Gross Domestic Product
GTAP	Global Trade Analysis Project
IAP	Individual Action Plan
IEG	Investment Expert Group
IT	Information Technology
JETRO	Japan External Trade Organization
M&A	Mergers and Acquisitions
OECD	Organization for Economic Cooperation and Development
R&D	Research and Development
TRIM	Trade-Related Investment Measures
UNCTAD	United Nations Conference on Trade and Development