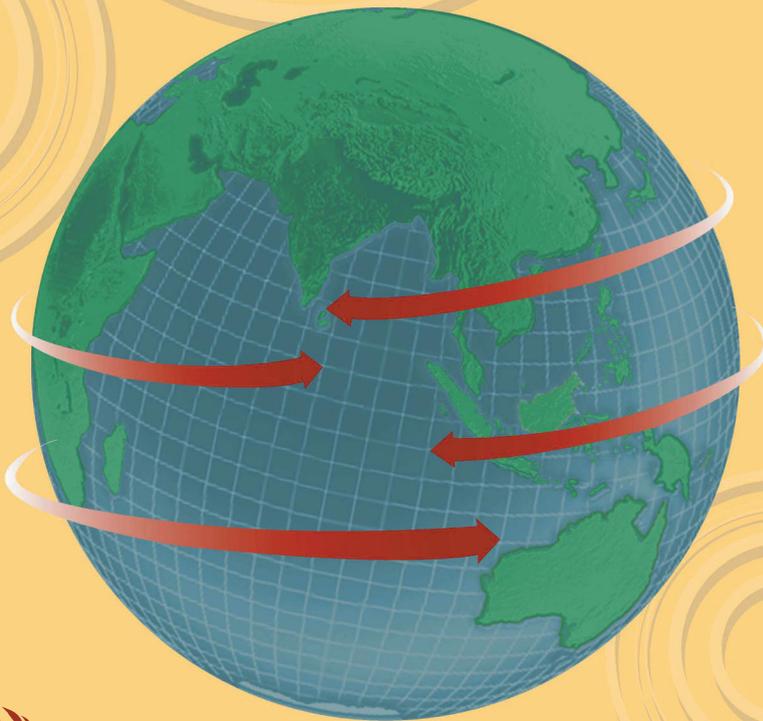




ASIA-PACIFIC TRADE AND INVESTMENT REVIEW

Vol. 2, No. 1, May 2006



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E S C A P**

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Research Articles

Trade and Foreign Direct Investment Patterns in the Republic of Korea in the Aftermath of the 1997 Asian Financial Crisis

*Byung S. Min**

ABSTRACT

This paper shows that the Republic of Korea has experienced significant change in both trade and foreign direct investment (FDI) flows since the 1997 Asian financial crisis. The analysis indicates that a rapid increase in exports at the onset of the crisis helped to improve foreign reserves of the Republic of Korea and also helped the economy to recover from severe recession. Despite the crisis, the importance of the Chinese market has steadily increased to the point where it is the most important export market for the Republic of Korea, largely at the expense of the Association of Southeast Asian Nations (ASEAN) market.

The crisis also had a significant impact on FDI inflows, both in terms of source country and host industry. FDI increased sharply following the crisis, and this rapid increase was largely due to higher United States and European Union investment in the service sector, which is consistent with the wealth effect hypothesis on FDI flows. Meanwhile, Japanese FDI decreased, resulting in a decline in FDI in the manufacturing sector. However, the expected spillover effects of FDI are debatable,

(continued on page 4)

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(continued from page 3)

due largely to a sharp increase in mergers and acquisitions, and FDI dried up in technology-intensive manufacturing industry. In contrast, the Republic of Korea's outward direct investment seemed to be little influenced by the financial crisis, although a further study of the implications of the crisis for the Republic of Korea's outward direct investment in developing countries, including the traditionally popular Asian region, also needs to be investigated further.

1. INTRODUCTION

This paper seeks to investigate movements in the Republic of Korea's trade and foreign direct investment (FDI) patterns including its outward direct investment (ODI) following the 1997 Asian financial crisis. Special attention will be placed on the analysis of policy issues and the challenges that arose in conjunction with the recovery of the economy of the Republic of Korea.

Why did the country's economy recover so quickly from the 1997 financial crisis? While the causes of the financial crisis are still controversial among economists, the subsequent recovery of the Republic of Korea's GDP growth rate was rapid and took the form of a V-shaped recovery (Aoki and Min, 2003). The GDP growth rate was 10.9 per cent in 1999 compared with -6.7 per cent in 1998; it was 9.3 per cent in 2000 although it dropped somewhat (3.0 per cent) in 2001.¹ There are many aspects to the Republic of Korea's recovery from both macro- and microeconomic perspectives.

Macroeconomic factors include a decline in interest rates from around 20 per cent per annum following the crisis to 5-6 per cent, which helped to break the vicious circle of high interest rates and corporate bankruptcies; they also include uncertainty caused by an increase in unemployment rates from the historical level of 4 to 11 per cent, motivating households to increase their savings, which in turn helped to improve the current account in a climate of poor corporate investment. Yet another factor was the Government's successful effort in rolling-over foreign debts and stabilizing foreign exchange markets (Aoki and Min, 2003).

From a microeconomic perspective the Republic of Korea has restructured both the corporate and financial sectors. The collapse of the Daewoo Group and dismantling of the Hyundai Group demonstrate that the notion that some companies were "too big to fail" is no longer valid. This restructuring has improved governance systems and the reliability of accounting information, strengthened competition policy for business conglomerates

¹ The GDP growth rate rose to 7.0 per cent in 2002 but dropped again to 3.1 per cent in 2003.

(the so-called *chaebol*), which helped to enhance economic efficiency and national competitiveness, and created market-friendly economic reforms such as the introduction of a managed floating exchange rate system (Min, 1999 and 2003).

Having taken these important domestic factors into account, this paper will focus on the Republic of Korea's trade and FDI in the period of crisis and recovery. It demonstrates that the impact of the 1997 financial crisis was significant across the economy. Special attention will be placed on the recovery of the economy by illustrating that the information/communication technology-led export boom, combined with policy reforms and subsequently increased FDI inflows, has significantly contributed to the recovery. Some challenges for foreign direct investment (inflows and outflows) and trade following the crisis will also be discussed.

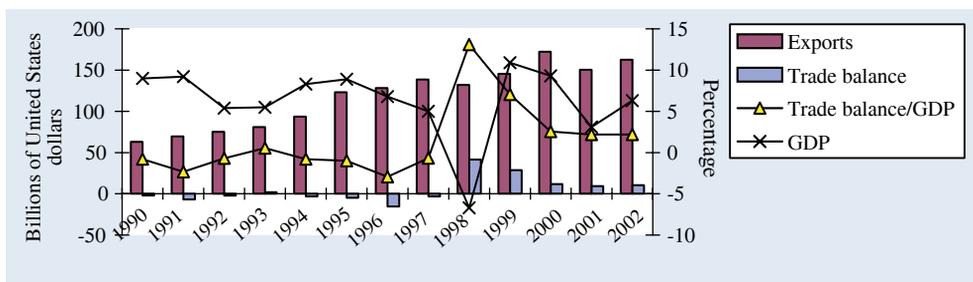
The paper is structured as follows: section 2 analyses the Republic of Korea's exports and its economic recovery, showing that a sharp increase in exports and foreign reserves was crucial to both restoring foreign investors' confidence and capital-market stabilization. Section 3 investigates the impact of the financial crisis, focusing on policy reforms and FDI inflows. This section shows that the Government of the Republic of Korea re-emphasized the importance of FDI to secure long-term commitments of foreign capital and the transfer of advanced technology and managerial know-how. Section 4 describes changes in FDI inflows and FDI outflows. Changes in FDI are discussed both in terms of source country and host industry. Some implications of the expansion of the Republic of Korea's ODI in Asia will also be explored. Section 5 examines some challenging issues such as the externalities controversy surrounding FDI, the terms of trade and market diversification. Section 6 contains a summary and conclusions.

2. EXPORT, CURRENT ACCOUNT SURPLUS AND RECOVERY

(a) Exports and growth

Figure 1 illustrates two important factors in relation to the Republic of Korea's economy. First, the fast recovery was led by increased exports and an improved trade balance. The Republic of Korea's trade balance was -\$11 billion in 1996 and -\$8 billion in 1997, respectively. However, the balance has shifted both in terms of sign and magnitude since the crisis. The Republic of Korea had a surplus in its overall trade balance between 1998 and 2002, with a balance of \$29 billion in 1998 and \$24 billion in 1999, record surpluses in the history of the country's trade balance; however, the figures declined to about \$9-12 billion between 2000 and 2002.

Figure 1 also shows that the GDP growth rate remained relatively high, although it fluctuated between 9.2 and 5 per cent between 1990 and 1997. It also indicates the resilience of the country's economy, as demonstrated by its rapid recovery. The Republic of

Figure 1. GDP growth, exports and trade balance

Source: Bank of Korea (various years). *National Account*.

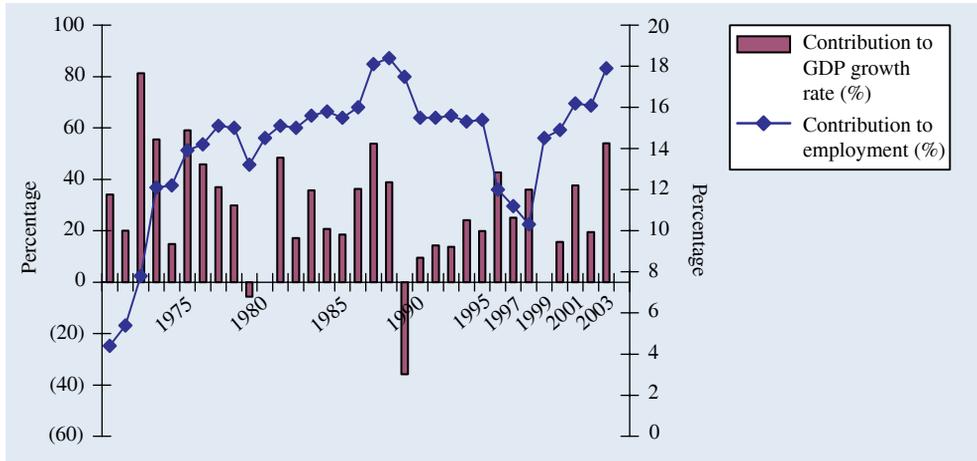
Korea's GDP contracted by 6.7 per cent in 1998 compared with that of the previous year. However, the growth rate recovered quickly to 10.9 per cent in 1999 and 9.3 per cent in 2000, respectively. While it dropped to 3 per cent in 2001, the growth rate bounced back from 2002 onwards.

Second, exports have been an important determinant of growth in the Republic of Korea. Changes in the trade balance reflect the total demand for home goods in the GDP equation. The potential benefits of exports for growth are due to the spillover from the export sector and productivity externalities, higher rates of capital formation and facilitation of capital imports through a lessening of foreign exchange constraints.

While the employment effects of export growth are still being debated, most of these benefits seem to have been present in the Republic of Korea's recovery (see figure 2). The graph shows the contribution of exports to the Republic of Korea's GDP growth rate (left scale), measured by the contribution of exports to GDP growth divided by the GDP growth rate, and to employment (right scale) over the last three decades. While both indicators fluctuated over the period, these figures show that the contribution of exports to both the GDP growth rate and employment was significant after the 1997 crisis. In particular, the contribution of exports to employment after the crisis increased sharply from about 10 per cent in 1997 to about 18 per cent in 2002. However, we note that the economy of the Republic of Korea recently experienced growth without generating additional employment. This is largely due to increases in the export of less labour-intensive products such as information technology (Shin, 2004). Furthermore, increased ODI in labour-intensive industries also adversely affected employment opportunities in the Republic of Korea.

The contribution of exports to the economy of the Republic of Korea can also be confirmed by the high ratio of exports to GDP (EX/GDP) shown in figure 3. This ratio remained relatively stable at about 30 per cent before the crisis. It increased significantly after the crisis, reaching around 40 per cent, indicating that the importance of exports to the country's economy increased.

Figure 2. Export contribution to GDP growth and employment



Source: Ministry of Commerce, Information and Energy (various years). <www.mocie.go.kr/korean/pds/statistics/invest>.

Figure 3. GDP growth and exports, 1980-2001



Source: IMF, *International Financial Statistics* (various years) and *Major Statistics of Korean Economy*, (various years).

Note: The ratio of exports to GDP (DEX/DGDP) is calculated by the change in value of exports divided by change in value of GDP in United States dollars.

However, the movement of exports following the crisis illustrates that a rise in exports per se does not necessarily increase people’s living standards proportionately. The incremental increases in exports as a percentage of GDP (measured by the change in value of exports divided by the change in value of GDP) indicate that the Republic of Korea’s

export growth following the crisis was based largely on increased volume facilitated by lower unit prices (i.e., push factors). The ratio (DEX/DGDP) in the figure increased in the early 1990s, but dropped sharply after 1995 when the unit export price dropped sharply. In particular, the incremental share dropped below zero in 1998 (and again in 2001), indicating that the negative effect of lower export prices was more than offsetting the positive effect of higher export volume following the sharp depreciation of the “won” currency during the crisis. While the unit export price did not recover, the increase in the incremental share did rebound with rising export volumes.

(b) *Stabilized foreign exchange market*

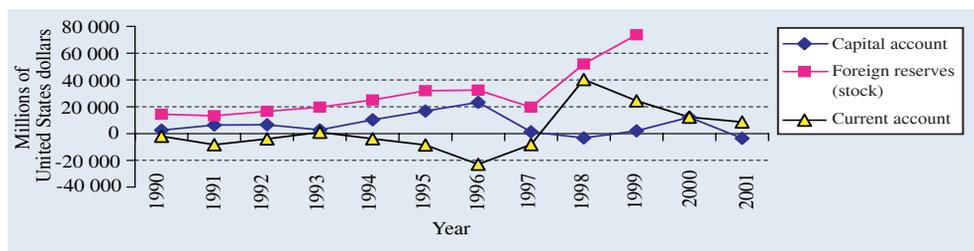
The current account surplus, coupled with the visible government-led restructuring of the banking (financial) sector and *chaebol*, was crucial to the recovery of foreign investor confidence in the economy of the Republic of Korea.

Most Asian countries, including Japan, experienced a banking crisis during this period, owing to a large number of non-performing loans (about 14-19 per cent) resulting from Japan’s “bubble economy” in the 1990s. However, one of the crucial differences between the crisis in East Asian countries and in Japan was the amount of available foreign reserves before the crisis.² In East Asia low foreign reserves, under a pegged exchange rate system, triggered speculative attacks on those countries’ currencies and led to herd behaviour and capital flight.

A current account surplus is crucial to the increase in foreign reserves. Figure 4 illustrates that the Republic of Korea’s current account mirrored capital inflows until 1997. However, the sharp increase in the current account surplus following the crisis has been much larger than capital inflows. As a result, the foreign reserve level increased dramatically in 1998. The increase in the current account surplus declined in 1999, although the current account remained in surplus. This surplus, coupled with a fall in net foreign assets, contributed to higher foreign reserves in 1999. The amount of foreign reserves increased from \$3.9 billion before the onset of the crisis to around \$95 billion in mid-2000 and \$150 billion (33 per cent of GDP in 2000) in late 2003. This increase in foreign reserves contributed to a restoration of foreign investor confidence in the value of the won, as demonstrated by the sharp appreciation of the won from late 1998.

However, an interesting question concerns whether or not foreign reserves are strictly necessary when a currency has been floated. Maintaining foreign reserves implies the existence of quasi-taxation, as the opportunity cost of keeping the reserves is relatively high.

² One major difference is that East Asian countries, including the Republic of Korea, relied largely on short-term foreign debt for their savings-investment imbalance (Aoki and Min, 2003). Also, Japan adopted a floating exchange rate regime, whereas most East Asian countries adopted a pegged exchange rate system.

Figure 4. Current account, capital account and foreign reserves

Source: Bank of Korea (various years). *National Account*.

3. IMPACT OF THE FINANCIAL CRISIS ON THE REPUBLIC OF KOREA'S GLOBALIZATION POLICY ON FDI

The 1997 financial crisis has led to a significant change in globalization strategies, including that of the capital market. In particular, reforms have focused on FDI inflows by allowing mergers and acquisitions (M and As) and classifying long-term (more than five years) loans as FDI.

The system of conventional acceptance of FDI notification was changed to one of simple notification (i.e., a complete notification system) with the introduction and implementation of the Foreign Investment Promotion Act in November 1998. This simplified procedure related to FDI through the acquisition of newly issued stocks (i.e., the establishment of 100 per cent subsidiaries, joint ventures and participation in capital increase) and through the acquisition of outstanding stocks. Foreign investors were allowed to engage in M and As with the permission of the board of the targeted company and of the Ministry of Finance and Economy as long as the total size of assets was less than 2 trillion won (approximately \$2 billion).³ In addition, removal of the remaining restrictions on FDI, including coverage and relevant institutional settings, was noticeable in view of the significant liberalization of goods before the crisis (Korea Investment Service Center, 1998).⁴ Long-term loans to improve facilities from foreign investors with a maturity of more than five years were regarded as FDI.

Out of a total of 1,148 FDI subject sectors, 1,117 sectors were completely opened and 18 sectors were partially opened to foreign investors at the end of 1998. Partially opened industries include cattle-raising, inshore/coastal fishing, alcohol distilling, tobacco,

³ Foreign investors would require permission from the Ministry of Finance and Economy if the size of the targeted firm is more than 2 trillion won.

⁴ See Korea Trade Association and Korea Institute for Industrial Economics and Trade (1997) for the tariffs, and Han (1998) for the liberalization of the service market.

power, gambling and some logistics and communication and media-related industries. The sectors that remained closed include some areas of national defence. Protection of the foreign investors' remittances of dividends and proceeds from sales generated from stocks and equities, as well as of principal and interest paid overseas from long-term loan contracts was strengthened. Overall, foreign investors enjoyed a more level playing field in the Republic of Korea.⁵

Tax incentive systems, finance and land support were also strengthened. Tax exemptions and reductions particularly targeted (a) businesses that produce advanced technologies, (b) service industries that support the manufacturing sector and are designated as subject to tax exemption and reductions and (c) businesses located in free export zones.⁶ These benefits include 100 per cent tax exemption for the first 7 years from the year in which income is first generated and a 50 per cent reduction for the ensuing 3 years. Financial support includes the allowance of short-term loans by foreign investors in specified cases. The Government also designated several new free economic zones, such as in Kwangju, Cheonan and Incheon, for FDI promotion.

The rationale behind this reform in favour FDI is as follows. First, having experienced the adverse effects of the quick decline (capital flight) in short-term capital, the Government of the Republic of Korea preferred the longer-term commitment of FDI inflows to short-term capital (portfolio) inflows. Second, an increase in long-term capital inflows via FDI was expected to send a positive signal for short-term capital flows on the capital account. Third, the Government wanted to improve economic fundamentals by transferring technology and managerial know-how from multinational enterprises, although the magnitude of such positive externalities has yet to be investigated.⁷

4. FDI AND RECOVERY OF FOREIGN INVESTORS' CONFIDENCE

(a) FDI inflows

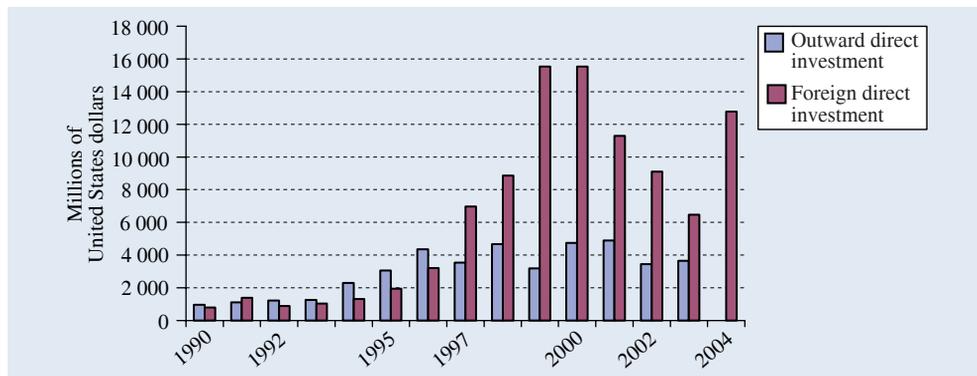
As described in section 3, the Government of the Republic of Korea removed regulations on FDI and strengthened incentives significantly after the 1997 financial crisis. In addition to its change in globalization policy and a recognized high standard of labour quality, the improved current account produced by expanded exports and a stabilized

⁵ In fact, foreign investors enjoy more favourable treatment than citizens of the Republic of Korea in terms of tax reductions and exemptions and location of investment.

⁶ These industries include (a) electronics, information and electrical parts such as industry/motor vehicle controlling systems, (b) precision machinery, (c) materials for basic material industries, (d) new materials, bio-industry, (e) optical science, medical machinery, (f) airspace, logistics and (g) environment, energy and construction such as sewerage treatment.

⁷ See Lee and Cho (2003) concerning the possibility of technology transfer via multinational enterprise in the information technology industry in the Republic of Korea.

Figure 5. Republic of Korea's foreign direct investment and outward direct investment



Sources: Ministry of Commerce, Information and Energy <www.mocie.go.kr/korean/pds/statistics/invest>; *Overseas Direct Investment Statistics Yearbook 1998*; *Major Statistics of Korean Economy* (various years).

Notes: Outward direct investment is arrival basis and foreign direct investment is notification basis. Average arrival rate (arrival/notification) for foreign direct investment between 1998 and 2003 was around 60 per cent.

foreign exchange market was helpful in the recovery of foreign investor confidence, which is evidenced by the surge of FDI flows into the Republic of Korea (see figure 5).

FDI inflows were slowly increasing before the 1997 crisis. The amount of FDI inflows totaled \$1.9 billion in 1995 and \$3.2 billion in 1996, but this constituted only 1.5 and 2.5 per cent respectively of the Republic of Korea's exports. In contrast to the dwindling ODI, FDI inflows began to surge from 1997 and maintained strong growth until 2002 when FDI began to decline, a trend that has since continued. FDI inflows in 1997 were valued at \$7 billion, which is more than double the previous year's figure. FDI inflows peaked in 1999 and 2000, reaching \$15.5 billion (11 per cent of exports) and \$15.2 billion (8.8 per cent of exports), respectively. This was followed by a downturn until 2003, although the inflows picked up again in 2004.

The increased FDI inflows following the crisis provide evidence of the recovery in the confidence of foreign investors in the economy of the Republic of Korea, although the inflows were also boosted by policy reforms aimed at removing distortions in FDI and the depreciation of the won currency. More specifically, this increase is attributable to pull factors and push factors. The pull factors were largely generated by policy reforms aimed at FDI, including granting permission for (hostile) M and As, new fiscal (taxation) incentives and fewer restrictions on foreign ownership. The push factors included the wealth effect created by the depreciation of the won against investors' home currencies. Exchange rate movement is a determinant of FDI flows. For example, the surge of

Japanese FDI into the United States in the 1980s was associated largely with the appreciation of the yen against the United States dollar, and this increased the bargaining power of the Japanese bidder, a phenomenon known as the wealth effect (Froot and Stein, 1991).

The value of the won dropped sharply during the 1997 financial crisis. At the end of 1997, the value of the won had depreciated by 40.4 per cent against the United States dollar and by 33.2 per cent against the Japanese yen compared with its value at the end of 1996. The trade-weighted CPI-based real exchange rate in the fourth quarter of 1997 and first quarter of 1998 also had depreciated by 17.6 and 34.0 per cent compared with the fourth quarter of 1996. By the end of the first half of 2000, however, the nominal exchange rate of the won with the United States dollar was stable at around 1,120, or 1,060 won per 100 Japanese yen.

The “boom and bust” cycle of FDI along with the onset of the exchange rate crisis seemed to support the wealth effect hypothesis. However, the resurgence of FDI in 2004 also indicates that increases in FDI are not sustainable without the foreign investors’ confidence in the host economy.

Table 1 clearly illustrates that increased FDI inflows after the crisis were largely led by improved United States and European Union investment at the expense of Japanese investment. The share of United States investment in the Republic of Korea before the crisis was around 27-30 per cent, but this increased rapidly after 1996. United States investment accounted for the lion’s share of foreign investment in the period 1997-1998, although it dropped in the period 1999-2000. However, United States investment rose again to account for nearly half of FDI inflows in 2002, before dropping sharply to 19.2 per cent and then resurging to 36.9 per cent in 2004. The table also indicates that European Union investment increased continuously until 1999. However, FDI in the Republic of Korea from the European Union began to decline in 2000, although it increased sharply in 2003 before declining again in 2004. The share of Japanese FDI in the Republic of Korea between 1962 and 1990 was 48.2 per cent. However, it dropped to 3.8 per cent in 1997, although it has picked up a little since then. Despite this recovery, with some fluctuations, Japanese investment never regained the historically high level recorded between the 1970s and mid-1990s.

Table 1 also shows a dramatic change in FDI by industry. Traditionally, most FDI has flowed into the manufacturing sector. The share of FDI in manufacturing stayed between approximately 53 and 65 per cent over the period from 1962 to 1996. However, the service sector has recently taken a greater share. This dramatic change accelerated after the 1997 crisis. The service sector’s share of total FDI increased continuously after the crisis and peaked at 73.1 per cent in 2002.

**Table 1. Foreign direct investment in the Republic of Korea
by source country and host industry**

Period/years	Total		Source Country (Percentage of total amount)			Host Industry (Percentage of total amount)	
	Amount (in millions of United States dollars)	Cases	United States	European Union	Japan	Manu- facturing	Services
1962-1990	7 874	5 337	28.5	12.5	48.2	65.4	34.1
1991-1995	6 598	2 929	29.9	32.5	23.0	53.7	46.4
1996	3 203	968	27.4	27.9	8.0	60.3	39.2
1997	6 971	1 055	45.8	33.1	3.8	33.7	65.8
1998	8 852	1 399	33.6	32.6	5.7	64.8	33.2
1999	15 541	2 173	24.1	40.3	11.3	45.9	53.8
2000	15 697	4 271	18.6	28.0	15.6	43.4	56.3
2001	11 291	3 418	34.4	27.1	6.8	27.4	72.6
2002	9 101	2 435	49.4	18.3	15.4	26.7	73.1
2003	6 468	2 564	19.2	47.3	8.3	26.2	63.9
2004	12 784	3 068	36.9	23.5	17.7	48.6	48.0

Sources: Ministry of Commerce, Information and Energy <www.mocie.go.kr/korean/pds/statistics/invest>; Overseas Direct Investment Statistics Yearbook 1998; Major Statistics of Korean Economy (various years).

Note: Percentages of total for the periods 1962-1990 and 1991-1995 were calculated as follows: sum of total amount over the period/sum of individual source country over the period.

This change in FDI by sector reflects the change in source countries and in the comparative advantage of the economy of the Republic of Korea. Most Japanese investment was directed towards the country's manufacturing sector, and this is consistent with the high share (65.4 per cent) of foreign investment in manufacturing in the Republic of Korea over the period from 1962 to 1990. Because of increased wages, some areas of manufacturing in the Republic of Korea seem to have lost their comparative advantage over China and ASEAN. In contrast to Japanese investment, United States and European Union investment in the service sector increased, particularly after the financial crisis. This includes investment in the financial sector as well as in the property market. The Government of the Republic of Korea planned to sell some troubled banks to foreigners and to open service markets, including distribution channels, to foreign investors. Since the onset of the financial crisis, foreign investors have purchased buildings in Seoul worth more than \$4 billion, which is the reverse situation to the purchase by Japanese investors of buildings in New York in the late 1980s (Froot and Stein, 1991). This change in FDI by sector also supports the wealth hypothesis of FDI inflows.

(b) *Outward direct investment*

While the reforms following the 1997 financial crisis focused on FDI inflows, the trend of ODI flows has also changed (see figure 5). In particular, the rapid momentum of the 1990s seems to have been lost. The Republic of Korea's ODI began to surge from the mid-1980s, when the economy had a significant surplus on the current account, largely due to a favourable exchange rate and low interest rates in the global capital market. Owing to the confidence in the current account balance, the Government gained confidence in capital account management and removed restrictions on ODI. Furthermore, domestic production costs rose sharply, mainly due to the surge in wages. This rapid upward trend lasted until the onset of the crisis, followed by a somewhat stagnant period with some fluctuations.

The Republic of Korea's ODI was led largely by labour-intensive and small and medium-sized (less than \$300,000) manufacturing companies, particularly since the mid-1980s (Cho, 1995; Bank of Korea, various issues). Manufacturing's share of total ODI increased from 26.4 per cent in 1986 to 56.5 per cent in 1996. The surge in wages was the main driving force for the exodus in textiles, clothing and primary and fabricated metals. Asia (including ASEAN and China) received the lion's share of this investment, followed by North America. In particular, ODI to China rose sharply to exploit geographical proximity and low labour costs in small and medium-sized firms, followed by ODI to the United States; Hong Kong, China; and Viet Nam. In contrast to manufacturing-led ODI to Asia, the Republic of Korea's ODI to North America and the European Union was led by trading companies. This reflects an attempt by small and medium-sized firms in the Republic of Korea to export to North America and the European Union directly, rather than adopting the traditional method of indirect exports through local trading companies.

The relative importance of large-sized firms in ODI seems to have increased following the 1997 financial crisis. For example, Hyundai motor company, Samsung and LG Electronics increased their foreign investment in Asia, North America and the European Union (including eastern Europe) after 2000. Despite the crisis, China remained the most important country for foreign investment in the Republic of Korea. The share of China in total ODI fluctuated between 15 per cent in 2001 and 47 per cent in 2003. In contrast with FDI, the Republic of Korea's ODI seemed to be little influenced by the 1997 financial crisis. The ODI figure dropped somewhat in 1999 but recovered to the historical level with some fluctuation until 2003 (figure 5). This trend reflects the strong Chinese economy and uncertainty about the United States economy owing to the hostilities in Iraq and rising oil prices (pull factors), as well as the surge in wages and rather weak business environment in the home market over the period (push factors). Manufacturing-led ODI remained unchanged following the crisis. This reflected the weak competitiveness of the Republic of Korea's non-manufacturing industries in the global market.

The implications for small and medium-sized firms are complicated. In contrast to large firms, the motivation of small and medium-sized firms in carrying out foreign investment was largely to overcome export barriers and cut labour costs (Cho, 1995). Recently, wage costs have risen in China as the economy has maintained high growth. As a result, investment in Viet Nam and the Democratic People's Republic of Korea, including the Kaeseong Industrial Complex, has increased.⁸

5. CHALLENGES FACING THE ECONOMY OF THE REPUBLIC OF KOREA

(a) *Does FDI guarantee positive spillovers?*

As described in the previous section, FDI in the service sector has recently increased sharply vis-à-vis manufacturing. According to the Korea Trade and Investment Association (1998, pp. 87-88), the prime reason for subsidizing FDI is to achieve the transfer of advanced technology by multinationals. However, the expected technology transfer effects of FDI seem to be insignificant, as FDI was located in labour-intensive industries rather than in capital/technology-intensive industries. At the end of 1996, only 9.4 per cent of FDI was located in the designated industries for technology transfer.

Recent trends in FDI following the financial crisis also indicate that foreign investment via the acquisition of outstanding stocks has surged. The share of M and As by foreign investors was 27.2 per cent in 1998 and 30.7 per cent in 1999, and then declined somewhat to between 15 and 17 per cent until 2003 (Kim, 2004). This increase in M and As following the crisis was due largely to policy reforms allowing M and As by foreigners and to the collapse of the asset bubble, the so-called "fire sale" following the financial crisis (Krugman, 1998). Interestingly, the effects of the fire sale in the manufacturing sector were evident at the onset of the crisis. The companies sold include Hansol Pulp and Paper, Halla Cement and Daewoo Motor Company. By contrast, most foreign investment in M and As targeting service industry companies, including banks and communications, was undertaken with a time lag of two to three years.

A large proportion of foreign investors were from international fund management groups rather than technology-based multinationals. As a result, the expected positive spillover of advanced managerial know-how is also debatable. The conflict between Sovereign Asset Management Ltd., a Dubai-based investment fund owned by two brothers from New Zealand, and the Republic of Korea's third largest business group, SK Corporation, in 2003 is a good example. Sovereign attempted hostile M and As with SK when SK had experienced difficulties resulting from an accounting scandal (Kim, 2004).

⁸ However, this investment is largely to produce imports for consumption in the source country, and political uncertainties and socialist economic systems in the host countries remain a major hurdle.

Soverign purchased 19 million shares in SK at 1,750 won per share. The share price increased rapidly while Soverign strategically threatened the owner-chief executive officer in order to force the company to improve its governance system. The estimated capital gain to Soverign from its short-term investment in shares without tax was estimated to be 800 billion won (equivalent to \$800 million).⁹

However, survey results imply that FDI generated positive effects for domestic firms both in terms of technology and managerial know-how transfer in manufacturing (Kang and others, 2003). Furthermore, we need to consider that spillover effects are often invisible and difficult to measure in the short run. In addition, the definition of spillover can be broadly understood including various side effects. The Soverign-SK incident in 2003 resulted in an improved corporate governance system for SK, with the announcement of the so-called “New SK Plan”.

(b) Terms of trade and market diversification

Movements in the terms of trade (TOT), as measured by the unit value of exports divided by the unit value of imports, reflect dynamic structural change in global markets.¹⁰ Whether or not worsening TOT are caused by demand or supply factors, a country experiencing falling TOT will nevertheless receive less in return for each unit of the goods it exports, and vice versa.

As a result, declining TOT has three important implications for the Republic of Korea. First, they erode the positive impacts of improved competitiveness and reduce the size of the surplus on the current account, given the level of exchange rates and interest rates. The worsening of TOT also provides a difficult policy challenge in terms of real exchange rate alignment. The Republic of Korea, like many East Asian countries, has often used a sterilizing intervention approach, regardless of the nature of the shock, mainly due to government intervention and regulation under conditions of imperfect capital mobility. However, such sterilizing intervention could also have delayed the alignment (depreciation) of the real exchange rate in 1996 when the current account deficit was caused by the TOT shock rather than by the domestic investment boom. Now, the Republic of Korea faces

⁹ Similarly, some United States-based companies, including New Bridge Capital and Lone Star, made a huge amount of short-term capital gains from M and As and reselling banks and commercial buildings in the early 2000s.

¹⁰ As a result, the movement in TOT is not caused directly by the changes in the balance of the current account. The level of investment following the crisis also dropped sharply. However, the adverse development in TOT between 1995 and 1996, coupled with the investment boom (including in semiconductors) began in 1994 that had been triggered by the expected recovery of the global economy, led to a sizeable deficit on the current account in the Republic of Korea. This, combined with the absence of prudential supervision, resulted in short-term foreign borrowing (particularly from financial institutions) and thereby raised the vulnerability of the economy to the 1997 financial crisis.

a TOT shock with a “floating” exchange rate regime and a reasonably sizeable current account surplus.

Second, TOT affects the country’s per capita standard of living and private consumption decisions. Third, the magnitude of the negative impacts of structural change depends on the elasticity of demand for exports and the ability of exporters to adjust to changing levels of demand. The following section focuses on the second and the third aspects.

(i) Movements in the terms of trade

Figure 6 shows TOT compared with income TOT and the unit price of the Republic of Korea’s major export goods (semiconductors) and import goods (petroleum) during the first quarter of 1994 and the second quarter of 2000. The figure illustrates a worsening trend in TOT over the period. The index value of 73 (1995 = 100) for TOT in the first half of 2000 was the worst in history. This deterioration of TOT was largely attributable to the drop in the unit export price of the Republic of Korea’s exports coupled with the rising petroleum price since mid-1999. For example, the unit export price of semiconductors fell sharply in the mid-1990s, causing a sizeable deficit in the current account.¹¹ The unit price dropped from 100 in 1995 to less than 50 in 1996, and further decreased to 12.2 in the second quarter of 2000. Because of the worsening TOT, the Republic of Korea needed to increase its volume of exports to improve its current account balance.

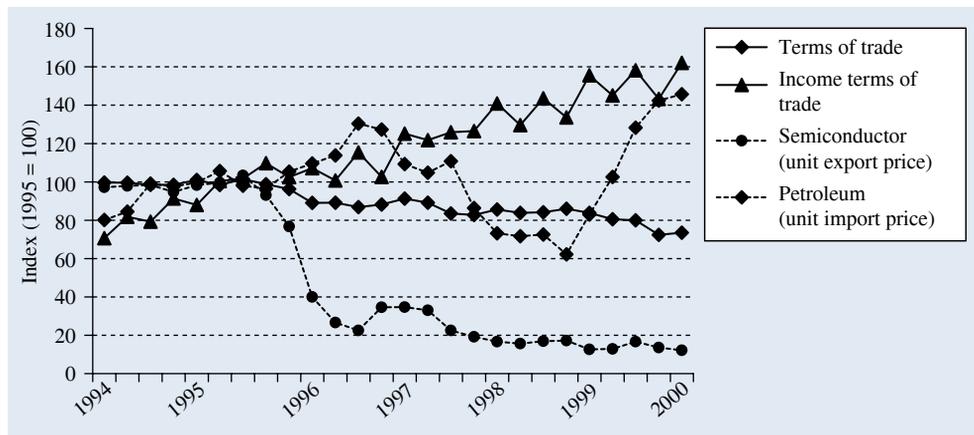
This drop in the unit price of semiconductors is puzzling because the demand for semiconductors was strong and supply was relatively stable. The strong United States economy in the 1990s was largely attributable to the boom in information technology. While the reasons for the structural adjustment of the semiconductor price have yet to be analysed, psychological factors in the market following the Asian financial crisis and concern about the potential information technology-led bubble, coupled with the relatively short life cycle of the product, seem to have affected cyclical fluctuations in price.

The lower petroleum price following the crisis, combined with the strong recovery of the global economy, were crucial external factors that enabled the Republic of Korea to achieve a rapid recovery. All of the country’s oil is imported from overseas.¹² However, the

¹¹ The shares of semiconductors in total manufacturing production and in total exports were 5 per cent and 9 per cent respectively in the early 1990s. However, the share in production increased to 13.6 per cent in 1997 and 21 per cent in 1998. The share in exports also increased to about 13-15 per cent in the late 1990s. The share of the Republic of Korea’s electronics production in the global total was 4.4 per cent in 1997, making it the fourth largest producer following the United States, Japan and Germany.

¹² For example, the Republic of Korea’s imports of crude oil in 2000 were worth about \$25 billion, which is equivalent to about 5.4 per cent of GDP in the same year.

Figure 6. Terms of trade, income terms of trade, unit export and import price for selected commodities



Source: Bank of Korea (various years). *Economic Statistics Yearbook*.

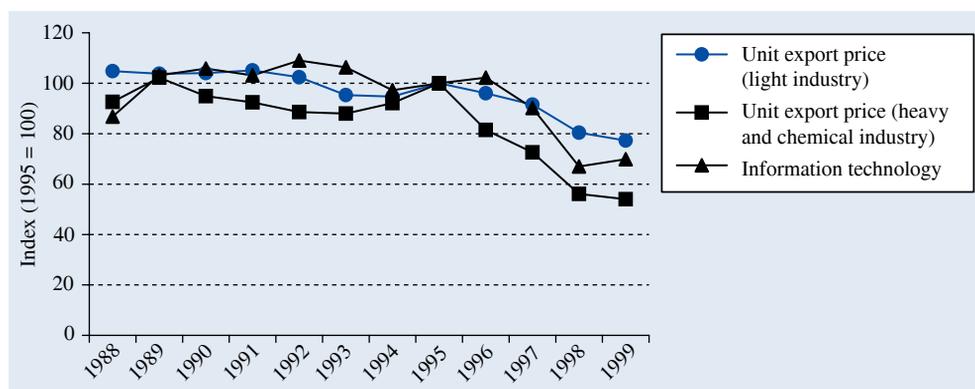
petroleum price began to rise significantly from the second half of 1999 owing to lower production, and this caused the deterioration in TOT. The index number for TOT rose from 60 in 1999 to around 150 in late 2000. Figure 6 also shows that income TOT, which measures import ability by total exports (value), was rising all the time, a situation largely due to the increased volume of exports.

Figure 7 shows that the decline in the unit value of heavy and chemical industry exports has been most noticeable since the mid-1990s. This decline was caused largely by lower prices for semiconductors, chemicals and steel. In contrast, the price index for information technology-related products, a major emerging export item for the Republic of Korea, was higher than the average index for heavy products and chemicals.

Was there a pass-through effect of the won currency depreciation on the Republic of Korea's imports following the crisis? The pass-through effect of depreciation refers to the proportion of depreciation that is translated into higher import prices in the depreciating country, and suggests that the unit price of imports in the depreciating country may also drop (Knetter, 1993). The apparent drop in import prices following the crisis seems to be consistent with this hypothesis. However, this drop in import prices was caused largely by the declining prices of petroleum and industrial commodities over the period. Petroleum prices declined from \$19.30 per barrel of oil in 1997 to \$13.70 per barrel in 1998, before rising to about \$30 by mid-2000.¹³

¹³ The average quantity of petroleum imports in the Republic of Korea between 1997 and 1998 was about 850 million barrels.

Figure 7. Trends in unit value indexes of exports



Source: IMF (various years). *International Financial Statistics*.

Note: Unit export price (light industry) is unit value index of exports for light industry, unit export price heavy and chemical industry is that for heavy and chemical industry, and information technology is that for information technology-related products.

The Republic of Korea's major import suppliers, including the United States and Japan, may be expected not to respond strategically to the depreciation of the won. The market in the Republic of Korea is assumed to be too small for these exporters to take action in order to preserve their market shares and stabilize prices in the buyer's currency relative to a constant markup policy.¹⁴ Thus, it is assumed that the decline in the unit value of exports is proportionately larger than that in imports. By the same token, there was no difference in the Republic of Korea's bilateral trade balance with Japan and the United States. However, the depreciation of the won vis-à-vis the Japanese yen raised the won cost of imports to the Republic of Korea (the dollar price, however, was unchanged and thus the trade balance remained the same in dollar terms), and the profit margins of firms in the Republic of Korea in local currency were squeezed by intermediate imports from Japan. As a result, the Republic of Korea's dependency on Japan for intermediate imports could moderate the positive effects of depreciation on exports at a given profit margin.

¹⁴ Athukorala and Menon (1994) also confirm that the incomplete pass-through of exchange rate changes is pervasive with Japanese exports. However, the paper rejects the widely held view that Japanese export firms have relied more heavily on pricing to market strategies during the period of yen appreciation in order to maintain market share. In spite of this, whether or not Japanese exporters and United States exporters showed different pricing behaviours in the Republic of Korea following the crisis is an interesting empirical question. The Republic of Korea was the second largest market for United States exports in Asia. The share of the Republic of Korea and Japan in United States exports was 3.7 and 11.4 per cent respectively and that in United States imports was 3.5 and 18.7 per cent respectively in 1991.

(ii) *Export market destinations: demand for exports*

Table 2 indicates three important points regarding the Republic of Korea's export markets. First, the Republic of Korea has diversified its export markets over the last two decades. Until the crisis, exports to ASEAN and China increased at the expense of those to the United States. The traditional heavy reliance on the United States market had been declining until the onset of the crisis. Exports to the United States rose until the mid-1980s, reaching a peak of 40.7 per cent of the total in 1986, and then began declining to 1997 (the net exports to the United States between 1980 and 1990 increased by 13.9 per cent, but between 1990 and 1997 they declined by 48.7 per cent).

Table 2. Shares of the Republic of Korea's major export countries
(Percentage)

	<i>United States</i>	<i>Japan</i>	<i>United Kingdom-Germany</i>	<i>ASEAN 5^b (ASEAN 4)^c</i>	<i>China</i>
1980 (A)	26.7	17.7	8.4	6.6 (5.0)	0.1
1985	40.3	17.1	7.1	5.7 (3.9)	0.2
1990 (B)	30.4	19.9	7.2	8.8 (5.9)	0.9
1995	19.4	13.7	7.1	13.6 (8.2)	7.4
1996	16.7	12.1	6.1	14.9 (9.9)	8.8
1997 (C)	15.6	10.7	6.3	13.8 (9.6)	9.8
1998	17.3	9.3	6.2	11.4 (8.3)	9.0
1999 (D)	20.5	10.9	6.2	12.0 (8.6)	9.5
2000	21.8	11.9	6.1	10.6 (7.3)	10.7
2001	20.7	11.0	5.2	9.5 (6.8)	12.1
2002	20.2	9.3	5.2	11.3 (8.7)	14.6
2003	17.6	8.9	5.0	10.4 (8.1)	18.1
2004	16.9	8.5	5.5	9.5 (7.3)	19.6
<i>Coefficient of variation^a</i>	<i>36.7</i>	<i>27.7</i>	<i>11.6</i>	<i>31.8(29.8)</i>	<i>78.1</i>
<i>Adjustment rate</i>					
(B-A)/A*100	13.9	12.4	-14.2	33.3(18.0)	800.0
(C-B)/B*100	-48.7	-46.2	-12.5	56.8(62.7)	988.9
(D-C)/C*100	30.1	1.8	-1.6	-13.1(-10.4)	-4.1

Source: Korea Foreign Trade Association (various years). *Trend of Foreign Trade*.

^a Standard deviation/mean *100.2 (1980-1999).

^b ASEAN 5 is composed of Indonesia, Malaysia, the Philippines, Singapore and Thailand.

^c In ASEAN 4, Singapore is excluded from the ASEAN 5 list of countries.

In contrast, the shares of exports to ASEAN and China rose sharply until the onset of the crisis. The Republic of Korea's exports to ASEAN included capital-intensive goods to support the industrialization of that region. Noticeably, this fast growth in exports to ASEAN took place in conjunction with the surge in the Republic of Korea's ODI to the region over the period. Exports to China surged dramatically in the mid-1990s due mainly to the establishment of diplomatic relations in the early 1990s, as well as to the country's geographical proximity. Meanwhile, exports from the Republic of Korea to the United Kingdom and Germany were relatively stable, although they have declined since the crisis. Because of the increase in exports to ASEAN and China, the Republic of Korea was able to diversify its export markets away from its heavy reliance on the United States market between 1980 and 1997.

Second, this geographical composition has changed since the crisis. In particular, the relative importance of the United States market increased again until 2000, when it once again began to decline. In particular, China emerged as an important market, especially at the expense of the ASEAN and Japanese markets. The strong United States economy over the last 10 years has led to an increase in imports, whereas the ASEAN economy lost purchasing power following the crisis.¹⁵ The strong United States economy was largely attributed to the growth in information technology industries, which raised the demand for semiconductors, the Republic of Korea's most important export item.

This change in relative importance is indicated by the adjustment ratio (measured by $(D-C)/C \times 100$ in table 2), with a ratio of 30.1 per cent for the United States, compared with -13.1 per cent for the five founding members of ASEAN.¹⁶ As a result, the share of these developed countries increased from 32.6 per cent in 1997 to 37.4 per cent in 1999. However, it is not certain whether this higher reliance on developed countries rather than developing ones suggests that exports will be more stable. The information on the coefficient of variation, as measured by the standard deviation divided by the mean, seems to suggest that exports to the United States market were more volatile than those to other markets.¹⁷ In fact, the Republic of Korea currently faces some major challenges in United States trade, such as an expected increase in competition for the market from other countries affected (depreciation of currencies) by the 1997 crisis as well as protectionist pressures caused by the imbalance in trade between the United States and the Republic of Korea.

Third, the sustained growth of the Chinese economy and the recovery of the ASEAN and Japanese economies are factors also crucial to the Republic of Korea's exports and growth. While there was a drop in the relative importance of the ASEAN markets

¹⁵ In the late 1990s, the United States GDP accounted for around a quarter of the global GDP.

¹⁶ The extraordinarily high number for China was due to the small number of base years (1980 and 1990) and thus comparative analysis provides little information.

¹⁷ Refer to footnote 8.

following the crisis, the complementary relationship between the Republic of Korea and the region indicates the importance of these markets for the country's exports. However, the relative importance of the ASEAN market after 2000 fluctuated somewhat; it was below its historical trend in the mid-1990s. Recently, the Japanese market has experienced fluctuations within an overall declining trend, and is still less significant than it was before the crisis.

The importance of the China market is particularly noticeable. In 1999, China emerged as the third largest single market for exports from the Republic of Korea (9.4 per cent of total exports) followed by the United States (20.3 per cent) and Japan (10.9 per cent), although the five founding members of ASEAN (12.0 per cent), as a region, is the most important destination. The importance of China increased continuously until 2004. China's share in the Republic of Korea's total exports was 14.6 per cent, making China the second most important market for exporters in the Republic of Korea in 2002. When combined with Hong Kong, China, the share was 20.8 per cent, making it the Republic of Korea's most important market in that year. This increasing importance of the China market occurred despite the 1997 crisis. The share of that market in the Republic of Korea's total exports reached 19.6 per cent, and it became the single most important destination for exports from the Republic of Korea in 2004.

6. SUMMARY AND CONCLUSIONS

This analytical research study indicates that the Republic of Korea has experienced significant changes in both trade and FDI inflows as well as outflows following the 1997 Asian financial crisis. The Republic of Korea's reliance on the United States market and China for its exports rose sharply following the crisis. In particular, China has emerged as the most important export destination, largely at the expense of the ASEAN market. This was due to its geographical proximity to the Republic of Korea and the increased competitiveness of Korean products in the China market. The United States consumption of products from the Republic of Korea increased sharply at the onset of the crisis. This was critically important for the restoration of foreign reserves and the subsequent stabilization of the capital market, although the relative importance of the United States market has declined again since 2001.

The increase in the surplus on its current account helped the Republic of Korea to restore foreign investors' confidence in the economy, which is evidenced by the surge in foreign direct investment. The crisis had a significant impact on FDI inflows both in terms of investment source and host industry. FDI increased sharply following the crisis and this rapid increase was due largely to improved United States and European Union investment in the service sector, which is consistent with the wealth hypothesis of FDI inflows. In particular, M and As by foreign investors increased significantly following the crisis. Meanwhile, Japanese FDI dried up, although it picked up again sharply in 2004, and this

caused the overall drop in FDI in the manufacturing sector. However, the magnitude of expected spillover effects from multinationals, including the transfer of advanced technology and managerial know-how, is still the subject of debate, which requires further investigation. Further study is needed on the implications (e.g., supply chain management and internationalization strategy) of the crisis for the Republic of Korea's ODI (particularly from small and medium-sized firms) in the context of developing countries, especially in the Asian and Pacific region.

REFERENCES

- Aoki, K. and Byung S. Min (2003). "Hyperbola of external debt: a lesson from the Asian crisis", *Journal of the Korean Economy*, vol. 4, No. 1, pp. 63-92.
- Athukorala, P. and J. Menon (1994). "Pricing to market behaviour and exchange rate pass-through in Japanese exports", *Economic Journal*, vol. 104, pp. 271-281.
- Bank of Korea (various years). *Economic Statistics Yearbook*.
- Cho, Y.S. (1995). *Structure and Performance of Small and Medium Sized Firm's Overseas Direct Investment* (Seoul, Korea Institute for Industrial Economics and Trade).
- Froot, K.A. and J.C. Stein (1991). "Exchange rates and foreign direct investment: an imperfect capital markets approach", *Quarterly Journal of Economics*, vol. 106, No. 4, pp. 1191-1217.
- Han, H.Y. (1998). *Opening Market Policy for Korea's Service Industry* (Seoul, Jipmoondang).
- Kang, D.Y., C.K. Park, W.B. Lee and C.W. Byun (2003). *Foreign Direct Investment in Manufacturing in 2003* (Seoul, Korea Institute for Industrial Economics and Trade).
- Kim, Y.Y. (2004). *Present Condition and Task of M and A* (Seoul, Korea Institute for Industrial Economics and Trade).
- Knetter, M. (1993). "International comparison of pricing-to-market behaviour", *American Economic Review*, vol. 83, No. 3, pp. 473-486.
- Korea Trade Association and Korea Institute for Industrial Economics and Trade (1997). *Options for Improving Tariff System to Support Industry* (Seoul).
- Korea Trade and Investment Association (1998). *Overview of Foreign Direct Investment* (Seoul).
- Korea Investment Service Center (1998). *Introduction to Foreign Direct Investment System* (Seoul).
- Krugman, P. (1998). "Fire-sale FDI", mimeo, March.
- Lee, K.H. and H.Y. Cho (2003). *A Study on Technology Transfer from Foreign Direct Investment: The Case of IT Industry* (Seoul, Korea Information Strategy Development Institute).
- Min, Byung S. (1999). "Impact of the financial crisis on bank-big business group relationship in Korea: some corporate governance context", *Economic Papers*, vol. 18, No. 3 (St. Ives, Economic Society of Australia), pp. 59-72.
- _____, (2003). "Dynamic prospects for Korean banks' monitoring of business groups" in M.J. Tcha and C.S. Suh, eds., *The Korean Economy at the Crossroads* (New York, Routledge Curzon), chapter 11, pp. 187-199.
- Shin, Y.S. (2004). "Structural change in Korea's imports and exports and its policy implications", mimeo, Korea Institute of Finance, Seoul.

Impact on the Environment of Thailand's Trade with OECD Countries

*Kakali Mukhopadhyay**

ABSTRACT

The impact of trade liberalization on the environment is a matter of debate. Two conflicting hypotheses have emerged from the debate. One, the pollution haven hypothesis, suggests that the developed countries impose tougher environmental policies than do the developing countries, which results in distortion of existing patterns of comparative advantage. Thus, the polluting industries shift operations from the developed to the developing countries; developing countries therefore become “pollution havens.” The second hypothesis, the factor endowment hypothesis, predicts that trade liberalization will result in trade patterns consistent with the Heckscher-Ohlin-Vanek theory of comparative advantage based on factor endowment differentials. Rich countries are well endowed with capital. Since capital-intensive goods are often also pollution-intensive, factor-endowment theories of international trade predict that rich countries specialize in polluting goods. Thus, the manifestation of the pollution haven hypothesis is in direct conflict with the factor

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(continued from page 25)

endowment hypothesis. This debate is of great concern among economists, environmentalists and the World Trade Organization.

Among all South and South-East Asian countries, Thailand can be regarded as one of the fastest growing economies. The average annual growth rate between 1980 and 2004 was about 7 per cent (NESDB, 2003). This high economic growth rate was led by the growth in the manufacturing sector. Liberalization of trade has been the main driver and cornerstone of growth in the Thai economy. Countries in the Organisation for Economic Co-operation and Development (OECD) are major trading partners of Thailand and hold a consistent share of the country's total trade: approximately 55 per cent during the period from 1980 to 2000 (Bank of Thailand, various years). Throughout the past four decades, Thailand has been a significant recipient of foreign direct investment (FDI) among developing countries and these inflows boomed in the period 1995-2000. An important proportion of FDI has been from OECD countries. The major receiving sector of OECD investment is industry, the share of which has increased from 52.7 per cent of the total in 1990 to 62.6 per cent in 2000. This paper evaluates the impact on the environment of Thailand's trade with OECD countries, focusing on the two hypotheses during the period 1980 to 2000. Further, it examines the implications of FDI for the environment. The framework of the analysis is based on the input-output approach extended and modified for the purpose of this study. Results show that Thailand was a pollution haven in 2000, which does not support the factor endowment hypothesis. Moreover, FDI promotes exports that have impacts on the environment. Policy implications are discussed in the paper.

1. INTRODUCTION

One of the major policy challenges of the decade is to promote liberal trade while protecting the environment and preserving natural resources. International trade contributes to economic growth and benefits all participating countries, while economic growth, in turn, increases the demand for environmental quality. This complex relationship between trade and the environment has generated debate. Two conflicting hypotheses have emerged from the debate. The first one, the pollution haven hypothesis, suggests that the developed countries impose tougher environmental policies than do developing countries, which results in distortion of existing patterns of comparative advantage. Thus, polluting industries shift operations from the developed to the developing countries; developing countries therefore become "pollution havens". The second hypothesis, the factor endowment hypothesis, predicts that trade liberalization will result in trade patterns consistent with the Heckscher-Ohlin-Vanek theory of comparative advantage based on

factor-endowment differentials. Developed countries are well endowed with capital. Since capital-intensive goods are often also pollution-intensive, factor-endowment theories of international trade predict that developed countries specialize in producing polluting goods. Thus, the manifestation of the pollution haven hypothesis is in direct conflict with the factor endowment hypothesis. This debate is of great concern to economists, environmentalists and the World Trade Organization (WTO).

Thailand is a good laboratory for testing these two hypotheses. Among all South and South-East Asian countries, Thailand can be regarded as one of the fastest growing economies. The average annual economic growth rate between 1980 and 2004 was about 7 per cent. The country's liberalized trade policy has been the main driver and cornerstone of this growth.

Thai exports have increased significantly by 45 per cent in the period 1980-1985, 342 per cent by 1990, 955 per cent by 1995 and a staggering 2,406 per cent by 2003. Just as Thailand's exports experienced rapid growth so have its imports.

OECD countries are major trading partners of Thailand and account for a consistent share of approximately 55 per cent of the country's total trade during the period from 1980 to 2000. Thai exports to OECD countries doubled in value terms with diversification since the mid-1990s, whereas imports from OECD countries followed a less regular trend. In terms of investment, the OECD share was more than 65 per cent in 2000, the most important source of foreign direct investment in Thailand; it was followed by that of the Asian newly industrialized economies. Thailand's intra-industry trade has also grown significantly.

The diversification of the structure of Thailand's trade with OECD countries and the inflow of FDI has important implications for the environment and this matter needs to be researched. The current paper evaluates the impact on the environment of Thailand's trade with OECD countries, focusing on the two conflicting hypotheses (pollution haven and factor endowment) during the period from 1980 to 2000. Further, it analyses the implications for the environment of FDI from OECD countries.

The organization of the paper is as follows: the literature dealing with trade and environment is reviewed in section 2; discussions on the results are presented in sections 3 and 4; section 5 concludes with some policy implications; and information on the methodology and the data are provided in the appendix.

2. REVIEW OF THE LITERATURE

The literature linking trade and environment is growing (Tobey, 1990; Lucas and others, 1992; Low and Yeates, 1992; Mani and Wheeler, 1998; Cole and Elliott, 2001; Xing

and Kolstad, 2002; Eskeland and Harrison, 2003; Copeland and Taylor, 2003; Javorcik and Wei, 2005; Waldkirch and Gopinath, 2004). Several attempts have been made to use input-output models to address the issue (Wyckoff and Roop, 1994; Gale and Lewis, 1995; Antweiler, 1996; Proops and others, 1999; Machado and others, 2001; Munksgaard and Pedersen, 2001). However, only a few have addressed the pollution haven hypothesis and factor endowment hypothesis using the input-output model (Mukhopadhyay and Chakraborty, 2005a and 2005b).

The brief review of the literature suggests that the empirical evidence is still far from clear (Copeland and Taylor, 2004). The methodologies employed to test the hypotheses widely vary as do the results. Discussions about Thailand's trade-environmental relationship has received some attention in recent years (UNCTAD/UNDP, 1994; TDRI, 1996 and 2000; Jha and others, 1999; TEI, 2000). Unfortunately, no comprehensive work has been done in Thailand involving these issues together, in particular using input-output techniques.

3. DISCUSSION OF RESULTS OF THE MODEL

(a) *Does a pollution haven matter for Thailand?*

Japan, the United States and the European Union are Thailand's main trading partners. Since the pollution haven hypothesis originates from the North-South debate, the evidence on Thailand's trade with OECD countries will throw insight on the debate. An index known as the pollution terms of trade (equation 6) has been used to capture the pollution haven effect. The results are presented in table 1.

Table 1. Pollution terms of trade of Thailand with OECD countries for emissions of carbon dioxide, sulphur dioxide and nitrogen oxides from 1980 to 2000

<i>Emission</i>	<i>Thousands of tons of carbon dioxide</i>			<i>Thousands of tons of sulphur dioxide</i>			<i>Thousands of tons of nitrogen oxides</i>		
	<i>1980</i>	<i>1990</i>	<i>2000</i>	<i>1980</i>	<i>1990</i>	<i>2000</i>	<i>1980</i>	<i>1990</i>	<i>2000</i>
Pollution embodied in exports	4 120.11	2 711.49	8 579.35	41.55	26.14	83.11	9.13	11.76	35.47
Pollution embodied in imports	8 433.57	3 014.48	5 573.90	82.79	27.29	50.72	19.58	19.87	35.34
Pollution terms of trade	0.4885	0.8994	1.5392	0.5018	0.95786	1.6384	0.4664	0.5917	1.003
Pollution terms of trade*100	48.85	89.94	153.92	50.18	95.78	163.84	46.64	59.17	100.39

Source: Results are calculated by the author based on equation 6 in the methodology section in the appendix.

The values of the indices as displayed in table 1 show dramatic changes. The pollution terms of trade reveal an increasing trend of the indices during the period from 1980 to 2000 for all three pollutants. The values of the pollution terms of trade were below 100 during the 1980s and 1990s. In contrast, the values of the pollution terms of trade for 2000 were above 100 for all three pollutants. These results imply that Thailand exports dirty goods and imports clean goods. This finding seems to support, or at least not contradict, the pollution haven hypothesis for Thailand in the year 2000. In other words, Thailand's trade with OECD countries has had varied implications for the environment over the period 1980-2000. In the 1980s, the environmental impact was moderate but with the passage of time its severity increased; by the end of 2000, Thailand's trade with OECD countries created unfavourable impacts on the environment, thus turning Thailand into a pollution haven. Why has this happened? This question is explored in the following paragraphs.

The most prominent sectors in respect of the shares of exports and imports during the study period are presented in tables 2 and 3, respectively. Table 2 reveals a significant change in the composition of exports. The structure of Thailand's exports in the 1990s has diversified into a wide variety of products compared with those in the 1970s and 1980s.

Table 2. Share of exports of Thailand to OECD countries for the top 10 sectors
(Percentage)

<i>Major sectors</i>	<i>1980</i>	<i>Major sectors</i>	<i>1990</i>	<i>Major sectors</i>	<i>2000</i>
Food and food products	34.17	Food and food products	15.85	Radio, television sets, communication equipment	24.01
Non-ferrous basic metals	16.64	Miscellaneous services	14.12	Electrical and electronic appliances	14.77
Rubber products	9.90	Radio, television sets, communication equipment	12.44	Industrial machinery	10.09
Jewellery and related articles	6.22	Jewellery and related articles	8.56	Food and food products	9.97
Textiles	5.83	Leather and leather products	7.25	Miscellaneous manufacturing industries	6.95
Agricultural products	5.75	Other transport services	5.85	Other transport equipment	4.45
Electrical and electronic appliances	4.93	Textiles	5.57	Miscellaneous metal products	4.33
Miscellaneous services	3.29	Miscellaneous manufacturing industries	5.29	Jewellery and related articles	3.05
Miscellaneous manufacturing industries	2.67	Electrical and electronic appliances	4.85	Iron and steel	2.88
Other transport services	1.57	Industrial machinery	4.21	Wood and wood products, including furniture	2.84

Source: The share of exports and imports has been calculated by the author from input-output table of Thailand, 1980, 1990, 2000.

Table 3. Share of imports of Thailand from OECD countries for the top 10 sectors
(Percentage)

<i>Major sectors</i>	<i>1980</i>	<i>Major sectors</i>	<i>1990</i>	<i>Major sectors</i>	<i>2000</i>
Industrial machinery	15.59	Industrial machinery	24.81	Radio, television sets, communication equipment	21.10
Iron and steel	9.40	Other transport equipment	16.73	Industrial machinery	10.41
Miscellaneous services	8.38	Iron and steel	11.69	Miscellaneous metal products	8.83
Basic chemicals	7.71	Electrical and electronic appliances	9.75	Other transport equipment	8.17
Other transport equipment	6.99	Miscellaneous metal products	6.97	Electrical and electronic appliances	7.54
Miscellaneous metal products	6.79	Non-ferrous basic metals	4.04	Iron and steel	6.96
Other chemicals	6.30	Basic chemicals	3.65	Basic chemicals	5.33
Electrical and electronic appliances	4.62	Radio, television sets, communication equipment	3.46	Miscellaneous manufacturing industries	4.05
Fertilizers	4.17	Plastic products	2.31	Jewellery and related articles	3.43
Textiles	3.61	Textiles	2.23	Food and beverages	2.94

Source: The share of exports and imports has been calculated by the author from input-output table of Thailand, 1980, 1990, 2000.

Thailand's major exports in 1980 comprised food and food products, with a 34.17 per cent share. It dropped to 9.97 per cent in 2000. During the 1970s, agriculture was the main contributor to GDP and agricultural exports remained the main driving force behind the country's overall economic growth. From the late 1980s, the situation went into reverse and farm acreage shrank (Phongpaichit and Baker, 2003). The population directly supported by agriculture dropped by almost 4 million. Agriculture's contribution to GDP also declined. This rapid decline was partly a result of falling prices, faltering global trade and competition in the global rice market. Once the export-led industrial boom began in the mid-1980s, both public and private investment began to be concentrated in the urban economy to the detriment of agriculture. During the 1980s and 1990s, the orientation was more on textiles, rubber products and leather. On the other hand, radios, television sets, communication equipment, industrial machinery and electrical and electronic appliances together captured market shares of 21.55 per cent in 1990 and 48.87 per cent in 2000. Demand for these goods is favourable in the international market. These figures reveal how with the passage of time Thailand has become an exporter of manufactured goods to OECD countries, while the role of agriculture is declining. Another interesting feature observed in Thailand's trade with OECD countries is intra-industry trade. For example, Thailand imports from the United States and Japan raw materials for manufacturing electrical and electronic appliance products; it then exports the final product after assembly. For some

industries, Thailand acts as a component supplier; assembly of the final product is provided by the developed country.

The composition of the imported commodities has not changed significantly. The major sectors predominantly are basic chemicals, radio and television sets, communication equipment, other transport equipment, electrical and electronic appliances, iron and steel, and industrial machinery (see table 3). A large part of Thai imports are capital goods and intermediate products and raw materials which are used in expanding industrial capacity and supply inputs for many of Thailand's export industries.

The high value of the pollution terms of trade (more than 100) in 2000 was due to the high level of pollution generated by export-intensive sectors. Several questions might arise in this respect. Why has the composition of the traded commodities in Thailand changed? Why is Thailand exporting pollution-intensive goods at the cost of the environment? Are government policies not stringent enough to tackle these problems? To address all these issues it is necessary to take a critical look at the government policies, especially those relating to trade and environment.

Thailand's first national economic development plan was launched in 1961; it focused on import substitution in order to promote industrialization. The use of tariffs was the major instrument to influence the country's development path and Thailand effectively began in 1974 to promote domestic industry. A shift in the country's trade policy of export promotion has taken place, resulting in a reduction in tariff since the mid-1980s. The maximum rate was reduced from 100 per cent in the early 1990s to 30.24 per cent by the end of the 1990s, to 21 per cent in 1995 and to 17.01 per cent in 1997.

To promote exports, the Government of Thailand adopted several measures, especially after the 1980s (for example, lifting of export quota, reducing export duties on several commodities, providing business tax exemptions, promoting investment in manufacturing industries with strong export potential, such as those producing automobiles and parts, and extending export credit).

Thus, the Thai economy changed gears after the mid-1980s. As a result, the export of manufactures and services grew almost sixfold in six years. In the latter half of the 1980s, major Japanese firms transferred production processes to Thailand. Foreign investment in Thailand accelerated considerably from 1988 to 1990. The first stage of growth in export industries was focused mostly on labour-intensive and resource-based industries and led by domestic or joint ventures with Thai firms which had originally been established to supply the domestic market. By the end of that decade, foreign investment had begun to change the export mix towards technology-based products. Textile firms from Japan and garment firms from Hong Kong, China and Taiwan Province of China had relocated production to Thailand and other overseas sites since the 1970s. Such firms were

highly pollution intensive. Several major gem- and diamond-cutting businesses relocated to Thailand. After the 1990s, over half of the total exports increased basically from technology-based industries, especially automotive parts, computer parts and electrical goods which are highly pollution intensive (Lucas and others, 1992). By the late 1990s, Thailand had become one of the world's largest assemblers of disk drives for computers, and emerged as a regional centre for automobile manufacture. The three subsectors of automotive vehicles and parts, electrical goods and computer parts contributed significantly to total exports. Thailand's trade history reflects how the pollution-intensive industries relocated to Thailand. In this context, it may be said that Thailand always followed the strategy of "grow first, clean up later".

Thailand's proactive and ambitious trade policies aggressively pushed to increase the country's share of the global export market by means of establishing a healthy collection of bilateral and regional free trade agreements with its trading partners. Thailand signed the General Agreement on Tariffs and Trade/World Trade Organization protocol concluding the Uruguay round. The development of the North American Free Trade Agreement (NAFTA) has had an impact on Thai trade patterns with the United States. While NAFTA gives Thailand access to a larger market (United States, Canada and Mexico), Thailand also faces increased price competition from Mexico in some product lines. Another issue affecting Thai exports is the use of antidumping measures and countervailing duties on Thai products, as initiated by United States producers and carried out by the Government of the United States. However, United States investment has resulted in significant technology transfer to Thailand, which has created a great impact on the country's economy. Further, a "free trade area" under the framework of ASEAN was initiated by Thailand in June 1991; its goal was to integrate production structures towards improving the export outlook of ASEAN in the global market.

Although the above-mentioned trade strategies and policies relating to trade liberalization helped Thailand to diversify and boost its exports, this situation was not favourable to the environment. This adverse outcome has been made worse by the weakness of, and non-compliance with, environmental regulations.

Environmental regulations: To combat environmental deterioration resulting from trade-oriented growth, several pieces of environmental legislation were introduced in the past few years. The first such legislation was passed in 1975. However, a more comprehensive piece of environmental legislation is the 1992 Enhancement and Conservation of National Environmental Quality Act, which provides for a strong command-and-control regulatory framework to set standards and to monitor and enforce them. That Act strengthens existing laws within a policy framework outlined in the Seventh National Economic and Social Development Plan (1991-1996), which emphasized environmental standards. Another important legal instrument is the 1992 Factories Act, which regulates waste discharge from industrial plants. Similarly, the 1992 Hazardous

Substances Act provides control over the production, import and export or possession of hazardous substances that could become hazardous waste in the future. The Government introduced the Energy Conservation and Promotion Act in 1992 in order to promote and initiate energy conservation among all parties.

In addition, several policies were introduced for improving air quality. Two main government agencies have direct responsibility for monitoring air quality. The Pollution Control Department has established networks for monitoring air quality in five regions of Thailand and a total of 52 air quality monitoring stations are in operation.

A number of measures have been enforced to reduce ambient carbon monoxide concentrations. New automobiles must be equipped with specific pollution-control devices, such as catalytic converters, and fuel for vehicles must contain certain levels of oxygen in order to reduce the generation of carbon monoxide. The Government has also taken some steps to lower the sulphur content in fuel. For example, an order was issued in July 1994 to lower the sulphur content in fuel oil residues used in Bangkok and surrounding areas; sulphur content is not to exceed 2 per cent of the fuel by weight (TDRI, 2000). The same order was restructured in 1998 and again in 1999 to limit nationwide the sulphur content of fuel oil residues.

In spite of all these efforts, the implementation of the regulations has been far below expectations, as described in a report providing a detailed analysis of the reasons (TDRI, 2000). Lack of enforcement is a basic problem in Thailand. The degradation of the environment is the result of institutional failure, among other reasons. The policies, rules and organizations created to protect the environment also are not effective. One of Thailand's major strategies has been to encourage the private sector to play a key role in the economy. However, the private sector does not always support and promote environmental quality by adopting environment-friendly production processes. Moreover, although the country has no suitable environmental tax, Thailand proceeded to apply some tax measures to control pollution as of May 1997. Nonetheless, the December 2002 Environmental Sustainability Index, which was calculated by the World Economic Forum 2000 to show the state of the environment and how it is affected by human activities, ranked Thailand 46th out of 56 countries in terms of environmental sustainability. In a recent study, Rock (2002) discussed in detail the pollution management strategies in East Asia, comparing the performance of several economies (China, Indonesia, Malaysia, Singapore, Taiwan Province of China and Thailand) concluded that "to date, Thailand has had the least success in reducing industrial pollution and improving ambient environmental quality". Lax environmental regulations and non-compliance have thus distorted the pattern of comparative advantage in Thailand. The differences in the cost of complying with environmental regulations in Thailand compared with OECD countries have resulted in OECD countries relocating some industries in Thailand, thus pushing Thailand further towards being a pollution haven.

In this connection, it should be noted that differences in pollution policy are only one of many factors that affect trade. Relative production costs are determined not by pollution regulations alone and they are not an important determinant of costs (Copeland and Taylor, 2003). If other factors dominate to outweigh the effects of pollution policy on comparative advantage, trade may not result in a concentration of polluting industries in countries with weak environmental regulations. Developed countries are relatively capital abundant compared with developing countries, which are relatively labour abundant. Traditional factor-endowment effects would give a comparative advantage to high-income countries in dirty industries.

Whether additional motives for trade change these results needs to be examined. In other words, the next task is to investigate the role of factor endowments in determining Thailand's trade with OECD countries during the same period.

(b) Evidence relating to the factor endowment hypothesis

Estimates of capital and labour requirements to produce exports and imports worth 1,000 baht in 1980, 1990 and 2000 respectively, derived by equations 7 to 10, are reported in table 4.

The results show that Thailand's exports required more capital than did its imports in 2000 (imports are 5 per cent less capital intensive than exports). On the other hand, Thailand's imports were 33 per cent and 20 per cent more capital intensive than exports in

Table 4. Capital and labour requirements in exports and imports
(Thailand and OECD countries)

	1980		1990		2000	
	Capital requirements per 1,000 baht of output	Labour requirements per 1,000 baht of output	Capital requirements per 1,000 baht of output	Labour requirements per 1,000 baht of output	Capital requirements per 1,000 baht of output	Labour requirements per 1,000 baht of output
Exports	A _{kx} = 189003680.5	A _{lx} = 1321655.8	A _{kx} = 780161741.8	A _{lx} = 1872121.8	A _{kx} = 1713874498.0	A _{lx} = 1792523.8
Imports	A _{km} = 273144212.6	A _{lm} = 1432131.2	A _{km} = 530122021.1	A _{lm} = 1057617.2	A _{km} = 1165240358.1	A _{lm} = 1272383.7

Source: Results are calculated by the author based on equations 7-10 in the methodology section in the appendix.

Note:

1980

$$K_x = A_{kx}/A_{lx} = 143.005$$

$$K_m = A_{km}/A_{lm} = 190.725$$

$$K_m = 1.33 K_x$$

1990

$$K_x = A_{kx}/A_{lx} = 416.725$$

$$K_m = A_{km}/A_{lm} = 501.241$$

$$K_m = 1.20 K_x$$

2000

$$K_x = A_{kx}/A_{lx} = 956.1236$$

$$K_m = A_{km}/A_{lm} = 915.793$$

$$K_m = 0.95 K_x$$

1980 and 1990 respectively (table 4). According to the theory of factor abundance, Thailand, a developing economy, is supposed to export labour-intensive goods and import capital-intensive ones. However, Thailand was exporting capital-intensive goods in 2000. Thus, the evidence does not support the factor endowment hypothesis for Thailand for the year 2000, while it does for 1980 and 1990.

Why is this so? The shifting of exports from agriculture to manufacturing and from manufacturing to the emerging groups is one of the most important reasons for the change of production technology, from labour-intensive to capital-intensive technology. The scarcity of skilled labour has been another problem (Bank of Thailand, various years). Table 5 shows how Thailand has shifted its export economy from labour intensity to capital intensity.

Table 5. Percentage of labour and capital intensiveness in share of exports

<i>Exports (share of total)</i>	<i>1981-1985</i>	<i>1986-1990</i>	<i>1991-1995</i>	<i>1996-2000</i>
Labour share	15.7	27.8	25.9	16.7
Capital share (technology based)	7.0	20.9	39.9	54.2

Source: Bank of Thailand, *Quarterly Bulletin* (various issues).

During the first half of the 1980s the share of labour was more than that of capital, while in the first half of the 1990s, the share of capital was more than that of labour and in the second half of that decade the share was more than double that of labour. The transfer of technology with huge foreign investments in Thailand started coming from OECD countries (especially Japan and the United States). Industries which were set up in Thailand after the 1990s by other countries were generally large scale and capital intensive, with less employment-generation. Furthermore, the opening of such low-cost locations as China and Viet Nam undermines Thailand's comparative advantage in labour-intensive manufacturing to more skill- and capital-intensive activities. The export sectors with high employment and strong linkages, namely, agriculture, and resource-based and labour-intensive manufacturing, grew minimally. The resources have moved out of labour-intensive agricultural industries into more capital- and skill-intensive manufacturing and services industries. Thus, the above discussion provides an explanation why Thailand's exports were more capital intensive than labour intensive in 2000.

So far the paper has evaluated the impact of liberalized trade on the environment, focusing on two hypotheses: pollution haven and factor endowment. In this connection it has investigated the role of environmental regulations, factor endowments, trade policies and environmental energy policies and so on. It is important to note that the impact of trade flows on the environment can also be influenced by FDI other than the above-mentioned factors. The implications of FDI on the environment in Thailand will now be considered.

4. FDI AND ITS IMPACT ON THE ENVIRONMENT

The role of FDI has been widely recognized as a growth-enhancing factor in developing countries. Various studies have focused on the contribution of FDI to the economic development of Thailand (Pupphavesa and Pussarungsri, 1994; Siamwalla and others, 1999; Kohpaiboon, 2003).

In Thailand, the liberalization of trade and the ability to attract foreign investment have moved hand in hand. Foreign direct inflows of investment to Thailand boomed in the period 1995-2000. They increased from around \$515 million during the period 1970-1975 to over \$17,416 million during the period 1996-2000. The share of FDI in gross domestic investment (GDI), which was about 2-3 per cent in the 1980s, reached about 20 per cent in 2000. Further, over the years the share of total FDI entered mainly the manufacturing sector.

An important proportion of FDI has been from OECD countries (about 67.8 per cent in 1987, increasing to almost 75.7 per cent in 2000). The major receiving sector of OECD investment has been industry, the share of which increased from 52.7 per cent in 1990 to 62.6 per cent in 2000 (table 6). Electrical and electronic appliances, machinery and chemicals deserve mention. Japan was the major player in FDI in Thailand in the years prior to the crisis. Throughout the 1990s major investment from Japan was in electrical appliances, machinery and transport equipment. Along with Japan, the United States and the European Union have also been important sources of FDI. The attractions of investing in Thailand were varied: macroeconomic stability, rapid expansion of the domestic market (GNP growth of more than 6 per cent per annum during the period 1985-1995) and low labour cost, which provided a platform for exports and devaluation of the baht in 1984. There has been migration of dirty industries to Thailand from developed countries such as Japan. The appreciation of the Japanese yen resulted in relocation of production bases from Japan to Thailand in order to take advantage of the comparative advantage of Thailand.

FDI was predominant in import-substitution industries in the late 1970s. However, an increasing share of FDI was directed to more export-oriented activities, with a shift towards the manufacturing sector in the late 1980s and 1990s. The earlier analysis (section 4) clearly indicated that there has been a dramatic change in the composition of exports from agro-based ones to manufactures over the period 1980 to 2000. FDI played an important role in this shift.

What has been the effect of FDI on the environment? As is the case for trade, the environmental effects of FDI can be positive or negative. FDI helped to spur Thailand's competitiveness in international trade. The increase in competition for goods has prompted investors from high-cost production countries to relocate their production to low-cost countries. This relocation trend contributed not only to the structural development of the manufacturing sector in Thailand but also has an impact on the environment.

Table 6. Share of net inflow of FDI from OECD countries among sectors
(Percentage)

<i>Sectors</i>	<i>1987</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>
1. Financial institutions	8.70	5.62	0.34	7.96
2. Trade	17.26	16.12	23.13	10.91
3. Construction	12.68	6.47	1.94	0.77
4. Mining and quarrying	3.08	1.62	2.87	0.15
5. Agriculture	2.86	1.45	0.74	0.02
6. Industry	45.94	52.72	58.64	62.64
6.1 Food	2.21	2.95	1.27	1.05
6.2 Textiles	4.97	1.75	3.46	0.65
6.3 Metal-based and non-metallic	9.83	6.41	5.95	6.27
6.4 Electrical appliances	11.80	20.78	24.12	16.22
6.5 Machinery and transport equipment	2.06	5.65	9.02	20.34
6.6 Chemicals	8.63	7.04	5.28	13.95
6.7 Petroleum products	0.01	2.43	5.32	0.01
6.8 Construction materials	0.08	0.02	0.17	1.44
6.9 Other industry	6.35	5.68	4.05	2.70
7. Services	6.25	3.08	2.68	4.63
8. Investment	0.00	0.00	0.88	0.39
9. Real estate	3.22	11.81	8.78	1.33
10. Others	0.00	1.11	0.01	11.21
Total	100	100	100	100

Source: Computed by the author from the published and unpublished data of the Bank of Thailand.

To assess the impact, the pollution content of FDI from OECD countries was computed following equation 11 in the technical appendix for the year 2000. The results are 428.49 tons of carbon, 3.54 tons of sulphur and 4.07 tons of nitrogen oxides for carbon dioxide, sulphur dioxide and nitrogen oxides, respectively.

Moreover, FDI can be treated as an input in the economy for enhancing its productive capacity. This in turn has influenced the export performance of the economy and generated pollution. This has been modelled in equation 4*. Computations show that the pollution content of exports fuelled by FDI were 343.14 tons of carbon for carbon dioxide, 3.09 tons of sulphur for sulphur dioxide and 3.06 tons of nitrogen oxides for nitrogen oxides during 2000. These values clearly indicate the contribution of FDI (more than 80 per cent) to the generation of pollution from the export sectors.

Thus, the above discussion shows that the environmental implication of FDI from OECD countries in Thailand has not been favourable. On the other hand, the rapidly growing economies of Asia, such as China and Malaysia, have been successful in attracting FDI flows during the 1990s and these have had no negative impacts on the environment (Rock, 2002).

5. CONCLUSIONS AND POLICY IMPLICATIONS

The complex interrelationship between trade and the environment has become a focal point for international as well as national policymakers. With this in mind, the current research has assessed the impact on the environment of Thailand's trade with OECD countries during the period 1980-2000, focusing on the contradictory hypotheses, i.e., the pollution haven and factor endowment hypotheses. The environmental indicators for this work concentrate only on air pollution (emissions of carbon dioxide, sulphur dioxide and nitrogen dioxides) from fossil fuel combustion. It measures Thailand's environmental gains or losses from trade with OECD countries.

The findings of the study emphasize two aspects, i.e., why a pollution haven matters for Thailand and factor endowment does not. The analysis of the effect of FDI on the environment has demonstrated that, although the role of FDI helped to promote exports for Thailand, it has not been environmentally friendly. These effects have been caused primarily by the shift in the trade policy, from exports of agricultural products to manufactures, lax environmental regulations with ineffective implementation and the increased capital intensity of exports.

The current findings can be compared with those of other studies. The results are in line with those of Low and Yeats (1992) and Waldkirch and Gopinath (2004), but contradict those of Busse (2004) and Mukhopadhyay and Chakraborty (2005a and 2005b). On the other hand, Mani and Wheeler (1998), Cole and Elliott (2001), Copeland and Taylor (2003) provide mixed results. Our findings provide stronger evidence concerning the two hypotheses and thus are thought-provocative.

The current study has important implications for other developing countries in the region. For example, China, Malaysia and the Philippines, which are also following a similar export-driven growth path induced by FDI, would likely be enduring similar types of environmental impacts. Although these countries may have stricter environmental regulations compared with those of Thailand, they are far below OECD standards. Thus, the possibility of these countries being pollution havens cannot be ruled out. However, determination of such a status would require a thorough investigation.

From this study several policies involving trade and the environment can be suggested. The Government of Thailand should put proper emphasis on the environmental

quality of exported goods that will create sustainable trade in the future, as the country's economy is now highly dependent on exports. "Greener" trade should be given preference continuously by the Government.

- (a) Instead of too much emphasis on the export of capital-intensive goods, a balanced export strategy combining labour- and capital-intensive goods could be considered;
- (b) To maintain environmental quality the Thai Government should adopt trade-restricting measures for pollution-intensive export goods: (i) to achieve this, implementation of taxes or tariffs based on the environmental impact of the production of the goods, known as **eco-duties**, may be considered; (ii) instead of command-and-control policy, economic instruments (for example, fuel user charges, emission charges and pollution management fees) might be applied in order to manage industrial air pollution. An **energy tax** based on the estimated consumption of energy during the production of goods might be levied as another policy option;
- (c) Technological improvements in producing "green" products would require greater expenditures on research and development. For that the Government could provide financial incentives in the form of tax rebates/exemptions for the firms. In this context, the Government could also consider providing subsidies for the users of imported technology necessary for the production of so-called green products;
- (d) A large number of small and medium-sized enterprises involved in export activities are less interested in developing and procuring new technologies that have the least adverse impact on the environment. The Government should take the initiative in promoting research and development of technologies and management techniques suitable for small and medium-sized enterprises;
- (e) Last but not least, the Government of Thailand should adopt a more proactive stance concerning foreign environmental regulations affecting Thai producers. Stricter standards are in the offing, so early action by the Government would be helpful to Thai firms to enable them to adjust to external regulations.

Thus, the study suggests that the Government of Thailand should integrate both trade and environmental policies in a coherent manner (trade-related environmental measures and environment-related trade measures) in order to realize gains from trade while protecting the environment.

REFERENCES

- Antweiler, W. (1996). "The pollution terms of trade", *Economic Systems Research*, vol. 8, No. 4, pp. 361-365.
- Bank of Thailand. *Annual Report* (various issues).
- Busse, M. (2004). *Trade, Environmental Regulations and the World Trade Organization: New Empirical Evidence*, World Bank Policy Research, Working Paper 3361, July.
- Cole, M.A. and R.J.R. Elliott (2001). *Factor Endowments or Environmental Regulations? Determining the Trade-Environment Composition Effect*, Discussion Paper 01-06, (Birmingham, University of Birmingham, Department of Economics).
- Copeland B.R. and M.S. Taylor (2003). *Trade and the Environment: Theory and Evidence* (Princeton, New Jersey, Princeton University Press).
- _____ (2004). "Trade, growth and the environment", *Journal of Economic Literature*, vol. 42, No. 1, pp. 1-128.
- Department of Alternative Energy Development and Efficiency (1980). *Thailand Energy Situation in 1980* (Bangkok, Ministry of Energy).
- _____ (1990). *Thailand Energy Situation in 1990* (Bangkok, Ministry of Energy).
- _____ (2000). *Thailand Energy Situation in 2000* (Bangkok, Ministry of Energy).
- Eskeland, G.S. and A.E. Harrison (2003). "Moving to greener pastures? Multinationals and pollution haven hypothesis", *Journal of Development Economics*, vol. 70, No. 1, pp. 1-23.
- Gale, I.V. and R. Lewis (1995). "Trade liberalization and pollution: an input-output study of carbon dioxide emissions in Mexico", *Economic Systems Research*, vol. 7, No. 3, pp. 309-320.
- International Monetary Fund (various years). *International Financial Statistics* (Washington, D.C.).
- Javorcik, Beata S. and Shang-Jin Wei (2004). "Pollution havens and foreign direct investment: dirty secret or popular myth?", *Contributions to Economic Analysis & Policy*, vol. 3, No. 2 (Berkeley, California, The Berkeley Electronic Press), Article 8.
- Jha, Veena, A. Markandya and R. Vossenaar (1999). *Reconciling Trade and Environment: Lessons from Case Studies in Developing Countries*, Trade Environment and Development Section, UNCTAD (Cheltenham, United Kingdom, Edward Elgar Publishing Company).
- Kohpaiboon, A. (2003). "Foreign trade regimes and the FDI-growth nexus: a case study of Thailand", *The Journal of Development Studies*, vol. 40, No. 2, pp. 55-69.

- Leontief, W. (1951). *The Structure of the American Economy, 1919-1939*, second edition, (New York, Oxford University Press).
- Low, P. and A. Yeats (1992). "Do dirty industries migrate?", in P. Low, ed., *International Trade and the Environment*, World Bank Discussion Paper No. 159, (Washington, D.C., World Bank), pp. 89-104.
- Lucas, R., D. Wheeler and H. Hettige (1992). "Economic development, environmental regulation, and international migration of toxic industrial pollution: 1960-1988", in P. Low, ed., *International Trade and the Environment*, World Bank Discussion Paper No. 159 (Washington, D.C., World Bank), pp. 67-88.
- Machado. G., R. Schaeffer and E. Worrell (2001). "Energy and carbon embodied in the international trade of Brazil: an input-output approach", *Ecological Economics*, vol. 39, No. 3, pp. 409-424.
- Mani, M. and D. Wheeler (1998). "In search of pollution havens? Dirty industry in the world economy, 1960-1995", *Journal of Environment and Development*, vol. 7, No. 3, pp. 215-247.
- Mukhopadhyay, K. and D. Chakraborty (2005a). "Environmental impacts of trade in India", *International Trade Journal*, vol. 19, No. 2, pp. 135-163.
- _____ (2005b). "Is free trade good for the environment? Evidence from India," *Asia Pacific Development Journal*, vol. 12, No. 1, pp. 109-136.
- Munksgaard, J. and K.A. Pedersen (2001). "CO₂ accounts for open economies: producer or consumer responsibility?", *Energy Policy*, vol. 29, No. 4, pp. 327-335.
- National Economic and Social Development Board (1984). *Input-Output Tables of Thailand for the Year 1980* (Bangkok, Office of the Prime Minister).
- _____ (1994). *Input-Output Tables of Thailand for the Year 1990* (Bangkok, Office of the Prime Minister).
- _____ (2002). *Capital Stock of Thailand* (Bangkok, Office of the Prime Minister).
- _____ (2003). *National Income of Thailand, 1980-2001 edition* (Bangkok, Office of the Prime Minister).
- _____ (2004). *Input-Output Tables of Thailand for the Year 2000* (Bangkok, Office of the Prime Minister).
- National Statistical Office (1981). *Report of the Labour Force Survey, Whole Kingdom* (Bangkok, Office of the Prime Minister).
- _____ (1981). *Report of the Manufacturing Industry Survey, Whole Kingdom*, (Bangkok, Office of the Prime Minister).
- _____ (1991). *Report of the Labour Force Survey, Whole Kingdom* (Bangkok, Office of the Prime Minister).

- _____ (1991). *Report of the Manufacturing Industry Survey, Whole Kingdom*, (Bangkok, Office of the Prime Minister).
- _____ (2001). *Report of the Labour Force Survey, Whole Kingdom* (Bangkok, Office of the Prime Minister).
- _____ (2001). *Report of the Manufacturing Industry Survey, Whole Kingdom*, (Bangkok, Office of the Prime Minister).
- Organisation for Economic Co-operation and Development (OECD) (1986). *Foreign Trade by Commodities, Export and Import*, vols. I and II (Paris).
- _____ (1992). *Foreign Trade by Commodities 1990*, volume 5, (Paris).
- _____ (2002). *Foreign Trade by Commodities 1996/2001*, volume 5, (Paris).
- Phongpaichit, P. and C. Baker (2002). *Thailand Economy and Politics*, second edition (New York, Oxford University Press).
- Proops, J.L., G. Atkinson, B.F.V. Schlotheim and S. Simon (1999). "International trade and the sustainability footprint: a practical criterion for its assessment", *Ecological Economics*, vol. 28, No. 1, pp. 75-79.
- Pupphavesa, Wisarn and Bunluasak Pussarungsri (1994). *FDI in Thailand* (Bangkok, Thailand Development Research Institutet), April.
- Rock, M.T. (2002). *Pollution Control in East Asia: Lessons from Newly Industrializing Economies* (Washington, D.C., Resources for the Future).
- Siamwalla, Ammar, Yos Vajragupta and Pakorn Vichyanond (1999). *Foreign Capital Flows to Thailand: Determinants and Impact* (Bangkok, Thailand Development Research Institute), November.
- Thailand Development Research Institute (TDRI) (1996). *Environmental Strategy for Thailand*, Natural Resources and Environment Program (Bangkok), September.
- _____ (2000). *The State of Environment in Thailand: A Decade of Change*, Mingsarn Kaosa-ard and P. Wijukprasert, eds., Natural Resources and Environment Program (Bangkok).
- Thailand Environment Institute (TEI) (2000). *The Compatibility of International Trade and Environmental Regulation: Implications for Thailand and Other Developing Nations*, TEI Report (Bangkok) April.
- Tobey, J.A. (1990). "The effects of domestic environmental policies", *Kyklos*, vol. 43, No. 2, pp. 191-209.
- United Nations Conference on Trade and Development (UNCTAD) and the United Nations Development Programme (UNDP) (1994). *The Inter-linkages between Trade and Environment* (Geneva, UNCTAD), June.

- Waldkirch, A. and M. Gopinath (2004). "Pollution haven or hythe? New evidence from Mexico", *International Trade*, No. 0412005, Economics Working Paper Archive at Washington University in St. Louise.
- Wyckoff, A.W. and J.M. Roop (1994). "The embodiment of carbon in imports of manufactured products: implications for international agreements on greenhouse gas emissions", *Energy Policy*, vol. 22, No. 3, pp. 187-194.
- Xing, Y. and C. Kolstad (2002). "Do lax environmental regulations attract foreign investment?", *Environmental and Resource Economics*, vol. 21, No. 1, pp. 1-22.

Appendix

Methodology and Data

The methodology of the study is based on the input-output framework of Leontief (1951). The structure of the input-output model can be framed as follows:

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

or

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

Here X defines the vector of domestic output and A_d , the matrix of the domestic input-output coefficient and $[I - A_d]^{-1}$, the Leontief domestic inverse matrix. Now the emission model can be formulated through (1a).

Emission model

The total amount of an emission from fossil fuel combustion can be calculated as a function of the output of industries:

$$F_{pd} = CL1X_d = C L1 (I - A_d)^{-1} Y \dots\dots\dots(2)$$

Here F_{pd} is a scalar giving the total quantity of an emission from fossil fuel combustion. The emissions in this study are carbon dioxide, sulphur dioxide and nitrogen oxides, defined as pollution type p. In equation (2) CL1 carries only direct and $C L1 (I - A_d)^{-1}$ gives the direct as well as indirect requirement of pollution from industries.

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

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

Pollution Haven Hypothesis

To establish a link between trade and environment, the trade model is developed by extending the equation (2a).

Trade model

Separating the final demand vector as domestic demand (Y_d) and net exports, we obtain

$$Y = Y_d + Y_x - Y_m \dots\dots\dots(3)$$

Where Y_x ($n \times 1$) and Y_m ($n \times 1$) are the vectors of exports and imports respectively. Here we assume identical technology (Heckscher-Ohlin) to determine the pollution content of imports from OECD countries. Thus, the pollution content of exports and imports can be defined as follows:

$$F_{pd} \text{ exp}_{oecd} = SR Y_{x_{oecd}} \dots\dots\dots(4)$$

$$F_{pd} \text{ imp}_{oecd} = SR Y_{m_{oecd}} \dots\dots\dots(5)$$

Equations (4) and (5) are scalar, giving different pollution content of exports and imports. A measure of **pollution terms of trade (PTOT)** for Thailand with OECD countries is derived by equations (4) and (5) as

$$PTOT_{pd \text{ oecd}} = F_{pd} \text{ exp}_{oecd} / F_{pd} \text{ imp}_{oecd} = [SRY_{x_{oecd}}] / [SRY_{m_{oecd}}] \dots\dots\dots(6)$$

This measure (equation 6) of pollution terms of trade indicates the ratio of the pollution content of 1 unit of exports relative to the pollution content of 1 unit of imports. A country gains environmentally from trade in relative terms whenever its imported goods have higher pollution content than its exported goods. When the pollution terms of trade are greater (smaller) than 100, then a particular country's exports contain more (less) pollution than it is receiving through imports. The expression of (6) provides the compositional effect. This indicator has been used to reflect the pollution haven effect.

The explanation of the pollution haven hypothesis will be stronger if the factor endowment hypothesis is discussed in this context, as it offers another view of the impact of international trade on the allocation of environmental burdens across countries.

Factor Endowment Hypothesis

The Heckscher-Ohlin-Vanek model, which focuses on the relationship between production factors and trade, predicts that a country exports services of the factors that are relatively abundant in the country and imports services of the factors that are relatively scarce in the country. To estimate the total labour and capital requirements in exports and imports, equation (2a) has been modified as shown in equations (7-10).

$$L_{\text{exp}} = LR_d Y_{x_{oecd}} \dots\dots\dots(7)$$

$$K_{\text{exp}} = KR_d Y_{x_{oecd}} \dots\dots\dots(8)$$

$$L_{\text{imp}} = LR_d Y_{m_{oecd}} \dots\dots\dots(9)$$

$$K_{\text{imp}} = KR_d Y_{m_{oecd}} \dots\dots\dots(10)$$

Where, L and K symbols indicate sectoral labour and capital coefficients, respectively.

The factor endowment hypothesis holds that a labour-rich country exports labour-intensive goods and imports capital-intensive goods. This can be indicated by the ratio of capital requirements of imports and exports, which will be greater than 1, but will be less than 1 for a capital-abundant country.

Foreign Direct Investment Model

Equation (2a) has been further modified (equation 11) to calculate the pollution content of FDI.

$$F_{pd\ fdi} = SR Y_{fdi\ (oecd)} \dots \dots \dots (11)$$

Where $Y_{fdi\ (oecd)}$ explains FDI from OECD countries.

The model has further investigated how far FDI has induced exports and, in turn, pollution. For that FDI has been treated as an input into the economic activity of Thailand. The pollution content of exports due to FDI has been derived as follows:

$$F_{pd\ (fdi)}^{exp} = S R^* Y_{x_{oecd}} \dots \dots \dots (4^*)$$

Where R^* denotes $(1 - A_d^*)^{-1}$ and A_d^* defines the input-output coefficient matrix, including FDI as an input.

The data sources used for the application of the model are: (a) input-output table of Thailand for the years 1980, 1990 and 2000 (NESDB, 1984, 1994 and 2004); (b) energy consumption data for Thailand for the years 1980, 1990 and 2000 (Department of Energy Development Programme); (c) data on trade with OECD countries for the years 1980, 1990 and 2000 (OECD, 1986; OECD, 1992; and OECD, 2002); (d) international financial statistics for exchange rates (IMF, various years); (e) labour and capital stock data at the sectoral level from the *Report of the Labour Force Survey, Whole Kingdom* and *Report of the Manufacturing Industry Survey, Whole Kingdom* (National Statistical Office of Thailand, various years) and *Capital Stock of Thailand* (NESDB, 2002); and (f) data on foreign direct investment from published and unpublished sources (Bank of Thailand, various years).

The Impact and the Implications of TRIPs in a Knowledge-based Global Economy: A Developing Country's Perspective

*Carsten Vogel**

ABSTRACT

This paper discusses, from a developing country's perspective, the impact and implications of the Agreement on Trade-Related Intellectual Property Rights of the World Trade Organization (WTO). It does so by putting them into the context of relevant trends of globalization and assessing the political and institutional setting within the WTO framework. The paper thereby provides comprehensive background information on trade-related aspects of intellectual property rights (TRIPs) and the resulting international intellectual property regime, including its characteristics, preconditions, the actors and interests involved, and it provides an institutional analysis. The main finding is that the constraints on intellectual property regulation in developing countries are twofold. First, the TRIPs Agreement has an unprecedented impact on national regulations by imposing global minimum standards for types of intellectual property protection, the scope and the duration of those regulations along with rules for enforcement. Second, the emergence of the TRIPs Agreement has made intellectual property protection an important issue in today's global production networks established by transnational corporations. Therefore, in the case of intellectual property protection, the continuous internationalization of production and the knowledge-based economy (as major trends in today's global

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(continued from page 47)

economy) has become the fundamental driver for increased attention to national regulation in developing countries owing to increased technological competition and investment in research and development. However, when analysing the emergence and impacts of the TRIPs Agreement, both economic and political integration appear to be deeply interlinked. Mounting exports and investment flows from the industrialized countries confronted their Governments with the demand for cross-border enforcement of intellectual property rights (IPRs). The weak and fragmented World Intellectual Property Organization system was thus bypassed by introducing the IPR issue into the talks under the General Agreement on Tariffs and Trade, which offered the best institutional platform to push intellectual property protection forward, because industrialized countries could offer rewards *quid pro quo* for the commitments made by developing countries. The specific characteristics of the established international intellectual property regime within the WTO framework made its global impact feasible, since WTO offers widespread membership and the option to enforce compliance through its Dispute Settlement Body. On the other hand, besides national intellectual property systems, the TRIPs Agreement also changed the global trade and investment environment fundamentally with regard to the strengthening of owner rights on inventions and innovation. As the outlined trend of internationalization of research and development indicates, the paper assumes that the TRIPs Agreement facilitates further fragmentation of production in technology-intensive sectors and hence offers further opportunities for potential host countries, because adjusted intellectual property systems and better prospects for enforcement may generally encourage transnational corporations to relocate the very intellectual property-sensitive parts of production. Throughout the paper basic theoretical concepts are discussed in order to clarify the actual developments, and illustrative examples are used, such as the internationalization of research and development and the unilateral and bilateral efforts of the United States for cross-border enforcement of IPRs.

1. INTRODUCTION

Since the Agreement on Trade-Related Intellectual Property Rights came into force in 1995, the protection of intellectual property has become an issue of specific attention from a developing country's perspective. Until then, national intellectual property regulation was often subject to strategic industrialization policies aimed at facilitating imitation, or it was of no concern at all. This situation has changed with the TRIPs Agreement.

The developed countries first pushed for strengthening IPRs in the Tokyo round of the General Agreement on Tariffs and Trade (GATT), because they increasingly perceived that enforcement was inadequate and obviously looked for another forum to solve the problem besides the World Intellectual Property Organization (WIPO). Industrialized countries wanted to find a solution, because strong domestic interests within the exporting industries evolved as did general concerns about the loss of research and development (R and D) investments due to imitation in developing countries. Governments faced a dilemma with regard to the traditionally national coverage of intellectual property regulation and the transnational reach of innovating industries. Consequently, they used the GATT platform to implement internationally enforceable rules on intellectual property protection and to offer concessions in other areas of the Uruguay round negotiations as *quid pro quo*. Nonetheless, by accepting the TRIPs provisions, developing countries made considerable commitments with regard to the cost of immediate implementation and potential transfer payments to intellectual property-holding firms abroad.

The major impact of the TRIPs Agreement is the harmonization of national intellectual property regulation with global “minimum standards in virtually all areas of intellectual property protection” (Maskus, 2000, p. 26) including rules for enforcement and administration in all WTO member countries. The institutional environment of GATT and the World Trade Organization (WTO) made this unprecedented intervention in national regulation feasible.

This paper interlinks the globalization process, particularly the internationalization of production and the emergence of a knowledge-based global economy, with the political dimensions of the TRIPs Agreement within the WTO framework. The next sections are organized as follows: section 2 outlines the background of IPRs and the debate, and discusses and subsequently illustrates the internationalization of production and the knowledge-based economy by focusing on the trend of the internationalization of R and D. Section 3 puts the TRIPs Agreement into its political-economic context. It analyses first the weaknesses of the WIPO system and the political economy of cross-border IPR enforcement; second, it points out the complex position of developing countries in the negotiations; and third, it assesses the main characteristics and elements of the new international intellectual property regime, which goes beyond the TRIPs Agreement. That regime is expanded through an increasing number of preferential bilateral and regional trade agreements.

2. INTELLECTUAL PROPERTY RIGHTS AND TRENDS IN THE GLOBAL ECONOMY

(a) *Regulation of intellectual property rights*

The term IPRs refers to the legal instrument for protecting the ownership of an immaterial good: creations of the mind resulting from invention and innovation.¹ An IPR, e.g., a patent, copyright or industrial design,² entitles the owner to capitalize exclusively on its commercial use for a certain period. The paper focuses on patents,³ which are subsequently also referred to as intellectual property. The reason is that patents are the most relevant type of intellectual property for the creation of technology.

As a static set of rules, IPRs “are just one of the pieces that form a national system of intellectual property protection.” (Primo Braga and others, 2000, p. 4). Naturally, it takes more than the sole legal status of IPRs to ensure that rights can be granted by the State. The lack of enforcement is often the most criticized feature of the system in developing countries. Especially in newly industrialized countries, the focus is on intellectual property protection, because the production and consumption of goods and services increasingly involves new technology, i.e., knowledge which can be commercially exploited. Maskus (2000, p. 3) identifies three key elements of the intellectual property system: “standards”, “limitations” and “enforcement”. Standards determine the scope of the IPR. Hence, limitations additionally restrict the extent of protection. They include the period of protection, compulsory licensing to ensure the use of certain technology and competition rules to contain monopolistic tendencies. Enforcement comprises all “administrative and judicial actions by public authorities to safeguard the rights granted” (Maskus, 2000, p. 3). For all WTO members, TRIPs includes these three key elements as obligations to implement.

Intellectual property regulation, including all components of the intellectual property system, is conventionally a concern of national policymaking. The Government

¹ Concerning the application of IPRs, Hoekman and Kostecki (2001, p. 276) emphasize the importance of innovation, because it is mostly related to the commercial and “costly” part of R and D, which turns the invention into a product.

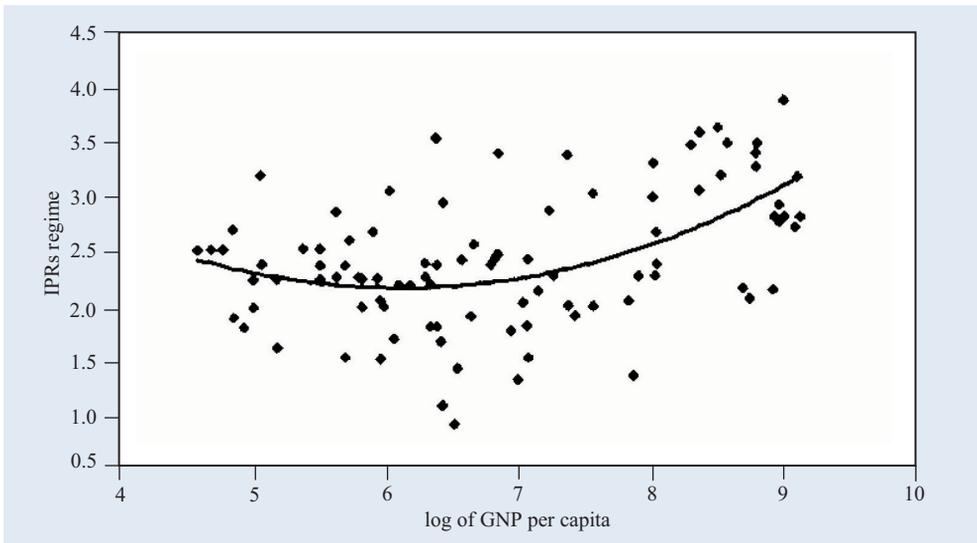
² According to a widely quoted categorization of IPRs in Primo Braga and others (2000, p. 4), patents are within industrial property, the first of four “types of IPR”, and can be found in both international treaties and in some national intellectual property provisions. They include utility models, geographical indications, industrial designs and trademarks. The second type, literary and artistic property, namely copyrights and neighbouring rights, protect the authors of printing, audio and video entertainment, software and broadcasting. The third type, trade secrets, refers to undisclosed business information. The fourth type refers to *sui generis* protection and includes plant breeders’ rights, database protection and integrated circuits as specific instruments of protection not covered by other types. All types of IPRs can be found in different agreements of the World Intellectual Property Organization and nearly all are included in TRIPs.

³ The use of the term intellectual property refers mainly to patents.

intervenes in the distribution of gains arising from inventions and R and D in order to avoid an assumed underinvestment in the “production of knowledge”, as argued by Arrow (1962, citing Primo Braga and Fink, 1999, p. 2). The “economic rationale” for policymakers to provide IPRs derives from the character of knowledge, because it is “non-rival in nature”, i.e., the marginal cost of its distribution is zero.

However, the concept of intellectual property protection has been contested, especially after the emergence of the TRIPs Agreement. While the proponents are worried about the absence of incentives for innovation, which can lead to welfare losses, the critics focus on the reduced resources for the public, i.e., higher consumer prices, which are comparable to a tax.⁴ Hoekman and Kostecki (2001, p. 277) note that each Government could choose its “optimal mix” between rent-granting and free access to knowledge for its own territory using IPRs. As Primo Braga and others (2000) show, the strength of intellectual property protection mainly correlated with the level economic development in the 1970s (figure 1).

Figure 1. Judging the strength of protection of intellectual property rights by the level of economic development



Source: Primo Braga and others (2000). *Intellectual Property Rights and Economic Development*, Discussion Paper No. 412 (Washington, D.C., World Bank).

⁴ With regard to developing countries, the United Kingdom-based Commission on Intellectual Property Rights (CIPR, 2003, p. 6) and Correa (2000) have a more critical view about Western standards of intellectual property protection and its global implementation through the TRIPs Agreement. Maskus (2000 and 2005) is the most prominent scholar among proponents of, broadly speaking, strengthened intellectual property protection.

However, this freedom of choice is restricted nowadays owing to the introduction of minimum standards through the TRIPs Agreement. Imposed norms through a multilateral regime, as discussed in the next chapter, constrain national policy options in intellectual property regulation. Consequently, the agreement has bolstered the debate over IPRs. There is a widely shared view among economists that a uniform application of TRIPs Agreement standards and their implementation is problematic as regards the level of economic development and institutional capacities.⁵

Therefore, while generally strengthened intellectual property systems in the newly industrialized countries (NICs) of Asia could enable further success in attracting foreign direct investment (FDI) and enhancing their own technological advance, in the case of the least developed countries (LDCs) these measures might be inappropriate, as a study of Hoekman and others (2004) indicates. According to the state of development, they suggest (see table 1) adjusted IPR strategies within a comprehensive policy package concerning international technology transfer (see next section).

Table 1. A “rule-of-thumb” typology and examples of international technology transfer policies in developing countries

	<i>Trade in goods</i>	<i>Foreign direct investment</i>	<i>Trade in knowledge (licensing)</i>	<i>Intellectual property rights</i>	<i>Temporary movement</i>	<i>General technology policies</i>
Low-income countries	Liberal access	Inward investment promotion	Improve information flows about public domain and mature technologies	Basic protection and minimum standards	Incentives for education abroad	Basic education; improve infrastructure; reduce entry barriers
Lower middle income countries	Liberal access	Inward investment promotion	Improve information; limited incentives for licensing	Wider scope of protection; employ flexibility	Incentives for education abroad and training-related movement	Research and development support policies; improve public-private collaboration
Upper middle income countries	Liberal access	No active policy	No active policy	Full TRIPs	Encourage two-way mobility	Research and development support policies

Source: Extracted from Bernhard M. Hoekman and others (2004). *Transfer of Technology to Developing Countries: Unilateral and Multilateral Policy Options*, Policy Research Working Paper No. 3332 (Washington, D.C., World Bank), p. 32.

⁵ See Hoekman and Kostecki, 2001; Primo Braga and others, 2000; Hoekman and others, 2004; CIPR, 2003; Correa, 2000.

(b) *Internationalization of production and knowledge-based economy*

Both intellectual property regulation in general and intellectual property protection in particular have become a matter of concern beyond national borders: for business and politics in industrialized countries and subsequently in developing countries. This paper argues that the emergence of the TRIPs Agreement and its implications for developing countries are strongly linked to globalization. At the same time, the TRIPs Agreement and its global impact are also a crucial part of globalization.

Globalization is a term of wide comprehension; although it is extensively used, it is also contested at the same time. The view taken in this paper distinguishes between economic and political integration in trade and finance as two major forces in the whole process of globalization. A general account of globalization found in the White Paper on Globalization and Poverty (2000) produced by the Government of the United Kingdom of Great Britain and Northern Ireland explains economic globalization and puts the political aspects of globalization loosely beside it:

In fact, globalization means the growing interdependence and interconnectedness of the modern world.... The increased ease of movement of goods, services, capital, people and information across national borders is rapidly creating a single global economy. The process is driven by technological advance and reductions in the cost of international transactions, which spread technology and ideas, raise the share of trade in world production, and increase the mobility of capital. It is also reflected in the diffusion of global norms and values, the spread of democracy and the proliferation of global agreements and treaties...(cited in Weiss, 2002, p. 140)

Although the definition gives a comprehensive account, it is important to emphasize that both integration processes are intertwined with each other in the context of the TRIPs Agreement. Today's state of economic globalization and foremost liberalization can be understood only with regard to the governing multilateral institutions in trade and finance and the involvement of national Governments (see Rodrik, 1999; Krasner, 2000). On the other hand, most of the debate on globalization focuses on the diminishing scope for national policymaking due to exogenous constraints and the emergence of transnational corporations (TNCs) as transnational actors (Strange, 2000; Frieden and Rogowski, 1996).

Today's economic globalization has introduced two trends, which are important in order to identify the implications of the TRIPs Agreement for national intellectual property protection in the context of economic development: the internationalization of production and the development of a global knowledge-based economy, which combined have led to the internationalization of R and D. All three trends are introduced in turn below.

(i) *Internationalization of production*

The above term describes the process of dispersion of production through arm's length trade, licensing⁶ and most importantly FDI by TNCs, which seek new markets, resources, lower production costs and efficiency (Campos and Kinoshita, 2003, pp. 5-6). As outlined, technology (most importantly, information and communications) and liberal trade and investment policies have helped to reduce transaction costs and thereby have facilitated outsourcing of parts of production by TNCs to developing countries. FDI, i.e., the establishment of an affiliate abroad and the related internalization of technology transfer, has become the most important channel of internationalization of production. In effect, the inflow of FDI has grown rapidly in the last two decades, especially in the ESCAP region. Rajan (2005, p. 5) points out that "FDI has been found the most stable source of external finance for developing countries in the Asian and Pacific region".

Rajan (2005, pp. 9-10) emphasizes that in developing countries the growth of the "old", trade-based type of "production fragmentation" in consumer goods industries, such as garments and footwear, is outpaced by the "new", investments-based type involving sectors such as "airliners, computers, semiconductors, automobiles and many other products". Thus, the share of production by TNC affiliates producing on a "hi-tech" level is rising in developing countries. This trend offers potential gains for host countries in terms of economic growth and technology spillovers. The role of TNCs as actors in and sources of global trade and investment cannot be overestimated, since they account for "around two-thirds of world trade for the latter half of the 1990s" (UNCTAD, 2002, p. 153).

(ii) *The knowledge-based economy*

The second characteristic of today's economic globalization highlights the increasing importance of knowledge in the economy and society: the so-called knowledge-based economy.⁷ The *World Development Report 1998/1999* (World Bank, (1998, pp. 6-8) argues that knowledge has become the crucial factor for development, as it has become for the global economy with its implications for R and D expenditure:

The creation of technical knowledge – as measured by patents issued, although not all technical knowledge patented – is expanding rapidly. [Within only four years, the number of patent applications worldwide increased from 1.4 million in 1989 to

6 Licensing is another important channel of technology transfer. With reference to international technology transfer (ITT), Hoekman and others (2004, p. 3) summarize: "A third major channel of ITT is direct trade in knowledge via technology licensing. This may occur within firms, among joint ventures, or between unrelated firms. Licensing and FDI are often substitutes. Which form is preferable to technology owners depends on many factors, including the strength of IPRs protection".

7 The term gained relevance through the OECD report entitled "The Knowledge-Based Economy" (Paris, OECD, 1996).

2 million in 1993. Continuous innovation, automation, and competition in the creation and use of knowledge have shortened product cycles in many industries. UNCTAD (2005, p. 99) summarizes the implications for developing countries: Technology is advancing faster than ever before. Developing countries that fail to build capabilities enabling them to participate in the evolving global networks of knowledge creation risk falling further behind in terms of competitiveness as well as economic and social development.

As OECD (2000, p. 27) states, innovation and technological change are the key drivers for economic growth. OECD (2000, p. 32) also sees evidence that “more than before, innovation is now at the core of economic activity”. The evolution of R and D expenditures over time support this view: total R and D spending worldwide increased from \$438 billion in 1991 to \$576 billion in 1996 to \$677 billion in 2002 (UNCTAD, 2005, p. 105). Private spending amounted to \$449.8 billion in 2002 (UNCTAD, 2005, p. 105), accounting for 66.5 per cent of worldwide R and D spending, and therefore it should be considered as an important source of national R and D activities (table 2). The share is constantly growing in most of the OECD countries (OECD, 2000, p. 28).

The “knowledge gap” (World Bank, 1998) or “technology gap” (UNCTAD, 2005) is still of concern for researchers, because the geographic concentration of R and D remains pronounced (table 2). In this regard, TNCs, mainly from the industrialized countries, can form the missing link for improved accession to the increasing global production and private financing of R and D, as argued below.

International technology transfer again gained attention among researchers and policymakers with introduction of the TRIPs Agreement, since the approach focuses on all relevant policies that enhance the ability of a developing country to absorb foreign technology, including intellectual property protection (see Hoekman and others, 2004; Primo Braga and Fink, 1999). In the post-TRIPs Agreement debate, studies focused on imitation as a channel of transfer, which nevertheless basically ceased to exist as a policy option with the full implementation of the TRIPs Agreement (see Davis, 2005, p. 7).

In the age of globalization, FDI, trade and licensing nowadays form legitimate and growing options for having a stake in the global network involving foreign technology. National policies that take a proactive approach may provide opportunities for countries to benefit from an integrated global economy. In contrast, a defensive approach to the new constraints in national intellectual property regulation may lead to losses of national welfare, for example, in terms of (potential) investments and constrained accession to foreign high-technology goods, such as pharmaceuticals. The sole implementation of the TRIPs Agreement without using “wiggle room” (Holmes, 2004, p. 27) and tailoring regulation to domestic conditions as well as the lack of adaptation to the new global standards and insufficient enforcement may have unfavourable effects.

Table 2. Home economies of the 700 largest research and development-spending firms of the world, 2003; and research and development spending, 2002
(Billions of United States dollars)

<i>Rank</i>	<i>Number of firms</i>	<i>Percentage of largest 700 research and development spenders</i>	<i>Economy</i>	<i>Total research and development</i>	<i>Business research and development</i>
1	296	42.3	United States	276.2	194.4
2	154	22.0	Japan	133.0	92.3
3	53	7.6	Germany	50.2	34.8
4	39	5.6	United Kingdom	29.3	19.6
5	35	5.0	France	32.5	20.6
6	20	2.9	Switzerland	n.a.	n.a.
7	15	2.1	Sweden	9.4	7.3
8	10	1.4	Republic of Korea	13.8	10.4
9	8	1.1	Denmark	n.a.	n.a.
10	8	1.1	Taiwan Province of China	6.5	4.0
...					
22	2	0.3	China	15.6	9.5
...					
28	1	0.1	Hong Kong, China	1.0	0.3
...					
	700	100.0	Total/ World	676.5	449.8

Source: Extracted from UNCTAD (2005). *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D* (New York and Geneva), pp. 105 and 121.

(iii) *Internationalization of R and D*

The *World Investment Report: Transnational Corporations and the Internationalization of R&D* (UNCTAD, 2005) investigates a relatively new development, which can be interpreted as a result of both of the previously outlined trends of economic globalization: the so-called internationalization of R and D. It highlights an outstanding new opportunity for developing countries, primarily NICs, to participate in the global creation of knowledge and technological progress. It can be interpreted as the final step of the internationalization and geographic fragmentation of production, because it is a very sensible part of economic activity with vital investments at stake involving highly skilled personnel. Furthermore, it emphasizes both the importance of TNCs as sources of foreign

capital and technology as well as connectors to the “global technology and innovation networks led by these firms” (UNCTAD, 2005, p. 99).

The report (UNCTAD, 2005, p. 99) explains that, in relation to the fast-proceeding offshoring of services in the past few years, R and D is evolving from the “least internationalized function[s] of TNCs” to the fastest fragmenting function, such as in the case of German TNCs, which invested more abroad in the 1990s than in the preceding 50 years (table 3).

Table 3. German research and development-related FDI abroad, 1995-2003

<i>Year</i>	<i>FDI stock in research and development foreign affiliates abroad (Millions of United States dollars)</i>	<i>Number of research and development foreign affiliates</i>	<i>Employment of research and development foreign affiliates (Thousands of United States dollars)</i>
1995	43.2	20	2
1996	83.8	25	2
1997	133.8	31	3
1998	199.6	55	5
1999	467.7	59	6
2000	647.7	89	9
2001	630.0	105	10
2002	934.3	73	11
2003	891.4	78	11

Source: UNCTAD (2005). *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D* (New York and Geneva), p. 124.

In general, R and D activities in developing countries emerge now from simple adaptation processes to research, whereas TNCs are seeking “access to foreign pools of research talents” (UNCTAD, 2005, p. 99). This global development is fastest in Asia (UNCTAD, 2005, p. 100). As Weiss (2002, p. 131) points out, Singapore was successful in adopting a proactive strategy, which combines tax incentives and direct grants for R and D with the “provision of a high technology infrastructure based on public sector research institutes and universities”. Nowadays, 50 per cent of Singapore’s R and D is conducted by foreign affiliates (UNCTAD, 2005, p. 125). Regarding the intellectual property system and the rule of law, Mr. Lee Kuan Yew, former Prime Minister of Singapore, emphasized the strategy of his country in an interview with a German news magazine,⁸ noting that Singapore offers an advanced legal system with effective courts and strong protection of intellectual property in order to attract investors from technology-sensitive firms, especially in the pharmaceutical industry.

⁸ “Es ist dumm, Angst zu haben”, *Der Spiegel*, No. 32, 2005, pp. 89-91.

UNCTAD (2005, pp. 99, 102) has emphasized that R and D can be found at the peak of the so-called pyramid of innovation. Thus, it embodies FDI with the most value added in terms of technological spillovers. However, it requires ambitious host-country features, among which “stable and efficient legal and governance systems” should be included (UNCTAD, 2005, p. 116). UNCTAD data (2005, p. 125) from 1993 to 2002 show that “R&D expenditure of foreign affiliates in host countries worldwide” has risen from \$29 billion or 10 per cent of global business R and D to \$67 billion, or 16 per cent. The outlined trend draws attention again to general reasoning on factors attracting FDI. Concerning intellectual property protection, UNCTAD (2005, p. 165) concludes:

The design of IPR regimes [national intellectual property systems] may play a less direct but nevertheless important role. For instance, providing effective means of IPR protection may act as a signaling device to international investors. Strengthening the regime may show that the country is willing to “play by the rules” and provide a hospitable investment climate.

3. THE EMERGENCE OF THE TRIPs AGREEMENT: TOWARDS A GLOBAL INTELLECTUAL PROPERTY REGIME

(a) The WIPO system and unilateral pressure: the emergence of cross-border intellectual property protection

This section takes a look at the historical preconditions of the TRIPs Agreement regime and outlines its weaknesses. It thereby stresses the political economy of cross-border intellectual property protection and the domestic interests involved, and it outlines the related unilateral and bilateral attempts by industrialized countries to enforce IPRs internationally.

When IPRs were included in the Uruguay round in 1986, intellectual property protection had already been of international concern for over 100 years. In the late nineteenth century, the newly industrialized countries in Europe and the United States had already been working for decades with national patent systems. At this time, the “ability to tailor the nature of their regimes [intellectual property systems] to their own circumstances was unconstrained” as the Commission on Intellectual Property Rights (2003, p.18) emphasizes. Owing to their territorial character, the recognition of IPRs of non-nationals, i.e., importers, became an issue with the increasing level of international trade, because intellectual property protection was mainly part of strategic discrimination and protectionism. When trade rose sharply because of the industrial revolution in Europe and the United States, the profits of the exporting industries, which had prosperous sales abroad due to their technological advances, were at stake.

Consequently, the first international agreements introduced national treatment as the first step to ensure the same rights for foreign and domestic right holders (Scotchmer, 2004, p. 419). The Paris Convention for the Protection of Industrial Property, from its adoption on 20 March 1883, covered patents and trademarks. The Berne Convention for the Protection of Literary and Artistic Works, from its adoption on 9 September 1886, dealt with copyrights and neighbouring rights. Their attempts to harmonize and to constrain national regulations were rather limited (Scotchmer, 2004, p. 419). In addition, their membership did not exceed 20 members until the 1940s (Primo Braga and others, 2000, p. 11).

Since 1974, WIPO⁹ administered the growing number of multilateral conventions and treaties. According to the changing circumstances of international trade and investment, WIPO provided a strengthened forum for the evolving system, including step-by-step new IPRs or changed provisions resulting from new agreements. The membership of the revised Paris and Berne conventions grew to over 120 members up to the 1980s (Primo Braga and others, 2000, p. 11). However, the system still had shortcomings compared with the TRIPs Agreement: first, each country had the choice of which agreement of the WIPO system to join; second, for the members, the length of patent protection and the exclusion of certain fields of technology were discretionary; and third, institutional enforcement mechanisms in WIPO were weak.

In the 1980s, industrialized countries started to perceive that “inadequate enforcement of IPRs in importing countries” was reducing “the competitive advantage of their exporting firms” (Hoekman and Kostecki, 2001, p. 277). As previously outlined, global economic integration in terms of rising trade and investment along with the growing importance of technology-intensive goods and innovation are the drivers for the strengthening of cross-border intellectual property protection because of the objections of the technology-exporting industries, mainly in industrialized economies, against the existing international system. Primo Braga (1996, p. 359) noted a “broad consensus” in the literature that “the economic interests involved are significant”.

It is argued that the owners of IPRs in the developed countries, such as pharmaceutical companies or the software industry, pushed their political interest domestically, because they “wished to exploit their technical advantages on an international scale and also to limit expropriation costs from potential rivals” (Maskus, 2000, pp. 83, 78-79; Correa, 2000, p. 5). As previously mentioned, national intellectual property regulation is theoretically created to ensure innovation by allocating the privilege of monopoly to the producers of knowledge at the expense of the consumers. Two rather symmetrical interests can also be found in the domestic political arena regarding cross-border intellectual

⁹ Founded in 1970, WIPO became a specialized United Nations agency in 1974 and it is a successor of the United International Bureaux for the Protection of Intellectual Property, which was the international body for overseeing the above-mentioned treaties on IPRs from the nineteenth century.

property protection: on the one hand, exporting industries of medium- and high-technology goods want to capture profit abroad, and on the other, consumers are interested in fair competition in the domestic market between foreign and domestic technology for high quality and low prices (see Scotchmer, 2004, p. 415). With a focus on the innovating export industry and following the outlined economic rationale, it appears that Governments of industrialized countries have to “transnationalize” intellectual property protection at the expense of developing countries in order to secure the domestic production of knowledge. Therefore, the traditional scope of intellectual property regulation within national borders poses a dilemma to industrialized countries.

As shown, complementary to the influence of globalization on domestic policy choices, the domestic arena of policymaking shapes the negotiating position of industrialized countries and their unilateral and bilateral diplomacy with regard to intellectual property protection. While some texts tend to stress the direct influence of interest groups on the TRIPs negotiation outcome, i.e., that captured by business interests. With regard to the dilemma of governing IPRs, Scotchmer (2004, p. 416) offers an explanation from a game-theoretical perspective, which emphasizes that cross-border IPR enforcement is the prevailing national interest:

Capture is undoubtedly an important phenomenon, but I argue that intellectual property policies can become overprotective even if trade negotiators are equally concerned with all domestic interests, those of both consumers and producers. This is because intellectual property is a tool by which cross-border externalities can be recaptured by the innovating country.

The Government of the United States, the most prominent and activist among the industrialized countries (Hoekman and Kostecki, 2001, p. 277), already had unilateral instruments¹⁰ in place since the 1970s to force its trade partners to recognize its standards of intellectual property protection, among which were import restrictions and other sanctions against foreign Governments by the Office of the United States Trade Representative (USTR). Among the targets of unilateral actions were Argentina, Brazil, China, the Republic of Korea, Taiwan Province of China and Thailand (Maskus, 2000, p. 4). So-called unfair practices were filed by the USTR, and identified “prior” targets were informed of deadlines for the removal of those practices. For instance, tariffs on a strategic selection of imported goods would be imposed if there was no response from the targeted country. The application use was so widespread that Canada, the European Community and Brazil even filed complaints under the GATT dispute settlement mechanism concerning the

¹⁰ First, Section 337 of the 1930 United States Tariff Act was enacted by Congress to constrain imports, if necessary; second, Section 301 of the 1974 Trade Act was targeted at foreign trade partners, as amended by the 1988 Omnibus Trade and Competitiveness Act. Special 301 was dedicated to intellectual property cases. It is widely acknowledged that those laws can be ascribed to interest groups lobbying in Congress (see Hoekman and Kostecki, 2001, pp. 277-278).

intellectual property-related sanctions of the United States (Hoekman and Kostecki, 2001, p. 279).

A second strategy was used by both the European Union and the United States: new intellectual property laws, such as the 1996 European Union Directive on Databases, included a condition of protection for non-nationals, under which the same law would have to apply in the exporting country (Scotchmer, 2004, p. 419). A third approach is to negotiate bilateral or regional intellectual property standards mostly in relation to free trade agreements (FTAs), as outlined in the next section.

(b) The formation and implementation of the TRIPs Agreement: commitments by the developing countries

IPRs were pushed on to the GATT agenda in the 1970s. Provisions on counterfeiting were subsequently adopted at the Tokyo round. In 1986, the Punta del Este Declaration acknowledged the need to clarify the Tokyo provisions (ICTSD and UNCTAD, 2003, p. 44). In 1995, the TRIPs Agreement together with the WTO framework came into force and established an unprecedented international regime on IPRs, because it includes “minimum standards in virtually all areas of intellectual property protection” (Maskus, 2000, p. 26), as well as directions for administration and enforcement for all WTO members.

In recognition of the shortcomings of the WIPO system, Hoekman and Kostecki (2001, p. 282) observed: “A major attraction of the GATT was that it had an enforcement mechanism”. Besides the previously mentioned dispute settlement mechanism for enforcement, GATT as a multilateral forum for trade negotiations, offered the industrialized countries another crucial characteristic to foster the global strengthening of IPRs: the opportunity to offer incentives in other areas of the trade negotiations in return for the commitments made by the developing countries. In addition, GATT, and subsequently WTO, also had been the best vehicle for establishing a truly global intellectual property regime because of its ever-growing membership and the equally binding obligations of the TRIPs Agreement for all members.¹¹

The *quid pro quo* principle of trade negotiations thus offers a basis for why the developing countries accepted such an enormous shift to a new regime, which included all IPRs of WIPO, added new *sui generis* rights and imposed rules of administration and enforcement. A report of the International Centre for Trade and Sustainable Development (ICTSD) and UNCTAD (2003, p. 44) highlights the contradiction: in 1989, when resistance to a substantial agreement on IPRs was dropped, some developing countries had just enabled reforms of their patent systems to facilitate imitation.

¹¹ Except for the time of implementation: industrialized countries had 1 year, the developing countries and economies in transition had 5 years, and the least developed countries had 11 years. Formally, full implementation of the TRIPs Agreement had to be completed by 2005 at the latest.

The trade-off between different parts of the Uruguay Round “package deal” made the TRIPs Agreement possible. Developing countries hoped that the whole package “would outweigh the economic and social costs” (ICTSD and UNCTAD, 2003, p. 44). Besides the removal of some of protectionist policies, such as in agriculture, substantial commitments were made by industrialized countries concerning the phase-out of the Multifibre Arrangement and the ban on voluntary export restraints. Nevertheless, the developing countries feared also that a refusal might lead to “unilateral arm-twisting” by the United States and the European Union (Hoekman and Kostecki, 2001, p. 280), as had already been experienced by some countries previously.

Some argue that the commitments of developing countries to reform their intellectual property system saw hardly any compensation (Correa, 2000, p. 3; CIPR, 2003, p. 8). However, ICTSD and UNCTAD (2003, p. 45) noted that they still achieved compromises in the TRIPs Agreement extending the transition periods, the scope for national interpretation and a number of exclusions disliked by some TNCs and interest groups. Besides, domestic business interests existed also in oppositional countries, which endorsed the steps forward, especially those in emerging economies that depended on FDI or licensing for technology (Hoekman and Kostecki, 2001, p. 280).

Nonetheless, the number of trade and patent applications indicates where international intellectual property-related payments go: Correa (2000, p. 5) for example, refers to patent statistics in the United States, whereas in the period between 1977 and 1996 only 10 industrialized countries accounted for 95 per cent of the applications, but developing countries accounted for less than 2 per cent of them. Export numbers point to the same situation: the so-called Asian Tigers and Latin American countries together accounted for 11 per cent of medium- and high-technology goods exported to the OECD countries compared with 50.6 per cent of the countries in the Group of Seven (Correa, 2000, p. 5). Maskus (2005, p. 45) stated: “The United States remained, by far, the largest recipient of such fees [related to licensing of patents, copyrights, etc.], earning a net \$20.7 billion in 1995”.

(c) TRIPs Agreement as an international regime and its global impact

Theories of international relations offer useful insights in understanding the nature of the new international intellectual property system and pointing out the impact of the TRIPs Agreement. As a multilateral agreement within the WTO context, the TRIPs Agreement established a new regime for intellectual property protection. The term “regime” refers to a theoretical concept first coined by Krasner (1983, p. 2), who identified international regimes as “sets of implicit or explicit principles, norms, rules, and decision making procedures around which actors’ expectations converge in a given area of international relations”. Krasner (1983, pp. 4-5) illustrated his theory with reference to GATT. While GATT principles are based on liberal theoretical foundations, i.e., free trade

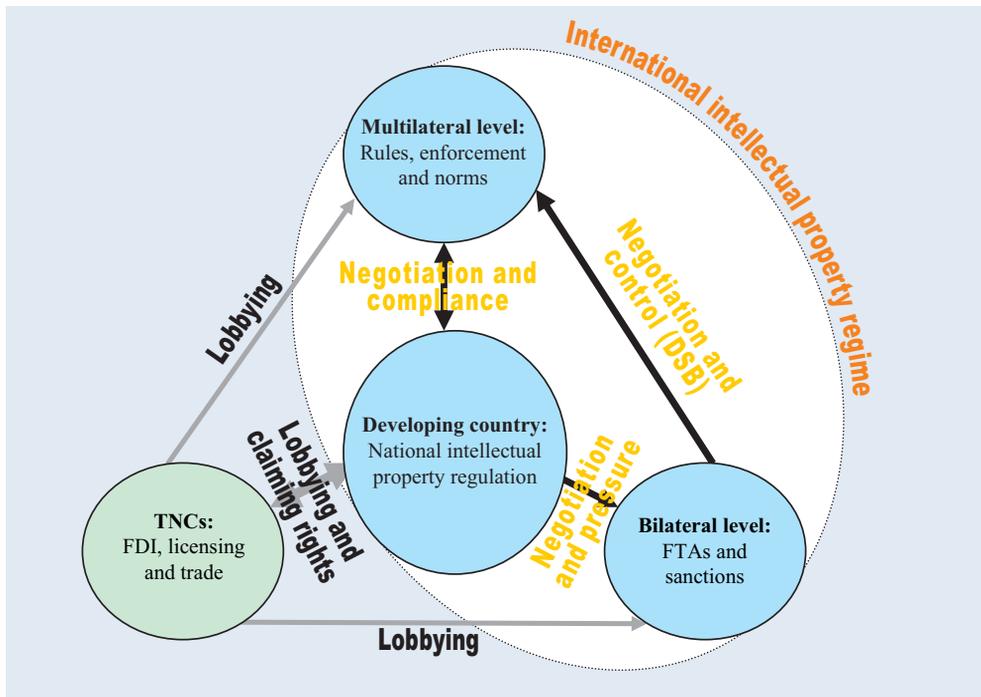
as the *raison d'être*, their norms reflect standards of behaviour for the cooperating parties, such as reciprocity and national treatment. The rules work basically as norms on a less general level; sometimes they mediate between conflicting principles and norms.¹²

The TRIPs Agreement represents one part of the trade regime established by WTO. Insufficient intellectual property protection was implicitly redefined as protectionist behaviour, therefore conflicting with the free-trade principle of GATT/WTO. However, unlike the provisions on tariff and non-tariff barriers, the agreement establishes rules directly governing national regulations on IPRs by specifying the rights, the duration and the standards for enforcement and administration. The underlying norm is national treatment, which was already included in the WIPO system. Within WTO, its provisions have supranational effect, which means that, by signing and ratifying the agreement, a Member State permits WTO and other members to control its compliance with the TRIPs Agreement and permits the Dispute Settlement Body to impose sanctions in cases of non-compliance.

Hoekman and Kostecki (2001, p. 274) characterized the TRIPs Agreement as “unique in the WTO context”, because “it imposes obligations upon Governments to adopt a set of substantive rules in an area that traditionally has been regarded to be in the purview of domestic regulation”. Maskus (2000, p. 2) came to a similar conclusion about the significance of the TRIPs Agreement: “It is the first multilateral trade accord that aims at achieving partial harmonization in an extensive area of business regulation”. As regards its general implications, both texts share the view that the TRIPs Agreement forms the “vanguard of efforts” (Maskus, 2000, p. 2) to include more regulatory policies in the WTO context, establishing more “‘behind the border’ regulatory regimes” (Hoekman and Kostecki, 2001, p. 274). Other agreements of the Uruguay round besides the TRIPs Agreement also contain some provisions with a direct impact on parts of national regulations, most prominently the General Agreement on Trade in Services (GATS) and the Agreement on Trade-related Investment Measures (TRIMs Agreement), as Holmes (2004) elaborated.

The nature or major characteristic and the impact of the agreement can therefore be summarized as “harmonization of national intellectual property regulation”, because the TRIPs Agreement (and similar parts of the TRIMs Agreement and GATS) implicitly considers harmonization as a norm for the WTO agenda. In effect, national intellectual property systems had to be adapted to the specific provisions. Correspondingly, the use of bilateral pressure and FTAs is a part of the international IPRs regime, whereas industrialized countries use their economic and political power (and bargaining power) to shape the system of norms and rules according to their domestic demand (figure 2).

¹² This would be the case for the rule on special and differential treatment, which allowed protectionism depending on the country's status as an LDC (Krasner, 1983, p. 4).

Figure 2. Actors and modes of interaction in the TRIPs Agreement regime

Source: Carsten Vogel.

General judgements on this development within the WTO framework are mixed. For example, Guy de Jonquières (1998, cited in Holmes, 2004, p. 2) of the *Financial Times* argues: “As liberalization extends deeper into countries’ domestic economies, the opening of markets increasingly requires global disciplines on national regulatory policies”. The economist Rodrik (1999, p. 148) draws a different conclusion and criticizes specifically the TRIPs and TRIMs agreements as “cases of ‘forced’ harmonization”, because they unnecessarily constrain policy choices in participating countries. While Rodrik (1999, pp. 147-148) generally embraces better regulatory standards serving transparency, in his view both agreements fail to present a solution for developing countries, which would either improve economic performance or exhibit democratic legitimacy by avoiding discrimination of social groups.

As for the case of bilateral pressure by industrializing countries, Rodrik’s argument is strengthened, because the respective FTAs evidently represent specific interests in IPR enforcement rather than good solutions for the trade partners. The United States, most prominently among other industrialized countries, uses FTAs as another channel of

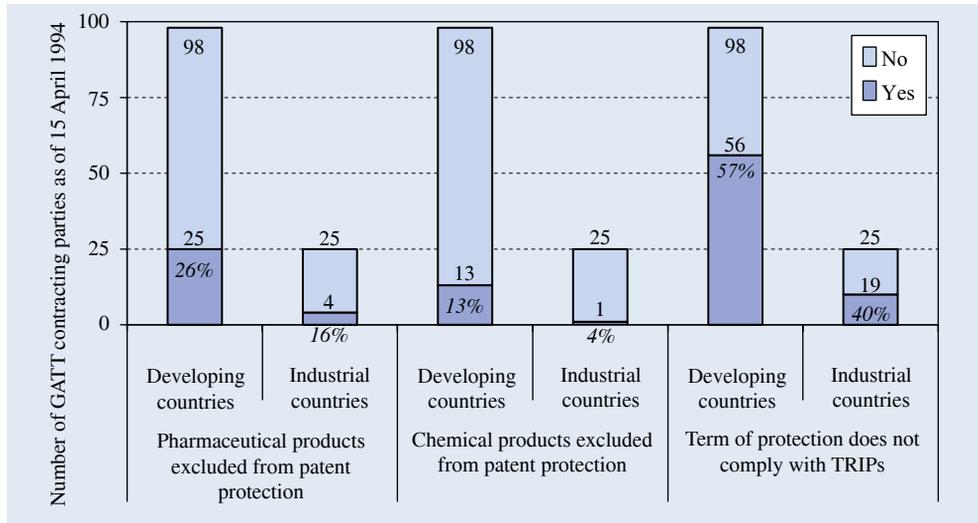
influence to expand national intellectual property regulation of trading partners beyond the provisions of the TRIPs Agreement. The World Bank (2005, p. 1) reports that the United States trade diplomacy has undergone a “considerable shift” by introducing intellectual property provisions as a “central element” into regional and bilateral FTAs. Besides the general trend towards bilateral and regional FTAs, the strategy is to enforce and even extend *tête-à-tête* what had been achieved in WTO since 1995. As in the GATT negotiations, the demand for stronger intellectual property protection and enforcement is combined with incentives of preferential access to an attractive trade partner.

In the United States, the domestically perceived decline of competitiveness has led to aggressive ways to secure the technological margin in the global economy. The objective is to achieve protection that “[...] reflects a standard of protection similar to that found in the United States law”. (USTR, 2002, cited in World Bank, 2005, p. 1) Signatories of such new FTAs have been Australia, the Hashemite Kingdom of Jordan, Singapore and Viet Nam, among others (with different provisions on intellectual property protection), using the *quid pro quo* approach of trade agreements for their own advantage. The World Bank (2005, pp. 2-3) identifies some common elements in the provisions of respective FTAs, which, for instance, affect exemptions of patent protection,¹³ constrain compulsory licensing of pharmaceutical patents, or special protection for pharmaceutical test data. All three reflect the existing but declining comparative advantage of the United States pharmaceutical and medicine industry (Maskus, 2000, p. 78).

Both the TRIPs Agreement on a global level and FTAs in specific countries achieved harmonization. Intellectual property systems in developing countries have undergone considerable changes since 1995. Primo Braga (1996, p. 356) points out that a look at some basic intellectual property law provisions shows that the “agreement will require significant reforms in... legal regimes” concerning the protection in certain sectors as well as protection periods (figure 3).

The respective institutional capacity for the implementation of the TRIPs Agreement has always been a concern. It is argued that judicial systems are already overstretched (Primo Braga, 1996, p. 358). Numbers estimated by the World Bank and UNCTAD show that setup costs can reach millions of dollars, and annual costs such as in Bangladesh can exceed \$1 million each year (World Bank, 1999; UNCTAD, 1996, cited in ICTSD and UNCTAD 2003, p. 50). However, a look at what Holmes (2004, p. 27) calls “wobble room” emphasizes the options that States have for implementation. For instance, the breadth of a patent can be defined according to its own requirements, and approval for patents from other countries can be denied if they are perceived as invalid (Holmes, 2004, p. 27). Furthermore, strategic choices for national intellectual property systems are left, as regards FTA negotiations, with industrialized countries as well as for further patent

¹³ No exemption of plants and animals from patentability as in the TRIPs Agreement, for example.

Figure 3. Patent protection, 1994

Source: Recreated according to Carlos A. Primo Braga (1996). "Trade-related intellectual property issues: the Uruguay round agreement and its economic implications", in Will Martin and L. Winters, eds., *The Uruguay Round and the Developing Countries* (Cambridge, Cambridge University Press), p. 357.

harmonization in relation to the Patent Cooperation Treaty of WIPO¹⁴ or the draft substantive patent law treaty. Nonetheless, the process of further, voluntary patent harmonization has gained momentum, especially in the last few years, as the patent statistics of WIPO show: from 40,000 applications in 1995 to more than 120,000 in 2004 (2005, p. 3).

4. CONCLUDING REMARKS

From a developing country's perspective, implementation of the TRIPs Agreement has imposed costs on a large scale, but not just in terms of its immediate implementation and enforcement capacities. The agreement also adjusts continuous transfer payments directly and indirectly in terms of license fees and prohibiting imitation for industrial development and for producing cheap consumer goods. However, the impact of the TRIPs Agreement goes further, as globalization generally constrains domestic policy choices for economic policy, the TRIPs Agreement defines the scope and types of IPRs and dictates the

¹⁴ The treaty lowers considerably the transaction costs for patent protection in different regulatory environments, because the treaty facilitates protection in multiple member countries with one application (Primo Braga, 1996, p. 360; Maskus, 2000, p. 67).

rules for enforcement and administration in national intellectual property systems. In 2005, major changes in intellectual property systems in developing countries were mostly finished, but the question whether or not the enforcement can be managed is left open.

Analysis of the preconditions and the characteristics of the international intellectual property regime (consisting of the TRIPs Agreement in the WTO framework and its parallel unilateral and bilateral attempts by industrialized countries) elaborates how and why this unprecedented harmonization effort by the industrialized countries was made feasible. Discussion of the economic rationale and the political economy of intellectual property protection made clear that industrialized countries faced a dilemma, as intellectual property regulation coverage was traditionally within national borders but the innovating industries increasingly exported and invested abroad. Owing to the weaknesses of the WIPO system, GATT/WTO offered the best institutional environment for cross-border enforcement of IPRs. The *quid pro quo* character of trade negotiations along with the mixed positions led to a decline in resistance against such a far-reaching agreement among the developing countries.

On the other hand, the WTO framework has been moved towards European Union-style “deep integration” through the adjustment of national regulations to common standards, most importantly with the TRIPs Agreement (see Holmes, 2004, pp. 6-7). Industrialized countries still seek to push the achieved harmonization beyond the provisions of the TRIPs Agreement in order to protect their domestic intellectual property-related interests. Overall, through the TRIPs Agreement and secondary attempts, industrialized countries were able to “transnationalize” their concept of intellectual property protection and their high standards of protection according to their state of industrial development rather than that of developing countries.

The emergence of the international intellectual property regime also comprises implications for policymakers in developing countries that go beyond the commitment to implement an international agreement. It means that TNCs, the main actors in the global production network and innovators in the knowledge-based economy, generally prefer higher standards of intellectual property protection with regard to the relocation of intellectual property-sensitive and technology-intensive parts of production. For that reason, ever-growing investments in R and D and shorter product cycles for staying on the competitive edge have increased the willingness of TNCs to reap the rewards for technological advance. The internationalization of R and D shows that TNCs are increasingly willing to relocate intellectual property-sensitive and vital parts of production to developing countries. The TRIPs Agreement might have paved the way by ensuring respective protection standards; however, a comprehensive strategy for economic development that integrates intellectual property regulation in a package of policies, including education and general technology policies as well as proactive policies towards FDI and trade, remains essential.

Structurally, developing countries played a passive role in both economic integration, driven mainly by TNCs of industrialized countries, and the parallel political integration in the context of GATT/WTO. Nevertheless, as the trend of internationalization of R and D illustrates, today's global production networks offer an opportunity to benefit from continuous production fragmentation as well as to participate even in the "production of knowledge" in order to climb the technology ladder. Furthermore, so-called wiggle room is still left in the provisions of the TRIPs Agreement in order to adjust the national intellectual property system to the individual situation, and States may choose whether to finalize and ratify preferential trading arrangements which contain WTO plus intellectual property provisions.

REFERENCES

- Campos, Nauro F. and Y. Kinoshita (2003). *Why Does FDI Goes Where It Goes: New Evidence from the Transition Economies*, IMF Working Paper No. 03/228 (Washington, D.C., IMF).
- Commission on Intellectual Property Rights (CIPR) (2003). *Integrating Intellectual Property Rights and Development Policy* (London, CIPR).
- Correa, Carlos M. (2000). *Intellectual Property Rights, the WTO and Developing Countries: The TRIPS Agreement and Policy Options* (London, New York, Zed Books).
- Davis, Kevin E. (2005). "Regulation of technology transfer to developing countries: the relevance of institutional capacity", *Law & Policy*, vol. 27, No. 1, pp. 6-32.
- Frieden, Jeffry A. and R. Rogowski (1996). "The impact of the international economy on national policies: an analytical overview", in Helen V. Milner and R. Keohane, eds., *Internationalization and Domestic Politics* (Cambridge, Cambridge University Press), pp. 25-47.
- Hoekman, Bernard M. and M. Kostecki (2001). *The Political Economy of the World Trading System: WTO and Beyond* (Oxford, Oxford University Press).
- Hoekman, Bernhard M., K. Maskus and K. Saggi (2004). *Transfer of Technology to Developing Countries: Unilateral and Multilateral Policy Options*, Policy Research Working Paper No. 3332 (Washington, D.C., World Bank).
- Holmes, Peter (2004). *The WTO and Domestic Regulation*, Working Paper No. 78 (Manchester, University of Manchester).
- International Centre for Trade and Sustainable Development (ICTSD) and United Nations Conference for Trade and Development (UNCTAD) (2003). *Intellectual Property Rights, Implications for Development* (Geneva).
- Krasner, Stephen D. (1983). "Structural causes and regime consequences: regimes as intervening variables", in Stephen D. Krasner, ed., *International Regimes* (Ithaca, NY, Cornell University Press), pp. 1-21.
- Krasner, Stephen D. (2000). "State power and the structure of international trade", in Jeffry A. Frieden and D. Lake, eds., *International Political Economy: Perspectives on Global Power and Wealth* (London and New York, Routledge), pp. 19-36.
- Maskus, Keith E. (2000). *Intellectual Property Rights in the Global Economy* (Washington, D.C., Institute for International Economics).
- Maskus, Keith E. (2005). "The role of intellectual property rights in encouraging foreign direct investment and technology transfer", in Keith E. Maskus and C. Fink, eds., *Intellectual Property and Development* (New York and Washington, D.C., World Bank and Oxford University Press), pp. 41-73.

- Organisation for Economic Co-operation and Development (OECD) (1996). *The Knowledge-Based Economy* (OECD/GD(96)102) (Paris).
- _____ (2000). *A New Economy? The Changing Role of Innovation and Information Technology in Growth* (Paris).
- Primo Braga, Carlos A. (1996). "Trade-related intellectual property issues: the Uruguay round agreement and its economic implications", in Will Martin and L. Winters, eds., *The Uruguay Round and the Developing Countries* (Cambridge, Cambridge University Press), pp. 341-379.
- Primo Braga, Carlos A. and C. Fink (1999). *How Stronger Protection of Intellectual Property Rights Affects International Trade Flows*, Policy Research Working Paper No. 2051 (Washington, D.C., World Bank).
- Primo Braga, Carlos A., C. Fink and C. Sepulveda (2000). *Intellectual Property Rights and Economic Development*, Discussion Paper No. 412 (Washington, D.C., World Bank).
- Rajan, Ramkishan S. (2005). "Foreign direct investment and the internationalization of production in the Asia-Pacific region: issues and policy conundrums", *Asia-Pacific Trade and Investment Review*, vol. 1, No. 1 (ST/ESCAP/2362) (Bangkok, ESCAP), pp. 3-26.
- Rodrik, Dani (1999). *The New Global Economy and the Developing Countries: Making Openness Work*, Policy Essay No. 24 (Washington, D.C., Overseas Development Council).
- Scotchmer, Suzanne (2004). "The political economy of intellectual property treaties", *The Journal of Law, Economics, and Organization*, vol. 20, No. 2, pp. 415-437.
- Strange, Susan (2000). "States, firms, and diplomacy", in Jeffrey A. Frieden and D. Lake, eds., *International Political Economy: Perspectives on Global Power and Wealth* (London and New York, Routledge), pp. 60-67.
- United Nations Conference of Trade and Development (UNCTAD) (2002). *World Investment Report 2002: Transnational Corporations and Export Competitiveness* (New York and Geneva).
- _____ (2005). *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D* (New York and Geneva).
- Weiss, John (2002). *Industrialization and Globalization: Theory and Evidence from Developing Countries* (London and New York, Routledge).
- World Bank (1998). *World Development Report 1998/99: Knowledge for Development* (Washington, D.C.).
- _____ (2005). *Tightening TRIPS: Intellectual Property Provisions of Recent US Free Trade Agreements*, Trade Note No. 20 (Washington, D.C.).
- World Intellectual Property Organization (WIPO) (2005). *PCT Statistical Indicators Report: Annual Statistics 1978-2004* (Geneva).

Agricultural Trade Liberalization: Time to Close Windows of Exception

*Mia Mikic**

ABSTRACT

Agriculture is the economic activity that still provides a livelihood for the majority of people, especially the poor. Every effort thus needs to be made towards making this sector more productive and able to sustain a better quality of life for those who remain dependent on agriculture as a livelihood while also indirectly contributing to improved welfare among the remainder of the population. This understanding has not always been the driving force behind policymaking. It took the Uruguay Round to start mainstreaming agricultural trade into the multilateral trading system under the World Trade Organization in 1995. Although a latecomer, agriculture is now at centre stage of the Doha Development Agenda negotiations and, in the view of many, is holding the Doha Round captive as it prevents agreements in other areas of negotiations until members concur on agricultural trade liberalization.

Meanwhile, despite Uruguay round liberalization, agriculture remains the most distorted sector due to the heavy use of trade barriers and support policies (for both domestic production and exports). Most nations still seek “windows of exception” for

(continued on page 72)

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(continued from page 71)

their agricultural sector, be it for the use of trade barriers or support policies. Since all such instruments distort the relative prices of agricultural products vis-à-vis other products, they affect every country's overall economy and its sectors differently, depending on production and consumption patterns. However, multilateral negotiations so far have focused considerably more on one distorting instrument, export subsidies, thus resulting in much less progress in freeing trade in agriculture and removing other support for domestic agricultural production. This paper argues that this focus might have been misdirected, given the available evidence of sources of welfare effects in agricultural trade liberalization efforts. It is time to start closing windows of exception for some and start opening windows of opportunity for all.

Irrespective of how (and when) the Doha Round will close, other important aspects of trade liberalization in agriculture are explored in this paper. One aspect is a process of increased reliance on less transparent instruments of protection. It appears that trade in agriculture follows the same trade path as that followed with industrial goods during the General Agreement on Tariffs and Trade (GATT) era; with a reduction in import tariffs and quotas, there was a clear increase in the use of non-tariff and non-border barriers (such as quality standards, safety standards and rules of origin). This paper comments on some instruments that have the potential to be used for non-tariff protection, i.e., geographical indications and food safety standards. While these have already been used extensively by some trading nations, many others (particularly developing countries) have failed to see how they could significantly contribute to development. This, however, does not in general apply to the use of food and agricultural product safety standards. It is true that these can be used as (effective) trade barriers. However, with some proactive strategic thinking, these standards could be transformed into incentives for economy-wide positive changes in the production of food. Coupled with the adaptation of modernized regulatory systems, this would become a driver of increase competitiveness in both domestic and export markets.

Another aspect of agricultural trade liberalization is preferential liberalization through bilateral or regional trade agreements. The Asian and Pacific region is a fertile breeding ground for new agreements of this type, with almost 100 of them now in force or being negotiated that include at least one member of ESCAP. ESCAP has developed a database for tracking and (ultimately) assessing the performance of these preferential trade agreements. It can be used in gaining a better understanding of the treatment of any particular sector, including agriculture, in the preferential agreements as well as the contribution of the design of such agreements to their performance. The database is also considered helpful to policymakers in their management of multilateral, preferential and autonomous liberalization.

1. INTRODUCTION¹

Agriculture is the economic activity that still provides a livelihood for the majority of people, especially the poor. Every effort thus needs to be made towards making this sector more productive and able to sustain a better quality of life for the people working in it as well as indirectly contributing to improved welfare among the remainder of the population. This understanding has not always been accepted. During a major part of the twentieth century, in many developing countries, it was strongly held that agriculture and modern development were mutually exclusive and policy attention was given to industrialization. This extended to a diminishing contribution of trade in agricultural products to development; therefore, developing countries did not demand that agricultural products be included in the multilateral trading system during the General Agreement on Tariffs and Trade (GATT) era.

At the same time, in many developed countries, the agricultural sector was already the smallest in terms of GDP and employment generation. In most European countries, what was left of the agricultural sector was in need of special attention by protectionist trade policies and domestic support. Starting with the political reasons for reconstructing long-term peace in Europe after the Second World War, “meddling” in agricultural production and trade continued for such reasons, as providing food security, protecting the farming community from natural and man-made shocks, preserving “rural life”, protecting the environment, or simply owing to the pressure of strong farmers’ lobbies. Ultimately, agriculture became the most distorted sector, hurting the poor who depend on agricultural production, mostly in developing countries.

After the Uruguay Round, agriculture made a comeback in development strategies. It was “mainstreamed” into the multilateral trading system under the World Trade Organization (WTO) through implementation of the Agreement on Agriculture (AoA) of the Uruguay Round for developed country members by the year 2000, and for developing members by 2005. AoA required members to translate all existing border measures other than customary customs duties (annex 5, paragraph 6) on agricultural products into so-called equivalent tariffs (a process known as “tariffication”). The idea behind this was to introduce the same measurement standard for the level of protection that prevailed in agricultural trade, this standard being an equivalent tariff. By binding the equivalent tariffs, benchmarks were introduced against which all members would have been assessed and, in relation to which, further liberalization following a predetermined timetable would have been undertaken.

¹ “Issues of Interest in WTO for Countries with Economies in Transition: Doha Development Agenda” was recently published in this *Review* (vol. 1, No. 2, November 2005). It covers extensively issues of agricultural trade negotiations under the Doha Development Agenda, particularly those relevant to ESCAP members and associate members. The present paper makes use of that text but does not repeat its content unless doing so cannot be avoided.

In the implementation of this agreement, members managed to bind their tariffs at very high levels, known as “dirty tariffication”, making further liberalization efforts more difficult, as seen so far during the current round of negotiations (see table 1). To achieve any actual liberalization, cuts in bound rates must be deep; in fact, they must be much deeper than most members are ready to accept.

Table 1. Comparison of bound and applied tariffs: import-weighted average agricultural tariff, by region, 2001 – ad valorem equivalent in per cent

<i>Economies</i>	<i>Bound tariff</i>	<i>Most-favoured-nation applied tariff</i>	<i>Actual applied tariff</i>
Developed	27	22	14
Developing	48	27	21
Least developed	78	14	13
World	37	24	17

Source: Jean, S., D. Laborde and W. Martin, 2006. “Consequences of alternative formulas for agricultural tariff cuts”, in K. Anderson and W. Martin, eds., *Agricultural Trade Reform and the Doha Development Round* (Hampshire, United Kingdom, Palgrave Macmillan).

Note: Figures for regions are computed as import-weighted averages across countries.

Despite the obvious distortions caused by interventionist policies in the agricultural sector, Governments still maintain that the agricultural sector requires and deserves “windows of exception” when it comes to streamlining measures that distort agricultural trade.² In many instances, Governments have not been willing to separate objectives that belong to domestic policies³ from those that are under the auspices of trade policy. Corden (1974) showed a long time ago that using trade policy for non-trade objectives is far more costly and less effective than using policies which can target chosen objectives directly (the so-called “specificity rule”). The Governments of both developing and developed countries appear to have no problems with the obvious inefficiency in using social resources when attempting to solve environmental, employment or other non-trade problems by relying only or mostly on trade policies.

Among the instruments of trade policies, Governments use mostly tariffs (in particular, per unit or specific tariffs), quantitative border barriers and export subsidies.

² The phrase is taken from a statement of the former Commerce Minister of the Government of India, Mr. Arun Jaitley, quoted in Deardorff and Stern (2004), p. 11, “We do not wish to stall the negotiations on agriculture, but we hope adequate windows of exception for economies like India that are highly dependent on agriculture, are created”.

³ For example, food security, a safety net for the poor, addressing the risks and returns in farming faced by small and marginal farmers, or rural development. See also Srinivasan (2003).

Additionally there are measures of domestic support (linked to production) that can be used in combination with other non-trade policies in creating shelter for the domestic economy or more often only selected parts of it. Most recent quantitative analyses show that, out of the measures that Governments have been using to intervene in agricultural sectors, market access measures (i.e., tariffs) have had the strongest impact, while domestic support and export subsidies were associated with less distortion (Hertel and Keeney, 2006).

The effects of protection are well known from theory as well as the experience of the many countries practising it: raised domestic prices of agricultural products, particularly food; depressed world prices of agricultural products; distorted signals for resource allocation and entrenchments of resources in inefficient uses, making it difficult for Governments to eliminate protection. Without the removal or significant weakening of this protection, trade cannot make production more efficient and competitive nor can it attract trade-creating and welfare-increasing investment. Without these actions, it is close to impossible to increase prosperity over the long term.

This paper looks at several selected issues related to agricultural trade liberalization. At the outset, the achievements resulting from the Sixth Ministerial Conference of WTO, held in Hong Kong, China, from 13 to 18 December 2005, in relation to the agricultural negotiations, are highlighted. This section then discusses the fallacies and misdirected priorities of the Doha Development Agenda, which arguably have focused only on some of the (needed) disciplines in agricultural trade. It also looks at the role of building coalitions in bringing the negotiations to a successful closure. Section 3 leaves the area of negotiations to explore how traditional “hard” protectionist measures in agricultural trade (e.g., quotas, tariffs, explicit subsidies) are being replaced by “soft” measures that, nevertheless, contain very sharp teeth for occasions when tougher action is desired. In the fourth section, the preferential trade liberalization in agriculture from the perspective of the Asian and Pacific region is reviewed and the work of ESCAP on the database for preferential trade agreements is described. The final section of the paper offers some concluding thoughts.

2. CURRENT STATE OF PLAY

Long before the unplanned loud and colourful start to the previously mentioned Sixth WTO Ministerial Conference, it was clear that yet again agricultural trade negotiations were proving very unpalatable to the taste of many stakeholders. Agriculture indeed turned into such a tension-generating agenda item that some senior trade negotiators were heard saying that agriculture should have never have been placed under the GATT/WTO “coverage”. In their view, not only has agriculture itself proven difficult to liberalize in trade and to liberate from non-economic objectives, it has paved the way for other negotiating areas to enter into the multilateral system that are similarly hard to mold into the consensus-based decision-making of that system. Nonetheless, agriculture was

given the central role in the Sixth Ministerial Conference when many members confirmed that they would consider it a “make-or-break” issue. In the end, as discussed in ESCAP (2006), it was not agriculture that kept the agenda of the Ministerial Conference and the Doha Development Agenda on the rails; it was, in fact, the collective understanding that derailing the round would probably be too costly for any country individually and for the global economy as a whole.

(a) *The Ministerial Conference in Hong Kong, China – “Kicking the can down the road”⁴*

As expected, the Sixth Ministerial Conference did not result in any surprises. With respect to agriculture, progress was made in all three pillars: market access, domestic support and export competition. New elements in the Declaration of that Conference included the following:

- Market access – the formalization of a “working hypothesis” on structuring tariffs for reductions within four tiers, with steeper cuts on higher tariffs but no further details on the formula. The key principles for constructing the formula should be: (i) a single approach (excluding only least-developed countries); (ii) reductions in bound rates; (iii) “operationally effective” special treatment for developing countries; and (iv) allowing all countries flexibility in protecting “sensitive products”;
- Domestic support – confirmation of the “working hypothesis” that the aggregate measure of support would be classified into three bands. The European Union will occupy the top band facing the highest linear tariff cuts, the United States of America and Japan will be placed in the middle band and the remaining members listed in the bottom band. The text also specifies that overall cuts in trade-distorting domestic support must be at least equal to or greater than the sum of the reductions in the amber box, blue box and *de minimis* (exempted) support;⁵
- Export competition – the Ministerial Declaration, adopted on 18 December 2005, announced parallel elimination of all forms of export subsidies and disciplines for all export measures with equivalent effect by the end of 2013 together with progressive phasing-out such that a substantial part would be realized by the end of the first half of the implementation period. This means that 2013 will mark the end of agricultural export subsidies, export credits,

⁴ The phrase “kicking the can down the road” is borrowed from Heydon (2006, p. 5), who attributes it to a United States senator. Emphasis has been added by the author.

⁵ This should act as a deterrent to simple reclassification of subsidies from one box to another in order to escape meeting commitments.

export credit guarantees or insurance programmes, activities of State-trading enterprises that are deemed subsidized and food aid that does not conform to various disciplines. It also refers to an end to all export subsidies for cotton by developed countries in 2006.⁶

It is also important to note that paragraph 24 of the Ministerial Declaration links market access ambitions in agricultural and non-agricultural market access.

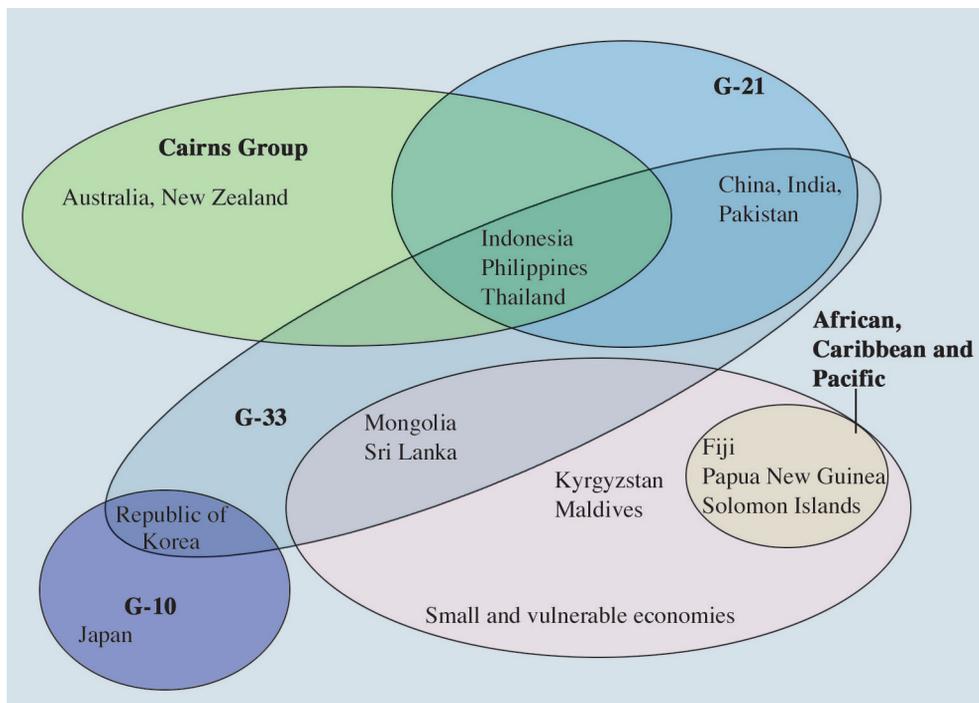
(b) Coalitions – who is kicking harder and in which direction?

To decipher what is going on in or with agricultural negotiations, it is highly relevant to be aware of the major players and groupings actively cooperating in the negotiations. The Asian and Pacific region is not represented by a single group or coalition speaking with one voice in WTO on agricultural trade issues. The region includes least developed countries (LDCs), small and vulnerable economies, developing countries that are net food importers and net food exporters, and developed economies. These countries opted to form alliances in the Cairns Group, Group of Twenty, Group of Ten, Group of Thirty-three, Group of One Hundred and Ten,⁷ and African, Caribbean and Pacific (ACP) countries, and small and vulnerable economies (SVEs). The only group that has not recruited any members from the ESCAP region is the Tropical Product Group (figure 1). Several countries (Australia, Japan, Kyrgyzstan, Maldives and New Zealand) belong only to one group (Cairns, G-10, and SVEs). Indonesia, the Philippines and Thailand are the most active, with alliances in three groups: Cairns, G-33 and G-20. The global South-South divide is quite noticeable, with the Cairns Group, representing the interests of net food exporters (including Indonesia, Malaysia, the Philippines and Thailand from developing countries, and Australia and New Zealand from the developed countries) being at one end of the spectrum in terms of negotiating positions and the net food-importing countries, which seem not to be formally linked to any groupings, at the other end.

To compensate for these wedge-inserting groups, there are ad hoc alliances called consensus builders. In agricultural negotiations in this trade round, these alliances were noticeable when the European Union and the United States first came up with a joint proposal in 2003, and again when the Five Interested Parties, that is, the United States, the European Union, India, Brazil and Australia, formulated the 2004 July Framework. The so-called New Quad that emerged at the Ministerial Conference, comprising the European

⁶ The Declaration also calls for faster and deeper reductions in trade-distorting domestic subsidies for cotton than those that will be achieved through general schedules for domestic support to farming.

⁷ The G 110 is associated with a meeting of G 20, G 33 and G 90 (64 of which are WTO members) at the Sixth Ministerial Conference. There is another group indirectly linked to agricultural liberalization, even though not involved in the AoA negotiations. It is related to negotiations on geographical indications (GIs) within the Agreement on Trade-Related Intellectual Property Rights and they are known as “Friends of GIs”. Members from the ESCAP region are India, Thailand and Turkey.

Figure 1. Coalitions on agricultural trade negotiations

Union, the United States, India and Brazil, is still the strongest force keeping this part of the negotiations rolling.

The question is whether developing countries of the Asian and Pacific region, including India and China, could or should make more of an impact by trying to form a regional alliance. With the region being so diverse, it is difficult to see what would be the unifying common interest for such a coalition. Net exporters (Cairns Group) stand to benefit from liberalization. Their interests cannot be supported by net food importers and other countries with problems related to accessing world markets, at least as long as there is no instrument of redistribution of gains from trade. The need to introduce a comprehensive and operational compensation package for trade reform (or trade adjustment package) may be one area of possible common interest. While the Uruguay round included a decision to provide financial and other assistance to LDCs and net food-importing (developing) countries, the decision was never implemented. With some countries already having some experience in designing a compensatory package for trade adjustment, notably for loss of tariff revenue at the preferential trade liberalization level within the South Asian Association for Regional Cooperation, it is plausible for this initiative to be taken up by

other developing countries in Asia and the Pacific. It could provide a unifying force for furthering regional cooperation/integration and could perhaps be extended to multilateral negotiations (see Dhar, 2005). It does not have to be limited to agricultural trade, but can be cross-cutting through the Doha Development Agenda.⁸

(c) Is the can being kicked off the road?

The most noticeable development in the area of agricultural negotiations in the aftermath of the Ministerial Conference was the issuance of a “list of questions” by Mr. Crawford Falconer, Chairman of the WTO Committee on Agriculture. In sending the list to the members’ delegations, he wanted to “underline ...that we have a huge amount of work to do” (WTO, 2006). This could not be closer to the truth.

Delegations are faced with the extremely difficult task of agreeing on, for example, relevant liberalization thresholds for developed and developing members, the treatment of sensitive products, special products for developing countries, the special safeguard mechanism, disciplines for “food for aid” as well as export subsidies, export credit, State trading enterprises and some additional details on cotton. For some of these there is no precedent or experience based on previous WTO-enforced disciplines (e.g., subsidy elements of export credits and guarantees or financing for food aid). Without a doubt, it will be close to a miracle if results can be delivered on agriculture and, in turn, almost certainly on other items of the Doha Development Agenda, with non-agricultural market access, services, trade facilitation and development aspects of all of these areas being the most important. What would facilitate this outcome? As decision-making in WTO is based on consensus, it is of the utmost importance that all involved understand all the concerns. It is also essential that free riding is either eliminated or minimized so that all members take an active role in closing the deal. After all, everyone will be involved in sharing the costs and benefits of the agreed liberalization, even if some will gain a bigger share than others.

⁸ Although not from the Asian and Pacific region, another good example of possible coalition-building is the “Uruguay round ceiling tariff issue” request by a small group of developing countries led by Kenya. On the other hand, there are also strong separatist forces most strongly linked to a debate on the erosion of preferences. However, erosion is not stopable if there is trust in the multilateral trading system, as any progress on the most-favoured-nation front will automatically have implications for other preferences. In the long term, developing countries are better off with a free(er) multilateral regime than with maintaining high non-reciprocal preferences, as the usefulness of the latter for development could be questioned.

3. FALLACIES AND PRIORITIES⁹

Unfortunately, a clear understanding of all the concerns cannot always be achieved. An increasing number of stakeholders involved in the preparation of negotiations and the process of negotiations is adhering to the principles of inclusiveness and transparency. However, this does not necessarily or automatically produce the same understanding of the problems among all the interested parties. In what follows, we briefly discuss how the lack or misinterpretation of information could lead to the negotiations becoming stalled.

Preparations for the Ministerial Conference were accompanied by a stream of academic and other publications containing, inter alia, quantitative estimations of the impacts that various Doha Development Agenda scenarios would have had in terms of welfare in individual countries or groups of countries. While this was well intended, it could backfire as it did just at the time of Sixth Ministerial Conference, with the estimates of the overall monetary gains from the Doha Development Agenda. This paper provides a brief *tour d'horizon* of the issues associated with the quantitative studies currently available.¹⁰ Basically, there are two problems with quantitative analysis of (multilateral) trade liberalization. The first is related to models that most empiricists use and the fact that numerical findings obtained by these models are often knowingly or unintentionally misinterpreted and misused. The second problem occurs due to less-than-acceptable data quality and reliability as well as from data and other quantitative information (including results of quantitative analyses) being wrongly interpreted and used. Let us discuss, albeit in simplistic terms, each of these in turn.

(a) *Models for quantitative analysis – making a choice*

As discussed in Piermartini and Teh (2005), while quantification of the effects of economic policies has become an ordinary approach in economic analysis due to advances in theory and computational and data-processing capacities, the variability of models used to capture the impacts of policies has remained somewhat narrow. Most commonly used quantitative analytical techniques in the area of trade are computable general equilibrium (CGE) and gravity models. CGE models are economists' laboratories in which they can run computer-based simulations of "real economy" replicas. In the area of trade, these models are used mostly to estimate the effects of changes in different policies (such as trade liberalization) throughout an economy. This "general equilibrium" nature of CGE models is most valuable because it reflects the interdependency of economic variables. Policymakers can verify from the model of what they know by intuition or from experience,

⁹ Inspiration for this subsection title comes from Rae and Shakur (2005).

¹⁰ Readers who prefer a more technical approach to this problem are referred to Hertel and Keeney (2006) or Keeney and Hertel (2005).

that is, they cannot give more to one group if they do not take away from another group, *ceteris paribus*. It is this feature of the model that makes it instructional and helpful when choosing from different policy options.

However, as is the case with all economic models, CGE models are based on sets of restrictive assumptions that make them “easy to use” but also less like the “real thing”, i.e., a living complex economy. Because of high degrees of aggregation in most of these models, it is quite possible that many important underlying links remain hidden. The other complexities related to the specifications of models, data availability and reliability, lack of attention given to alternative assumptions as well as a host of other issues is such that these models should be labelled “use with utmost care”. Anything less would be irresponsible. At best, the numerical results obtained when using CGE models can be used as reference points for the order of magnitude of potential effects if the world does not change significantly in the period of analysis. Most modellers and economic analysts are well aware of these caveats and use them with care and responsibility. On the other hand, others (e.g., policymakers, civil society, bureaucrats and parliamentarians) who obtain these results may not be aware of the “use with utmost care” label. Too often, the results of CGE analysis are misinterpreted and they could be intentionally used to misrepresent the outcome of a policy change that is analysed.

The gravity model has become a very fashionable tool for quantitative analysis in the field of trade. While the model has been around for several decades, it is the surge in preferential trade agreements that has really boosted its use. The model is used to measure and explain the effects on trade flows of a policy that has already taken effect, and not for questions related to the implementation of new policies (such as changes in tariff structure). However, the results can still be used as inputs in future policymaking as “past policy impacts may serve to understand the implications of a change in future policy” (Piermartini and Teh, 2005). In other words, as laymen would say, one should learn from somebody else’s mistakes. A particular problem with such models is that so far in explaining trade between two countries (even WTO members) there is no variable to reflect their commitments in multilateral liberalization. A more basic problem comes from using unweighted distance as a proxy for trade costs (and/or transport costs). However, it should be obvious that the cost of cargo being transported a certain distance across the European continent between, for example, Zagreb in Croatia and Luxemburg will be very different from that for the same type of cargo being transported the same distance across the African continent between, for example, Yaoundé in Cameroon and Bangui in Central African Republic.

This and other more specific problems aside, it is still unlikely that numbers obtained by either type of models will be replicated in the real world. According to DeRosa and Gilbert (2005), the CGE models used to predict Uruguay round gains proved to have underpredicted gains. In contrast, gravity models tend to overestimate gains, particularly

those of some preferential trade agreements. The bottom line is that better models and better data are needed. In the meantime, as is often the case in economic policy, a rule of thumb should be applied. When it comes to trade liberalization, there is no doubt that the thumb (even if the hand is invisible!) points towards more liberal trade for all.

(b) Data

Another problem with using quantitative analysis is the availability of data in a multilateral context. Many countries do not have complete or reliable data series. In addition, in some cases, data are misinterpreted and misused even if they are not used as inputs in further quantitative analysis. For example, Panagariya (2005) and Anderson and others (2005) commented on misinterpreting Organisation for Economic Co-operation and Development (OECD) measures of producer-support estimates as “export subsidies”. Such misrepresentation of results leads to the creation of fallacies and, from there, to the choice of the wrong priorities for negotiating agenda. An example is that the focus given by using wrong estimates for subsidies drove many WTO members into prioritizing negotiations in the area of agricultural export subsidies. However, empirical findings on the contribution to economic welfare of agricultural trade liberalization are converging towards a conclusion that, at the global level, the removal of export subsidies gives the smallest share of increases in welfare (around 2 per cent). Furthermore, removal of export subsidies has a negative impact on non-OECD countries that is compensated for by the positive impact of improving import access. The removal of domestic support measures, according to these findings, is more than twice as good as the elimination of export subsidies (5 per cent of the total increase in welfare). The removal of barriers to market access is what drives the increase in welfare, with the contribution being 93 per cent.¹¹

Given the fragility of quantitative assessments in the field of trade, it is extremely important that findings are interpreted correctly and used in the proper context. If this is not practised by all, it is easy to hijack some of the results for the interest of specific groups. Identification of the right source of positive change in welfare is crucial to the identification of viable negotiating positions for particular groups.¹²

¹¹ According to Will Martin, market access barriers are the key in agricultural trade liberalization as “deep reductions in agricultural tariffs would deliver twelve times the gains that would be achieved by abolishing export subsidies and trade-distorting domestic support to agriculture.” See <<http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20716308~menuPK:51062077~pagePK:34370~piPK:34424~theSitePK:4607,00.html>>.

¹² The largest culprit in the area of using agricultural export subsidies has been the European Union. In the Doha Development Agenda, the European Union agreed to eliminate the use of this instrument and even accepted the date (2013) by which to do so. It appears that the European Union had been reducing these subsidies since 2000 and that it would have continued doing so unilaterally. As Hoekman and Messerlin (2006, p. 197) state: “...the European Union may be selling rapidly depreciating ‘assets’.”

4. SIDE EFFECTS OF THE WTO NEGOTIATIONS: FUZZIER PROTECTION

Sequential rounds of multilateral trade liberalization have been followed by the emergence of new border and non-border barriers in an effort by Governments to replace lost protection due to the reduction and elimination of tariffs and quotas. These new barriers appear to be less transparent¹³ than traditional hard border barriers, i.e., tariffs and quantitative restrictions. Most such barriers are hidden as customs procedures and administrative practices, special charges and taxes, restrictive practices and technical barriers to trade. In agricultural trade, technical barriers to trade are becoming increasingly prevalent. Stringent policy measures through sanitary regulations and quality standards, safety and industrial standards have become the norm rather than the exception. In the context of non-reciprocal or reciprocal preferential trade, rules of origin can also easily be used to obscure protectionist practices by the importing country.

In view of the evident ease with which “bird flu” as well as similar potentially very serious human illnesses can spread, no one would argue in favour of a total ban on sanitary and other related measures, which are meant to protect public health. What is arguable, however, is the stringency of the measures. If the social marginal benefit to public health from an additional measure (or the toughening of an existing one) is not greater than the social marginal cost resulting from such a measure through the reduction of competition and efficiency, then the change is not justified. It does not mean that it will not be adopted, but at least the public deserves to know the cost of such a change.

This paper, being a brief overview of several issues, cannot go into a comprehensive analysis of the various soft barriers. However, two areas are worth further comment. One is related to geographical indications, and the other to food safety requirements.

(a) Geographical indications

Geographical indications, or “GIs” as they are often referred to, “identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin” (Agreement on Trade-Related Intellectual Property Rights (TRIPs), article 22.1). These mainly comprise place names used to identify products that originate from those places and which have these characteristics (e.g., “Champagne”, “Madeira” and “Basmati”). Two articles in the TRIPs Agreement define protection in relation to geographical indications. Article 22 covers all products by defining a standard level of protection. This standard requires that geographical indications must be protected for the

¹³ They also appear harder to manage in the multilateral negotiating forum as many instruments tend to be labelled as “domestic regulation”.

benefit of the public, as well as to ensure fair competition. Article 23 provides a higher or enhanced level of protection for geographical indications for wines and spirits. Exceptions contained in article 24 allow for no or limited protection in cases where a name has become the common (“generic”) term (e.g., “cheddar”) and when a term has already been registered as a trademark. The Doha Development Agenda focused on two additional issues of a higher level of protection: the creation of a multilateral register for wines and spirits and the extension of the higher level of protection beyond wines and spirits.

WTO members differ with respect to the ways that they implement and monitor the geographical indications. The European Union has the “Register of protected designations of origin and protected geographical indications”. In November 2005, the European Commission added the names of six agricultural products and foodstuffs to the Register. These included French, Italian and Spanish products (such as “pâtes d’Alsace” or “jamón de Trevélez”). The list contains about 720 product names already protected under the legislation on the protection of geographical indications and designations of origin and traditional speciality, which is the third category of rules on agricultural quality products under name “traditional speciality guaranteed”. The United States has a less stringent system known as “certification marks”.

While every country should have an opportunity to secure the best quality of food and other agricultural items for its society, this should not be done at the expense of other societies. Geographical indications have the same effect as escalating tariffs because they tend to lock in the producers outside the “protected” territory into the lower stages of production and effectively ban entrance into the processing stage. In some cases, this could be justified by the resource endowments and technological capacity of a country; however, in many cases, this is just another barrier to prevent a lower cost producer from entering the market with a similar product.¹⁴ New proposals to extend geographical indications are still being debated, with both pro- and anti-camps strongly pushing their points of view.

(b) Food safety standards

There is much evidence that food safety and agricultural health standards are becoming increasingly challenging for developing country exporters when trying to access international markets for high-value food products (fruit, vegetables, fish, meat, nuts and spices). This is best evidenced through dispute settlement cases in WTO. Much of the related literature also confirms that sanitary and phytosanitary standards could be used as a barrier to trade because of their disguised discriminatory effect and because of the high

¹⁴ Perhaps the case of “feta” cheese could be used as an example. There is also a claim that geographical indications drive up product (export) values, benefiting producers from price premiums because of the growing demand for “genuine” products. However, this increased profit argument does not sit well with the original argument for introducing geographical indications.

cost of compliance. However, there is also a “silver lining”, as the many developing countries imposing sanitary and phytosanitary standards on producers and exporters provide an incentive for economy- and system-wide changes. These changes include modernization of production and regulation as well as the adoption of safer and more sustainable production practices (Jaffe, 2005).

The World Bank (2005) found that the adoption of a strategic approach to food safety, agricultural health and trade was the best long-term option for developing countries in meeting the challenges of standards of all types. It is argued that for countries and suppliers that are ready to follow this approach, more stringent standards of food safety and health would represent new opportunities rather than obstacles. However, producers and exporters in many developing countries and LDCs find that compliance with these standards makes it impossible for them to compete in the market they want to access. Rather than adopting different standards for them, it would be more in line with a development-oriented round to increase development flows (“aid for trade” included) to such countries in order to build up their capacities to cope with increasing levels of food safety standards.

In the above connection, work also needs to be done in the area of standard setting. So far, developing countries have not contributed substantially to international standard-setting bodies or other agencies that influence the level and character of standards in terms of participation or direction. Here, the focus should not be on readjustment of standards to a lower or the lowest common denominator. Rather, it should be on facilitating the use of practices and procedures that support the adoption of high(er) standards everywhere as long as an increase in standard level is socially justified. A related phenomenon emerging in this area is the increasing role of private standards that are beyond public control yet seem to be governing international and national trade in food items. It has been reported that standards are imposed on producers from developing countries with requirements exceeding public regulations, especially regarding production processes, certification and traceability (see, for example, Bureau and others, 2005). This practice makes the demands of distributors in developed countries excessively stringent and reduces the cost-effectiveness of the developing country producers.

5. AGRICULTURE IN REGIONAL PREFERENTIAL TRADE AGREEMENTS

At a recent World Bank conference, it was claimed that “WTO, particularly for agricultural liberalization, is more or less the only game in town”. It has also been claimed that “very few so-called free trade agreements are really about freeing trade or creating new trading opportunities” and that they are also very weak in introducing and enforcing discipline that is the trademark of multilateral liberalization (Lamy, 2006).

A cursory glimpse at the map of preferential trade agreements (PTAs) (see figure 2) shows that this lack of liberalization and discipline dimensions has not prevented Governments in the region from promoting entry into various types of preferential trade agreements. At last count, there were close to 100 preferential trade agreements with at least one member coming from the membership of ESCAP. Most of them are shallow free-trade-area type arrangements, but which venture into non-trade areas of cooperation and integration. Many are also still on their way to satisfying WTO compliance requirements. While the academic literature has formed views on various important issues with respect to preferential liberalization, not much progress has been achieved in empirical testing of PTAs in Asia and the Pacific with regard to these issues.

For example, while the academic literature has a great deal to say on the advantages of deeper versus shallow integration, too little is understood about this area in the context of Asian and Pacific PTAs. There is also insufficient understanding of the treatment of particular sectors, including agriculture, in these PTAs. Even less can be said about the possible long-term contribution of PTA-driven liberalization to freer trade globally.

To improve understanding of the above issues, the Asia-Pacific Research and Training Network on Trade (ARTNeT) included a study on regional agricultural trade liberalization in its 2005 research programme.¹⁵ The findings of this project will be available later in 2006. However, preliminary results show that, in contrast to WTO disciplines that embrace these pillars, PTAs as a rule focus on liberalizing only one of them, i.e., market access. This is indeed movement in the right direction if we are to rely on quantitative estimates; it is market access that provides the greatest contribution to increases in welfare following multilateral liberalization. Thus far, we have yet to discover PTAs in the region that deal with the export subsidies and domestic support disciplines in agriculture as effectively as in multilateral agreements. Because a large proportion of these agreements belong to the South-South type, most of them also include significant exclusions in the form of sensitive products and positive lists. However, in contrast to proposals for tariff cuts in the Doha Development Agenda, with preferential trade, market access is freed through cuts in applied tariff rates, which is also the only sensible direction to take. As expected, the agreements do contain safeguards and sanitary and phytosanitary standards, but not beyond the level of that found in WTO provisions. Similar to multilateral agreements, PTAs at this shallow level also do not negotiate on non-tariff measures.

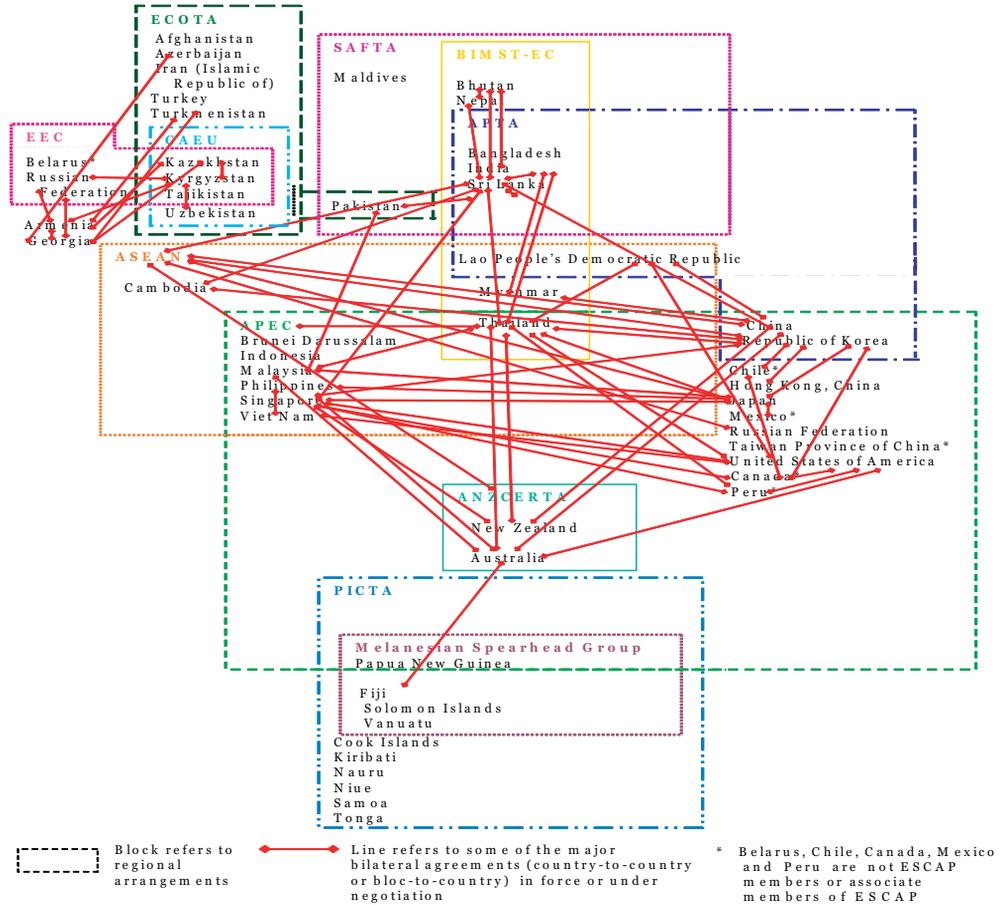
(a) Asia-Pacific preferential trade and investment agreements database¹⁶

In addition to being actively engaged in research on trade liberalization, both multilateral and preferential, of and within national economies, the ESCAP secretariat is

¹⁵ More details can be found at <www.artnetontrade.org>.

¹⁶ This section is based on Bonapace and Mikic, 2006.

Figure 2. From spaghetti bowl to noodles: main regional integration arrangements of ESCAP members and associate members



Source: ESCAP secretariat.

Notes: ANZCERTA – Australia-New Zealand Closer Economic Relations Trade Agreement; APEC – Asia-Pacific Economic Cooperation; APTA – Asia-Pacific Trade Agreement; ASEAN – Association of South-East Asian Nations; BIMST-EC – Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation; CAEU – Central Asian Economic Union; ECOTA – Economic Cooperation Organization Trade Agreement; EEC – European Economic Community; PICTA – Pacific Island Countries Free Trade Agreement; SAFTA – South Asian Free Trade Area.

developing a “one-stop” database that collates descriptive and quantitative information on more than 80 RTAs/bilateral trade agreements (BTAs) applicable to the region. The objective is to provide stakeholders (Governments, researchers, policy analysts and civil society) with a tool to monitor and analyse developments in preferential trade areas. The database is called the Asia-Pacific Preferential Trade and Investment Agreements Database (APTIAD) and is available at <www.unescap.org/tid/pta%5Fapp/>. Its current coverage will be expanded to include trade flows and the development of indicators to assess the implications of RTAs/BTAs on such flows.

APTIAD has a searchable function that, when fully developed, will contain:

- (a) Detailed descriptive and up-to-date information on the provisions of bilateral and regional agreements;
- (b) Statistical data on trade flows, commodity composition and services trade (where available) by individual agreements;
- (c) Selected indicators of performance of individual agreements for pre-defined periods.

The first phase in developing this database has been completed.¹⁷ The current phase is focusing on the following:

- (a) Adding information related to the coverage of each agreement (contingent protection, standards, services and other areas) by each agreement;
- (b) Testing online use of the database;
- (c) Developing statistical data sets related to each agreement;
- (d) Developing analytical measures and indicators for tracking and assessing PTA performance in various dimensions, and preparing the results for online presentation.

Indicators of PTA performance will be useful not only for assessing PTAs already in force, but also in providing insights into the potential outcomes of proposed agreements. This information will be used to set out best practices that could be consulted by ESCAP members when considering the negotiation of a PTA. Ultimately, the database will provide the information and analytical basis for work on designing a modal trade agreement for developing countries, using existing agreements and their performance. The principles to be included in such a “blueprint” are:

¹⁷ The current version (available on CD and online) encompasses close to 100 agreements. It covers all the agreements reported to WTO to date, in which at least one party is in the ESCAP region. It also includes other agreements that have not been notified but for which there is official information readily available as well as those agreements under negotiation for which there has been at least a first formal negotiation round.

- (a) Compliance with article XXIV of GATT and article C of the General Agreement on Trade in Services;
- (b) Coverage of the so-called WTO+ areas (competition, government procurement and investment);
- (c) The choice of partners with the aim of maximizing own trade creation and minimizing the trade diversion of others, reluctance to act upon special interest group pressures and reliance on research and evidence-based policymaking.

6. CONCLUSIONS

This paper is a *tour d'horizon* of some of the remaining and emerging issues in agricultural trade liberalization at all levels and is not intended to be an ambitious effort to cover any of the mentioned issues in a conclusive and comprehensive way. For that reason, any recommendations that could be derived from this paper would lack the unambiguous support of theory and evidence. However, it can be said that it is high time for all countries to move from trade-distorting policies to those that do less harm to the trading system while more effectively meeting domestic farm policy objectives that include the provision of security and predictability for farming sectors.

In order to achieve such a policy shift, the creation of less diverse positions in negotiations from the Asian and Pacific region would be helpful. Instead of thinking in terms of “friends of fish”, “friends of GIs” or “very close friends of services”, perhaps a coalition of “friends of people” should be formed with the interests of the majority being put first, ahead of those of special interest groups.

REFERENCES

- Anderson, K., W. Martin and E. Valenzuela (2005). "Why market access is the most important of agriculture's 'three pillars' in the Doha negotiations" *Trade Note 26*, 9 December 2005 (Washington, D.C., World Bank).
- Bonapace, T. and M. Mikic (2006). "Regionalism *quo vadis?* Charting the territory for new integration routes", paper presented at the Asian Development Bank Meeting on Brainstorming on Free Trade Agreements: Issues and Challenges in Designing Free Trade Agreements in Asia, Manila, 20 March 2006, mimeograph.
- Bureau, J-C., S. Jean and A. Matthews (2005). *The Consequences of Agricultural Trade Liberalization for Developing Countries: Distinguishing Between Genuine Benefits and False Hopes*, CEPII, Working Paper No. 2005-13.
- Corden, M. (1974). *Trade Policy and Economic Welfare* (Oxford, Clarendon Press).
- Deardorff, A. and R. Stern (2004). *Designing a Pro-Active Stance for India in the Doha Development Agenda Negotiations*, Discussion Paper No. 521 (Ann Arbor, School of Public Policy, University of Michigan).
- DeRosa, D. and J. Gilbert (2005). *Predicting Trade Expansion under FTAs and Multilateral Agreements*, Working Paper Series No. 05-13, October 2005 (Washington, D.C., Institute for International Economics).
- Dhar, B. (2005). "Liberalization in agricultural trade: issues and concerns in delivering on the WTO round: a high-level government-business dialogue", *Studies in Trade and Development 56* (New York, United Nations), pp. 111-141.
- Economic and Social Commission for Asia and the Pacific (ESCAP) (2006). "Outcome of the Sixth WTO Ministerial Conference: no surprises", *Socio-Economic Policy Brief*, Issue No. 4 (Bangkok), January.
- Hertel, T.W. and R. Keeney (2006). "What's at stake: the relative importance of import barriers, export subsidies and domestic support", in K. Anderson and W. Martin, eds., *Agricultural Trade Reform and the Doha Development Agenda* (Hampshire, United Kingdom, Palgrave Macmillan).
- Heydon, K. (2006). *After the WTO Hong Kong Ministerial Meeting: What is at Stake?*, Organisation for Economic Co-operation and Development Trade Policy Working Paper No. 27 (Paris).
- Hoekman, B. and P. Messerlin (2006). "Removing the exception of agricultural export subsidies" in K. Anderson and W. Martin, eds., *Agricultural Trade Reform and the Doha Development Agenda* (Hampshire, United Kingdom, Palgrave Macmillan).

- Jaffe, S.M. (2005). "Food safety and agricultural health standards and developing country exports: rethinking the impacts and the policy agenda", *Trade Note 25*, 14 September (Washington, D.C., World Bank).
- Keeney, R. and T.W. Hertel (2005). *GTAP-AGR: A Framework for Assessing the Implications of Multilateral Changes in Agricultural Policies*, GTAP Technical Paper No. 24 (West Lafayette, Indiana, Centre for Global Trade Analysis, Purdue University).
- Lamy, P. (2006). "The Doha Development Agenda: sweet dreams or slip slidin' away?" speech at the International Institute of Economics, Washington, D.C., 17 February, available at <www.wto.org/english/news_e/sppl_e/sppl19_e.htm>.
- Panagariya, A. (2005). "Liberalizing agriculture", *Foreign Affairs*, WTO Special Edition, vol. 84, No. 7, December, pp. 56-67.
- Piermartini, R. and R. The (2005). *Demystifying Modelling Methods for Trade Policy*, Discussion Paper No. 10 (Geneva, World Trade Organization).
- Rae, A. and S. Shakur (2005). "The WTO Doha negotiations: fallacies and priorities", mimeograph, <http://econ.massey.ac.nz/caps/NZARES_05.pdf>.
- Srinivasan, T.N. (2003). "India in the Doha round", *Financial Express*, 4 September.
- World Bank (2005). *Food Safety and Agricultural Health Standards: Challenges and Opportunities for Developing Country Exports* (Washington, D.C., World Bank).
- World Trade Organization (WTO) (2006). *Agriculture Negotiations Non Exhaustive List of Questions*, JOB(06)/26, Committee on Agriculture Special Session, <www.wto.org/english/tratop_e/agric_e/ag_questions_e.htm#questions>.

Policy Briefs

The Economics of Outsourcing

Introduction

Rapid advancements in information and communications technologies (ICT), along with reductions in barriers to cross-border trade and factor flows, have worked in tandem to promote cross-border production sharing. This slicing of the value added chain in manufactured goods has been going on for several decades in Asia and elsewhere. However, many service activities and processes are also becoming fragmented from the actual production process and are taking place in different geographical locations, both within and outside a country. The phenomenon whereby an entity located in one country might disperse some of its service activities (or parts thereof) to one or more other countries has been broadly termed “offshoring” or “outsourcing”.¹

There is a small but growing body of analytical work indicating that both industrial and developing countries stand to reap substantial gains because of global outsourcing in services. Specifically, outsourcing ought to lead to efficiency gains for industrial countries by allowing them the opportunity to specialize in areas of their core competencies. It also presents significant benefits for developing countries by opening up new export, growth and employment opportunities in various tradable service activities. Nonetheless, there has been widespread negative media coverage in industrial countries about the offshoring of service sector jobs. This in turn has given rise to considerable anxiety among policymakers and the general public that outsourcing could lead to massive redistribution, *on a net basis*, of both blue- and white-collar jobs from industrial to developing countries.

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¹ The terms offshoring and outsourcing are used interchangeably in this policy brief. As noted later, this term is referred to only in the international context, i.e., we focus on cross-border transactions rather than domestic offshoring.

This policy brief offers an initial exploration of the phenomenon of outsourcing, with particular reference to the Asian and Pacific region. It has three objectives. First, it seeks to bring greater conceptual clarity to the phenomenon of outsourcing, focusing on definitions and measurement issues, as well as the scope of such activities. Second, it offers a broad overview of the economics of outsourcing, assessing its economic implications for both developed and developing countries. Third, it considers the role that services trade liberalization can play in facilitating the process of outsourcing.

Outsourcing of Services: An Overview

The World Trade Organization (WTO) describes four types of outsourcing using location and organization control as distinguishing criteria. With regard to international trade flows, what is important is not so much organizational control, i.e., intrafirm versus arms-length, but rather, location of economic activity. What we are concerned with here is all forms of international outsourcing as opposed to any type of domestic offshoring. International outsourcing involving arms-length transactions, with no direct interface between consumer and producer comes under the rubric of mode 1 services trade. This category needs to be distinguished from captive offshoring that involves establishing a commercial presence by foreign providers in another country, as represented under mode 3 of the General Agreement on Trade in Services (GATS).

Offshored service activities have typically been highly commoditizable and labour-intensive (semi-skilled) in nature. The most commonly outsourced activities are ICT-enabled “business processing outsourcing” (BPO) services. Activities under this category have included call-centre support and other back-end business process operations such as data entry and handling, coding, medical and legal transcriptions and testing. However, outsourcing is also increasingly taking place in higher-end activities or so-called “knowledge process outsourcing” (KPOs) that include valuation and investment analysis, market research, consulting, legal and insurance claims processing, software design, architecture, drafting and filing of patent applications, drug discovery and other types of research and development (R and D) activities, chip design and embedded systems, analytics and inventory management. The KPO business is only at its infancy and is set to take off in the next few years, just as the BPO business has done in the last few. According to one recent estimate, the global KPO market is expected to grow at a cumulative annual growth rate of 46 per cent, from \$1.2 billion in 2003 to \$17 billion in 2010. In contrast, the low-end BPO market is expected to grow at about half that rate over the same period (though this would still be a very robust and seemingly sustainable rate of growth) (Majumdar, 2004).

Measuring the extent of outsourcing activity is an extremely difficult task in view of the acute lack of comprehensive and internationally harmonized data. Although data on computer and information services and other business services reported in the *IMF Balance*

of *Payments Statistics Yearbook* provides some broad indication of the magnitude of international cross-border trade in some services, not all such service transactions can necessarily be characterized as being of the outsourcing variety.

As an indication of the severe measurement difficulties noted above, the Organisation for Economic Co-operation and Development (OECD) has estimated the global volume of the offshoring market (excluding domestic outsourcing) in 2003 to have been anywhere between \$10 billion on the low end and \$50 billion on the high end (OECD, 2004). Many of the countries that are witnessing an offshoring wave, namely, India and China in the Asian and Pacific region, as well as Ireland, Brazil and many smaller Eastern European countries (such as Estonia and Latvia), have inevitably experienced rapid growth in exports of business services and computer and information services (Amiti and Wei, 2004).

According to A.T. Kearney's 2004 index, India ranks as the most attractive service offshore location; it is expected to capture more than half the global BPO market, with China and the Russian Federation also among the more attractive destinations (A.T. Kearney, 2004). Other attractive destinations include Malaysia, the Philippines and Singapore. Interestingly, while the industrial countries, such as Germany, Japan and the United States, are the top outsourcers in business services, these countries also dominate the list of top destination countries, with India and China respectively ranking only sixth and fourteenth among the top "insourcing" countries (see table 1). In other words, outsourcing

Table 1. Business services: largest insourcers and outsourcers, in absolute value terms, 2002

<i>Rank</i>	<i>Country</i>	<i>Insourcers (Millions of United States dollars)</i>	<i>Rank</i>	<i>Country</i>	<i>Outsourcers (Millions of United States dollars)</i>
1	United States	58 794	1	United States	40 929
2	United Kingdom	36 740	2	Germany	39 113
3	Germany	27 907	3	Japan	24 714
4	France	20 864	4	Netherlands	21 038
5	Netherlands	20 074	5	Italy	20 370
6	India	18 630	6	France	19 111
8	Japan	17 401	9	United Kingdom	16 184
14	China	10 419	11	India	11 817
29	Russian Federation	2 012	18	China	7 957
			20	Russian Federation	4 583

Source: Mary Amiti and Shang-Jin Wei (2004). *Fear of Service Outsourcing: Is It Justified?*, IMF Working Paper, WP/04/186, October.

is not a one-way street from developed to developing countries. For instance, a number of Indian outsourcing operations have left mid- and higher-margin activities in India and have moved some lower-end activities to China and some South-East Asian countries such as the Philippines (due to costs), while others have chosen to set up parallel bases in countries such as Singapore, partly as an insurance policy (for instance, in the event that operations in India or other places are disrupted).

Implications for Developed and Developing Countries

As noted, the offshoring of services is a relatively new phenomenon that has generated significant debate in the popular press and among policymakers. The analytical literature on the subject is still sparse but growing. By and large, the literature analyses the impact of outsourcing on output, trade, wages and distribution of income (Bhagwati and others, 2004; Brainard and Litan, 2004). In a nutshell, but at the risk of oversimplification, the literature argues that efficiency and productivity gains achieved via offshoring should enhance growth and employment opportunities for both industrial and developing countries.

For developing countries, offshoring seems to be unequivocally beneficial for employment, exports and economic growth. For instance, a number of countries in the Asian and Pacific region with a large English-speaking population, an adequate ICT infrastructure and a large pool of information technology professionals have been reaping significant employment and income gains from these new possibilities and expect to continue to do so.

What about industrial countries? Outsourcing allows for the relocation of inefficient parts of the production process to another country where they can be produced cheaply, freeing up resources so that the industrial country can specialize in the product and in which it has a comparative advantage. In this way, outsourcing leads to gains from trade and improves economic welfare for all countries involved in the global division of labour. Indeed, since a country's comparative advantage in a final product is a weighted average of its relative efficiency across constituent activities, the country can improve its overall competitive edge by obtaining from abroad the components in which the country is less efficient at producing/processing. The long-run gains are also potentially mutual and significant since jobs created offshore in developing countries generate demand for the export of goods and services from industrial countries, not to mention the enhancement of tourism and foreign direct investment inflows. It is the age-old global wealth-creation story, a win-win situation for all countries involved (i.e., insourcers and outsourcers).

That said, there will invariably be some short-term adjustment costs in terms of job losses in certain sectors or industries. However, this is not unique to outsourcing; it is an inevitable consequence of any form of reallocation of resources to their most productive

uses. This is an important point worth emphasizing. As with all types of trade, outsourcing will lead to winners and losers. The pertinent issue is that the winners (including consumers, shareholders etc.) will exceed the losers as resources are optimally deployed across countries. In fact, before lamenting about the evils of using offshore service providers, one must ask the question: what is the viable alternative? If companies do not outsource to reduce costs, while their competitors do so aggressively, they stand to lose global and local market share to their foreign rivals. The resulting adverse impact on corporate profit growth will limit the creation of new capital and reinvestment in domestic technology. In the worst-case scenario, companies that do not outsource are weighed down by ever-increasing costs, leading to eventual bankruptcy or a bail-out by taxpayers. Attempting to save jobs in a particular segment of the workforce could have far-reaching and costlier repercussions elsewhere.

As previously noted, there is a move from BPOs to KPOs, at least with regard to some of the outsourcing to India. This has fuelled concerns that conventional trade theory is no longer relevant and an industrial country such as the United States will end up outsourcing *all* its service activities, both high- and low-end activities (*Business Week*, 2004). However, such concerns are exaggerated, to say the least. For example, there are several types of services such as tourism, restaurant and catering that cannot be outsourced as they require mode 2 of service provision (i.e., movement of consumers to the service providers).

The dominant and most widely quoted projection of future job losses due to the movement of jobs offshore is by the consulting company Forrester Research, which predicted that 3.3 million United States services jobs were likely to be moved offshore by 2015 (McCarthy and others, 2002). However, a subsequent report using United States Bureau of Labor Statistics data found that about 70 per cent of workers losing jobs due to outsourcing were re-employed (McKinsey Global Institute, 2003). In other words, services outsourcing should not lead to a fall in aggregate employment as enough new, and often higher value added, jobs are created in other sectors. As such, the perceived fears that services outsourcing may lead to massive job losses *on a net basis* in the industrial countries may be unfounded. While none of the empirical studies should be taken as being authoritative at this stage, they are indicative that one should not rush to pass negative judgement on outsourcing just by virtue of the fact that there are *gross* job losses (Amiti and Wei, 2004; Mann, 2003). All this being said, it is a fact that outsourcing is disrupting usual job patterns and assumptions regarding job security and has raised the overall level of anxiety of blue- and white-collar workers worldwide. It is imperative that these anxieties be appropriately managed if support for globalization is to remain intact.

Concluding Remarks

It is clear that changes in technology are enabling an increasing number of activities to be traded internationally. Outsourcing wisely and taking advantage of the new division of labour should be an integral part of continued corporate and economic restructuring if the country, industrial or developing, is to remain globally competitive in the longer term. Myopic protectionist tendencies and simplistic arguments that prevent the optimum allocation of resources (i.e., global division of labour) should be refuted. The focus of well-meaning unions and policymakers should instead be on relieving anxieties and helping displaced workers to develop new skills so that they remain relevant and employable, rather than lamenting the loss of some existing jobs in areas in which the country is no longer competitive. Governments and multilateral agencies should also work towards improving the quality of services trade data and the official statistics on outsourcing, as this would help to mitigate any false perceptions arising from outsourcing.

Many developing countries in Asia and the Pacific and elsewhere stand to gain significantly from the outsourcing phenomenon, just as East Asia benefited from the fragmentation and offshore dispersion of manufactured goods (such as electronics). It is therefore in the best interests of developing countries to lobby strongly for more extensive and faster global liberalization of services, as it can benefit offshoring activities in two ways (Wunsch and Mattoo, 2004). One is by way of liberalization of services through mode 4 (temporary movement of natural persons), which facilitates the movement of skilled professionals across developed and developing countries; it has a direct impact on offshore outsourcing. The other is by way of mode 3 (commercial presence), especially in higher-end outsourcing activities such as research and development and product design.

However, the promotion of higher-end outsourcing activities into developing countries would require the liberalization of supporting services related to infrastructure (namely, transportation and logistics), as well as enhancing domestic legislation and provisions relating to data privacy, tax treatment, data protection and security, and the protection of intellectual property rights. Thus, it is imperative that external liberalization be accompanied by appropriate domestic policy reforms if a country is to maximize its net benefits from integrating with the global economy.

REFERENCES

- Amiti, Mary and Shang-Jin Wei (2004). *Fear of Service Outsourcing: Is It Justified?*, IMF Working Paper, WP/04/186, October.
- A.T. Kearney (2004). *A.T. Kearney's 2004 Offshore Location Attractiveness Index: Making Offshore Decisions* <www.atkearney.com/shared_res/pdf/Making_Offshore_S.pdf>.
- Bhagwati, J.N., A. Panagariya and T.N. Srinivasan, (2004). "The muddles over outsourcing", *Journal of Economic Perspectives*, vol. 18, No. 4, pp. 93-114.
- Brainard, Lael and Robert E. Litan (2004). "*Offshoring*" *Service Jobs: Bane or Boon and What to Do?*, Policy Brief No. 132 (Washington, D.C., Brookings Institution), April.
- Business Week* (2004). "Shaking up trade theory", December 6.
- Majumdar, S. (2004). "KPO: the next big opportunity" (Rediff.com India Ltd.), 31 December, <<http://in.rediff.com/money/2004/dec/31guest2.htm>>.
- Mann, C.L. (2003). *Globalization of IT Services and White Collar Jobs: The Next Wave of Productivity Growth*, International Economics Policy Brief, No. PB03-11, (Washington, D.C., Institute for International Economics), December, <www.iie.com/publications/pb/pb03-11.pdf>.
- McCarthy, John C., A. Dash, H. Liddell, C.F. Ross and Bruce D. Temkin (2002). "3.3 million US services jobs to go offshore", *TechStrategy Brief* (Cambridge, MA, Forrester Research), November.
- McKinsey Global Institute (2003). *Offshoring: Is it a Win-Win Game?* (San Francisco), August, <www.mckinsey.com/knowledge/mgi/offshore>.
- Organisation for Economic Co-operation and Development (OECD) (2004). *Employment Outlook of the OECD* (Paris), Chapter 2.
- Wunsch, Sacha and Aaditya Mattoo (2004). *Pre-empting Protectionism in Services: The WTO and Outsourcing*, Policy Research Working Paper No. 3237 (Washington D.C., World Bank), March.

**Executive Summaries of Recent
Studies in Trade and Investment
Published by the Secretariat**

Delivering on the WTO Round: A High-level Government-Business Dialogue

The ESCAP secretariat periodically organizes high-level policy dialogues to facilitate a common understanding of issues of mutual interest among members and associate members of ESCAP. The publication entitled *Delivering on the WTO Round: A High-level Government-Business Dialogue*, published as No. 56 in the ESCAP series on Studies in Trade and Investment (ST/ESCAP/2393, United Nations publication, Sales No. E.06.II.F.4) is a compilation of selected papers and statements presented at the High-level Government-Business Dialogue, which took place on 4 and 5 October 2005 in Macao, China. The publication provides insights into the status of the negotiations in the main areas of the Doha Development Agenda and their interlinkages with business and economic development in Asia and the Pacific. It contains both qualitative and quantitative assessments of trade liberalization at the multilateral regional/bilateral levels for poverty reduction and development. Special attention is given to harnessing the trade negotiation process for the realization of the Millennium Development Goals. Special attention is also given to the potential of multilateral trade liberalization to fight poverty, the prospects for consolidation of preferential trade agreements of the region and the value of business advocacy and multistakeholder policy dialogues in promoting informed trade policy decision-making. As mentioned in the preface, it is hoped that this publication will contribute to advancing the debate in further support of the endeavors of the Governments and people of the Asian and Pacific region on trade as a means of securing prosperous and sustainable development.

The global production system is essential to economic efficiency and consumer welfare but can easily be blocked by the complexity of rules adopted at different levels: local, regional and global. Transparent, fair and predictable rules for trade at the multilateral level are superior to a myriad of overlapping and mutually conflicting bilateral and regional rules that are emerging out of hyperactive negotiations on preferential trade agreements in the region. While the presumption has been that full trade liberalization in even small pockets of the global economy would translate into wider and wider areas of free trade, many trade agreements fail to *create trade* successfully enough to trigger this

domino effect. Instead, trade costs are being increased and gains lost. Chapter III argues that preferential trade could be tamed through geographical, functional or institutional consolidation to create integrated markets, which can support modern global production. Since global production is inclusive, this increase in trade frictions affects all: knowledge-intensive jobs, manufacturing jobs, jobs creating components and inputs and service-related jobs. In the publication, Victor Fung urges all stakeholders to work towards a successful outcome of the Doha Round (pp. 14-15). He claims that “the multilateral system enables each location around the world to contribute according to its skills and capabilities and to develop its own competitive advantage. Modern production systems are multilateral, not bilateral. Multilateralism democratizes the global economy – there is indeed place for everyone”.

The study indicates that in poor countries significant gains from global trade reforms are conditional on actions to induce new employment opportunities, higher wages and a move out of subsistence agricultural activities. Domestic supply constraints are the main reason for the lack of trade growth and diversification in many of the poorest developing countries. Improving supply capacities and regulatory measures in global trade reform that locks right trade policy regimes in place and mechanisms to correct imbalances could provide a strong engine of growth to the region, as discussed in chapter II of the study.

Chapters IV, V and VI provide state of play in three important areas of the current negotiation round: agriculture, services and trade facilitation. Chapter IV provides a comprehensive analysis of agriculture negotiation dynamics and discusses some suggestions for moving this part of negotiations closer to a successful ending, including stronger consensus-building among developing countries in the region. Services are an increasingly important sector for the economic performance of developing countries. Chapter V argues that, while these countries have export market interests in many types of services, which makes them interested in the successful outcome of services negotiations under WTO, the main contribution of this negotiation is in support for domestic reform in the service sector. Trade facilitation moved from the pre-Cancun negotiation agenda to the top of the July Framework of the Doha work programme. Chapter VI explains the implications of this negotiation on Governments, businesses and regional organizations. Many developing countries have been concerned with the costs that would arise from full implementation of what has been negotiated under trade facilitation (and other areas) and some show reluctance to commit to further trade liberalization without having secured financial and other assistance in the process. Chapter VII discusses the opportunities and challenges stemming from multilateral trade liberalization and presents the instruments available at the International Monetary Fund to help members to deal with the various challenges, including surveillance/research, financial assistance, technical assistance and broader aid for trade initiatives.

The publication is available online at: <www.unescap.org/tid/publication/tipub2393.asp>.

Maximizing the Benefits of Corporate Social Responsibility for Small and Medium-Sized Enterprises Participating in Regional and Global Supply Chains

This publication (ST/ESCAP/2394) highlights the importance of corporate social responsibility (CSR). CSR comprises an increasingly well-developed set of issues and practices that are globally applicable but which vary between countries, industries and companies. One of the most important aspects of CSR relates to supply-chain management and remains relevant to the small and medium-sized enterprise (SME) sector.

There are clear benefits resulting from the implementation of CSR in supply chains and for the SME sector, in particular. Some of the main benefits are associated with image, reputation, brands, costs, risk reduction and opportunities for developing better business.

Many examples of good CSR practices abound in the region; however, the study highlights initiatives that address some of the obstacles to implementing CSR, such as the movement towards industry-wide codes of conduct, training and capacity-building initiatives, empowering women workers, developing multistakeholder initiatives, creating worker committees and promoting human rights.

While international standards linked to CSR practices have a role to play in supply chains, an interesting recent development has been the establishment of home-grown social responsibility standards. The proliferation of the standards along with competing codes of conduct frustrates the SME sector in the sense that there is a conflict between obeying the law and codes of conduct and staying in business. There is therefore a new emphasis on moving beyond such approaches and towards building relationships with suppliers based on shared values, trust and the provision of consultancy services in place of inspections. This shift is highly dependent on increasing CSR-related capacity in supply chains.

The good CSR practices in the region include initiatives concerning human rights and labour standards. Nevertheless, good practices in CSR also extend to community investment, the environment, conservation and health. Many good CSR practices are not

achieved by business working alone but with Government and civil society organizations. An emphasis on tripartite partnerships in the region is therefore likely to promote good CSR practices in the future.

Despite clear benefits for SMEs in the long run, many obstacles exist for SMEs wanting to engage in CSR. The main problems are associated with a lack of awareness of CSR issues and practices, costs of engagement, a lack of suitable trained and skilled human resources, inefficient management systems, competing codes of conduct, an overemphasis on factory inspections, a lack of transparency and poor procurement practices.

The study underscores the importance of sharing experience and knowledge in the region and to develop initiatives based on partnerships capable of developing CSR capacity. The final chapter of the study proposes a number of recommendations for various actors including ESCAP and other international organizations, Governments, enterprises and business associations and other relevant stakeholders in the region.

The publication and related materials are available online at: <www.unescap.org/tid/publication/indpub2394.asp>.

Trade Finance Infrastructure Development Handbook for Economies in Transition

The Handbook (ST/ESCAP/2374) was developed by ESCAP in cooperation with the International Trade Centre (ITC UNCTAD/WTO). It is targeted mainly at officials from ministries in charge of trade who need to acquire a basic understanding of trade finance and the importance of trade finance infrastructure development. Information provided in the Handbook is expected to help strengthen the trade finance aspects of national trade development strategies and to foster a better understanding of the issues and mechanisms that may need to be discussed with officials in charge of financial sector regulation and supervision. The Handbook may also provide a platform for financial system regulators to better understand the point of view of trade officials and traders and their needs. Selected chapters may also be of interest to officials from ministries or agencies in charge of information and communication technology, with the main responsibilities of developing e-commerce, online banking and e-payment systems.

The first chapter provides a general introduction to trade finance and trade finance infrastructure development; an overview of trade finance methods and instruments is given in chapter II. Legal issues and conventions related to the main trade finance instruments are discussed in chapter III; chapter IV is dedicated to structured trade and commodity finance. The relationship between trade finance and the macroeconomic environment is examined in chapter V and the importance of institutions for trade finance development is highlighted in chapter VI. Issues related to international payment systems and e-trade finance development are addressed in chapters VII and VIII. The Handbook concludes with a proposed trade finance infrastructure development framework based on the ITC trade finance pointers methodology and inspired by the ESCAP Trade Facilitation Framework.

This Handbook is one of the products developed under a three-year project funded through the United Nations Development Account and aimed at building the capacity of selected ESCAP member countries with economies in transition in the area of trade and investment, with a view to enabling them to respond more effectively to the challenges and

opportunities emerging from the globalization process. As part of this project, a series of eight national training workshops on trade finance infrastructure development were held in Central Asia, the South Caucasus and Mongolia. Most of the training material developed for these workshops is summarized in this Handbook and an accompanying CD-ROM.

The publication is available online in English at: <www.unescap.org/tid/publication/tipub2374.asp> and in Russian at: <www.unescap.org/tid/publication/tipub2374_rus.pdf>.

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Articles should present issues and findings in an analytical but yet non-technical manner. The *Review* emphasizes policy relevance and operational aspects of trade and investment, rather than theoretical and methodological issues.

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