Chapter 1

Important Events of the Year and Their Impacts

1.1 The Impacts of Japan's Earthquake and Radioactive Leakage on World Supply Chains

1.1.1 The Catastrophe of the Quake

The Japanese earthquake and subsequent tsunami significantly undermined the Japanese economy and caused serious damage to its supply chains. The situation was exacerbated by the radioactive leakage at the Fukushima nuclear power plant that soon followed. This nuclear accident was rated a level 7 accident, the most serious possible, and sent the world into a panic about the spread of nuclear radiation in the wake of the accident and the safety of nuclear power generation in general. As the world's third largest economy and a major supplier of high-tech parts to manufacturing and automobile industries around the world, the disaster reverberated far beyond the borders of Japan, bringing a halt in the production of some goods, delaying the delivery of parts and materials, postponing R&D of new products and technology not only in Japan but in other economies that traded with Japan, particularly its Asian trading partners.

The earthquake that hit northeast Japan on March 11th, 2011 was deemed as "the biggest earthquake in a thousand years for Japan" and "the most serious catastrophe in human history". It was a multifaceted disaster: a massive magnitude 9 earthquake, a devastating tsunami with waves as high as 14 meters, fires in coastal refineries and filling stations caused by the quake, the most serious form of nuclear accident, and more than 20,000 people dead or missing. The earthquake and tsunami destroyed roads, factories, public facilities, airports, communication lines and electricity supply all along the northeast coast of Japan. The chaos and confusion spread to Tokyo, the political and economic center of Japan, which experienced transportation gridlock, power failures in some areas, and dysfunctionality in some governmental organizations and enterprises.

The economic damage

The three eastern areas, which suffered the most serious damage—Iwate, Miyagi and Fukushima, accounted for 4 percent of Japan's total GDP. The disaster caused a loss of life that was 1.6 times higher than the Osaka-Kobe earthquake in 1995. According to estimates of the Japanese Cabinet, the World Bank and some consultancies, the direct economic loss would reach 16 trillion Japanese Yen. The Japanese Cabinet also predicted that since the nuclear radiation leakage resulted in the outage of some nuclear power plants, the ensuing electricity shortage would bring about larger economic losses in the medium to long run. The damages were expected to reach between 16 to 23 trillion Japanese Yen , corresponding to 3-5 percent of Japanese GDP in 2010. An IMF report predicted that for a short period, the Japanese GDP growth rate might decrease by 0.5 percent (Reuters, Sept. 20th, 2011).

The earthquake was later followed by flooding in Thailand and an appreciation of the Japanese Yen to record levels. These events resulted in a serious slowdown of the Japanese economy after it was showing signs of recovery from the financial crises in 2009. Recently released statistics show that

Japan has experienced a decline in its GDP of -0.9 percent and a decline in its exports of -2.7 percent.[1] Concurrently, there was a large increase in imports, particularly of fossil fuel energy to offset the power shortages arising from the shutdown of nuclear power stations. The resulting trade deficit reached 2.4927 trillion Yen. This happened to be Japan's first trade deficit since 1980[2].

The job market was adversely affected by the disaster as well. It was reported that nearly 200,000 people became unemployed or forced to change jobs. Schools and colleges were shut down and companies had difficulty recruiting new staff. Countries and regions that traded with Japan were soon affected. Tourism and retail businesses also suffered great losses in revenues. In March alone, visitors to Japan decreased by 50 percent and the sales in large shopping centers dropped by more than 20 percent.

Electricity is the lifeblood of the Japanese economy. However, following the disaster at the Fukushima nuclear power plant the Japanese government suspended the operations and conducted security checks at most of the other nuclear power stations. As a result, 90 percent of the 54 nuclear power stations in Japan were shut down in late March, which led to a serious electricity shortage (till April 2012, the operations of all nuclear reactors will be suspended pending the completion of a stress test).

The fractured Japanese industry chain

Japan's northeast was the center of its high-tech and automobile parts industries such as the automobile core components, batteries and electronics. The earthquake had severely damaged its factories. Factories faced extended delays in resuming production because of a steady stream of magnitude 4 to 5 aftershocks, radioactive contamination in the office buildings and production facilities and the long time it took to bring the situation under control at the Fukushima nuclear plant. Large automobile companies such as Toyota and Nissan immediately stopped production when the catastrophe struck. Although the automobile factories resumed operations in June, sales of domestically produced automobiles in Japan fell by 37 percent due to sporadic disruptions to production such as power failures. (Figure 1.1 and Table 1.1)

Japanese manufacturing accounts for a large portion of the world's total and is thus an important link in a larger supply chain consisting of other manufacturers from around the world. In the Tohoku area, there is a special supply chain with automobile industry (Figure 1.2).

Because Japan supplies a large proportion of the parts used in the assembly of finished products in Japan and in other countries and regions, the damage not only has affected the supply chain within Japan but also caused great losses for related industries around the world that form part of a larger supply chain. Table 1.2 shows the export destination of Japan's electronic components industry and Table 1.3 shows the effect that the earthquake had on the world exports.

The largest nuclear disaster during peaceful times

The radioactive leakage from the Fukushima nuclear power plant has resulted in the contamination of the surrounding air, soil, water, equipment, crops and transportation facilities. The contamination delayed the arrival of rescue personnel and emergency supplies. The search and rescue operations faced huge obstacles, not least the massive amount of rubble from collapsed buildings. The contamination will persist for a long time and is to severely affect the livelihoods and well-being of residents living around Fukushima area for years to come. The government initially imposed a 20-kilometer exclusion zone but expanded it to 30 kilometers (Mainichi Shimbun, October 20th, 2011). Though the government has been taking many measures to deal with the radiation, these areas are described as "Ghost Towns with Electric Lights" (Nikkei BPNET, May 10th 2011) and are likely to remain a quasi-permanent "no man's land". To date there is no clear schedule for when residents will be able to return to their homes and how the local economy can be restored to its self before the quake.

1.1.2 The Impacts on Global Energy Security and New Energy Development

Japan lacks natural resources, and it relies on imports for 90 percent of its fossil fuels. The composition of its energy consumption is as follows: natural gas (30 percent), coal (25 percent), petroleum (7 percent) and nuclear power 30 percent (Japan Energy White Paper 2010). Therefore, developing nuclear power is a major way for dealing with inadequate domestic energy resources.

Japan first displayed the use of nuclear power for civilian purposes at the 1970 Osaka World Expo.

1 *Economic Bulletin*, Feb. 13th, 2012, Cabinet Office, Government of Japan.
2 *Trade Statistics*, Feb.13th, 2012, Ministry of Finance of Japan.

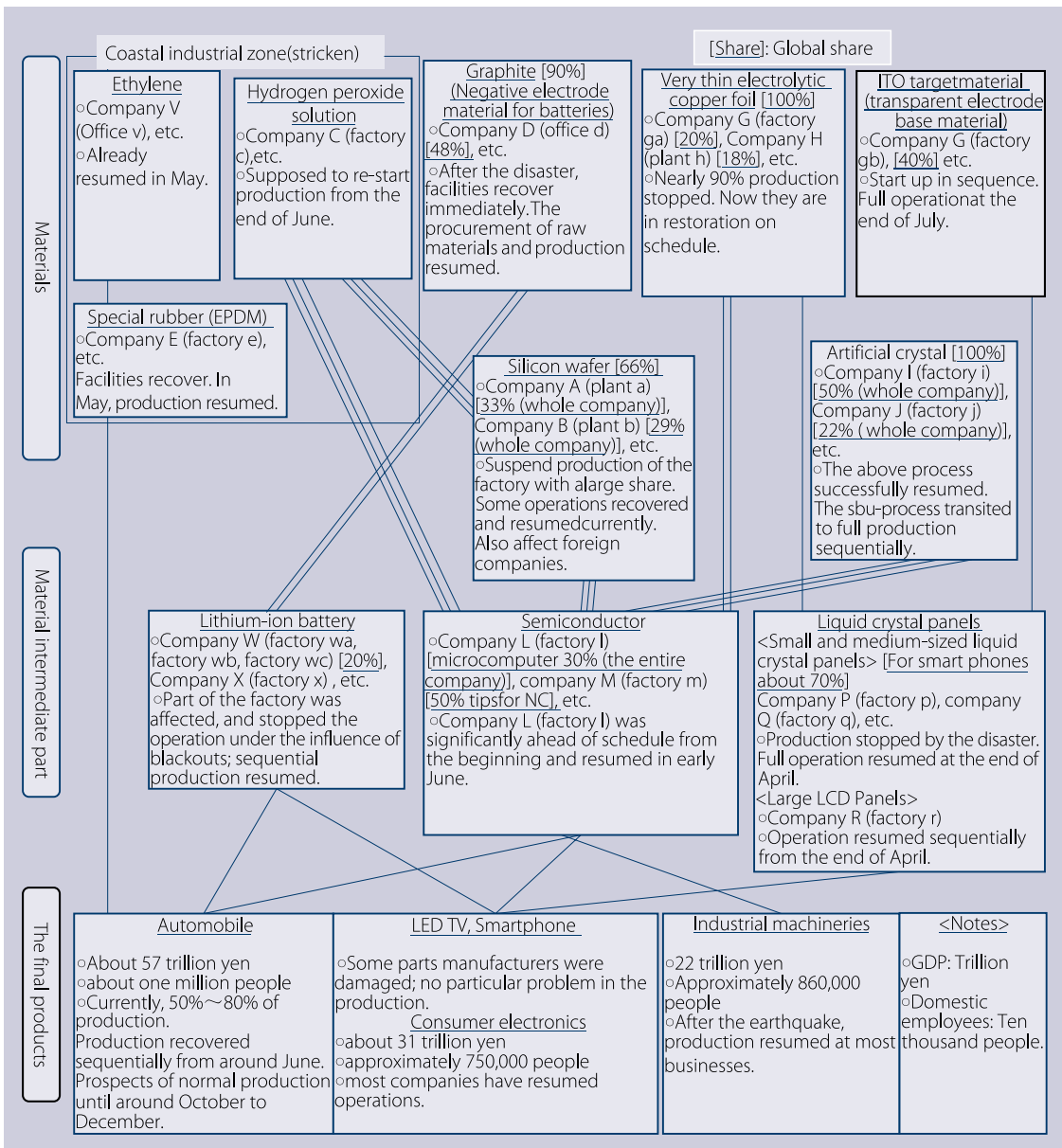

Figure 1.1 Impact of Earthquake on Japan's Industrial Chain

Sources: Sub-committee of the Basic Policy Consultant Committee for the Industrial Structure, Ministry of Economy, Trade and Industry, *Report 3 (part 3)*, issued on May 31, 2011.

Table 1.1 Changes in Japan's Exports Following the Earthquake, by Items, 2011 (%)

Items	March		April	
	Contribution Ratio to the Total	Compared to the Same Month of Previous Year	Contribution Ratio to the Total	Compared to the Same Month of Previous Year
Total volume of export	-2.3	-2.3	-12.4	-12.4
Transportation vehicles	-4.5	-19.1	-9.8	- 43.2
(automobiles)	-3.3	-27.3	-7.7	67.9
(automobile parts)	-0.2	-5.0	-0.7	-14.8
Electronic machines	-1.1	-6.1	-2.3	-12.5
(IC , integrated circuit)	-0.3	-8.6	-1.0	-24.0
Others	-0.1	-0.8	-0.5	-4.3
Food	0.0	4.7	-0.1	-22.9
Material goods	0.1	7.3	-0.2	-12.6
Mineral fuels	0.4	26.7	-0.8	-46.1
Chemical products	0.7	6.6	0.8	8.0
Manufactured Goods	0.9	6.8	0.2	1.6
General machinery	1.4	7.0	0.3	1.5

Note: Ranked by the contribution values as of March 2011.

Source: *Japan Trade Statistics*, Feb. 13th, 2012, Ministry of Finance of Japan.

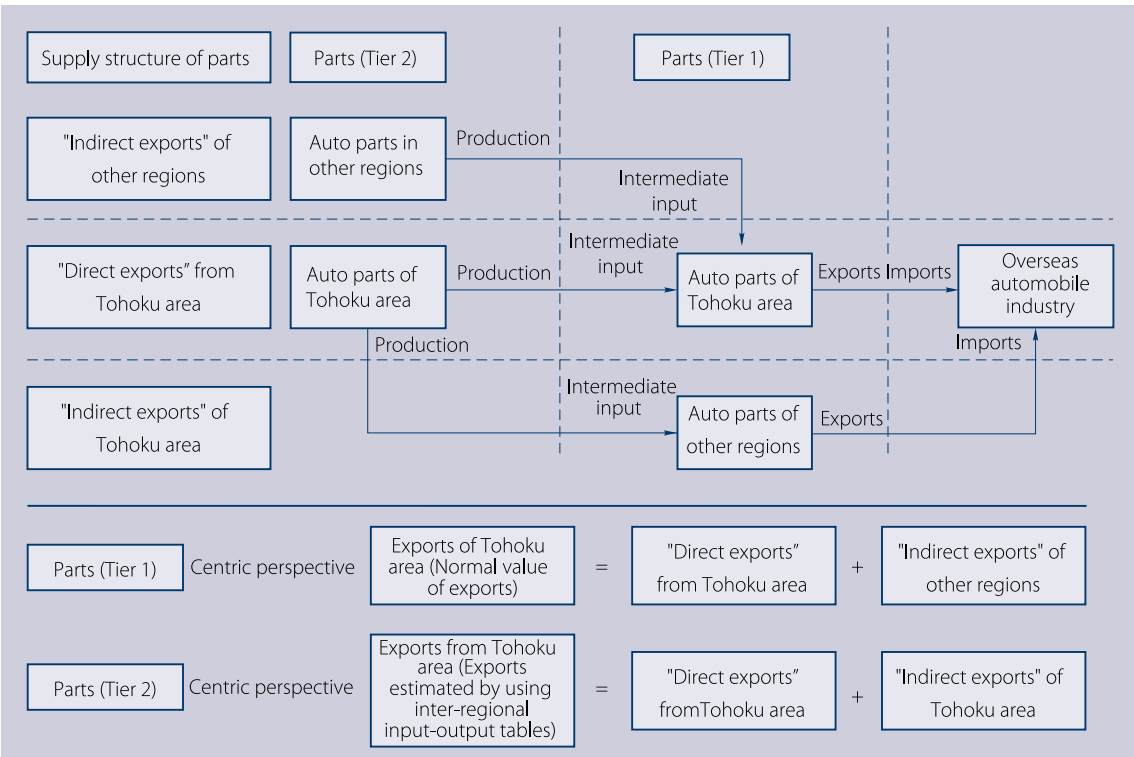

Figure 1.2 Global Supply Chain of Auto Parts Originating from the Tohoku Area

Note: "Direct export" means the share in which the production and intermediate inputs of the whole parts (both Tier1 and Tier2) are completed within the regions; "indirect exports" means the parts (Tier 2) are produced in the regions by using intermediate inputs of the parts (Tier 1) from other regions or exporting from other countries.

Source: *The Trade White Paper of Japan 2011*, Ministry of Economy, Trade and Industry.

Table 1.2 Destination of Japan's Electronic Component Exports, 2010 (USD billion; %)

Export Destination	World	NAFTA	US	China, People's Republic of	ASEAN	Emerging Economies	EU
Volume	4,152.8	307.3	268.1	1,043.4	661.3	1,722.4	307.4
Export Share	100	7.4	6.5	25.1	15.9	41.5	7.4
Export Region	Share						
Hokkaido	0.0	-	-	0.0	0.0	0.0	0.0
Tohoku	0.4	0.9	1.0	0.7	0.2	0.1	0.0
Kanto	38.5	46.2	50.3	35.3	41.3	38.7	31.4
Chubu	7.9	12.0	12.5	8.5	15.9	3.0	6.1
Kinki	44.1	37.4	32.2	42.0	32.9	50.3	53.3
Ozayaki	0.3	-	-	0.9	0.0	0.1	0.0
Shikoku	0.2	0.0	0.0	0.5	0.4	0.0	0.1
Kyushu	8.7	3.5	3.9	12.1	9.3	7.6	8.9
Okinawa	0.1	-	-	-	-	0.2	-

Source: *International Trade Statistics 2011*, The Ministry of Finance Japan.

Table 1.3 Changes in Japan's Exports after the Quake, Jan.-Apr. 2011 (%)

Countries/Regions	Jan.	Feb.	Mar.	Apr.
Global	1.4	9.0	-2.3	-12.4
China, People's Republic of	0.9	29.1	3.7	-6.8
US	6.0	2.0	-3.5	-23.3
EU27	-0.7	12.7	4.2	-10.7

Note: The values are compared to the same period of the previous year.

Source: *Japan Trade Statistics*, Feb. 13th, 2012, Ministry of Finance of Japan.

Since then, it has attached great importance to nuclear power research and development. Government, business and academia formed a "government-production-research" triumvirate and together pushed nuclear power development forward. Nuclear power was promoted as a "safe, economic and low-carbon" source of energy. By 2011, Japan had built 54 nuclear radiators that had been put into commercial operation. To achieve the goal of cutting greenhouse gas emissions by 25 percent at the end of 2020, the Japanese government formulated a new energy policy in 2010, planning to commission nine more nuclear power stations by 2020 in order to raise the ratio of electricity generated from nuclear power from the current 30% to 40%. By 2030, five more nuclear power plants were expected to come on stream and the proportion of nuclear electricity to further increase to 50% (the 2010 Basic Energy Plan by the Ministry of Economy, Trade and Industry of Japan).

The Fukushima nuclear accident destroyed the Japanese "Myth of Nuclear Power" and terminated the Japanese plan to make up for its insufficient natural resources and realize its GHG emissions

reduction goal by means of nuclear power mainly. Japan has been forced to adjust its energy policy, which in turn will make it harder to achieve its emissions reduction target which was largely dependent on the nuclear energy development.

Consequently, Japan is left with several energy policy options:

(1) Re-commission the coal-fired power stations that had been closed.

(2) Increase natural gas imports to increase gas-fired electricity generation capacity.

(3) Promote large-scale electricity conservation.

(4) Accelerate the development of energy saving technology and products

(5) Support the development of renewable energy sources such as solar, wind and hydro power.

Currently, Japan relies on importing more oil, gas and coal to avoid a domestic power shortage. However, these measures increase carbon emissions and are causing Japan to rethink its energy policy, back out of its Kyoto Protocol commitments and delay or modify its 25 percent carbon emissions reduction target. Even if it kept the 25 percent target, it simply could not be achieved under present circumstances.

1.1.3 Some Implications

- **Improving risk management.** The Japan Quake and nuclear accident happened in one country but hurt many other economies. This means that economic globalization may be a double-edge sword: it boosts economic growth but also the risk of contagion between economies when things go wrong. We have to find a resolution to maximize the outcome of growth and trade while minimizing the risk.
- **Dispersion of supply chains.** Many economies including Japan are thinking about shifting production to more countries and regions in order to avoid an over-concentration of production in the supply chain. Years ago, some Japanese manufacturers shifted their production to East Asian economies like Thailand and India due to a fear of the "China risk". North American and European manufacturers followed suit. However, the shift of the manufacturing base does not mean that all risk or damage can be avoided. The effect of the recent flooding in Thailand on the Japanese economy underscores the fact that there is no absolute safety in the globalized economic system.
- **A concern about industrial hollowing.** In dealing with the supply chain damage and climate change issues, Japan began to think about shifting more manufacturing and carbon intensive industries to other economies. However, this may cause a serious problem of industrial hollowing and lessen Japan's importance as a manufacturing center of the world. An article published pointed out that for decades, Japan used the combination of manufacturing might and an export-oriented trade policy to flood markets around the world with its cars and consumer electronics and semiconductors. However, the world's greatest export engine is running out of steam and it may mean the end of an era of Japanese dominance in the export market (*Wall Street Journal*, January 24th, 2012).
- **The gap between the Japanese and Chinese economies would widen.** In early 2011, it was reported in the media that calculated in current USD, the GDP of China reached 5,878.4 billion USD while that of Japan was 5,474 billion USD, 404.4 billion USD less than China. China thus became the world's second largest economy after the United States. Since the Japanese economy is now heavily burdened with a huge debt, expensive disaster compensation, and long-run subsidies for the disaster areas, the Japanese economy might remain lackluster for an extended period of time. Given the 7 percent growth rate suggested by the "12th Five-Year Plan for the National Economic and Social Development", there is a good reason to believe that the size differential between the Japanese and Chinese economies will widen further in the future.

1.1.4 Conclusion

In the era of globalization and liberalization, no countries can entirely escape the risk of supply chain disruptions and other economic problems. In order to preserve the health of the Asian economies, countries and regions should coordinate their policies and take unified actions to resolve regional issues and external shocks.

1.2 The Middle East Upheaval and Its Impact on the Asian Economies

The upheaval in several Arab countries since the start of 2011 was an important event in the year 2011. While many analysts have attributed the cause

of the unrest to the various social problems such as unemployment of the young people, government corruption, the stagnation of the economy and the high population growth. This section of the report will focus on the consequences of the events on the countries that were hit by the unrest and the Asian economies in the short, medium and long run.

1.2.1 The Effects on the Arab Countries

It must be expected that there will be short run negative effects of the unrest on the Arab countries themselves. Simply, the uncertainty associated with strikes and street demonstrations hurts the markets and makes investors hesitant to invest, and they even may seek a safer place for their investment. Even with the going political reforms in Tunisia, Egypt and Libya the pace of the political and economic improvements was slower than the pace of their people's expectations. The IMF (2011b) predicted a modest improvement in the Egyptian economy to occur by the end of the year 2012, since "…. the medium-term prospects are positive as the economy's underlying potential remains intact". Of course this statement is based on the ability of the economy to regain the trust of both domestic and foreign investors. The World Bank expectations were not far from this, though less optimistic. They extended the point of improvement to 2013/2014.

Against these mentioned predictions for the medium run, there are facts of the immediate or the short run. Table 1.4 shows that the growth rate of real GDP had dropped sharply in 2011. Between 2010 and 2011, the growth rate of real GDP dropped from 3.1 percent to 0 percent in Tunisia, from 5.1 percent to 1.2 percent in Egypt and it turned to a negative growth of -2.5 percent and -2 percent in Yemen and Syria, respectively. The per capita GDP stagnated in Egypt and Tunisia, and fell in Yemen and Syria for the same period. The inflation rate had also worsened, reaching 20 percent in Yemen and 13.3 percent in Egypt. Even in the countries of government price control, prices had increased and the inflation rate rose between 2010 and 2011 from 2.5 percent to 6.1 percent in Libya and from 4.4 percent to 7 percent in Syria.

Table 1.4 Basic Data on Some Arab Countries, 2009-2011

Country	Year	GDP (USD billion)	Economic Growth (%)	Per Capita GDP (USD)	Poverty Rate (%)	Unemployment Rate (%)	Income Distribution		Inflation Rate (%)
							Share of Lowest 10% of Population in National Income	Share of Highest 10% of Population in National Income	
Tunisia	2009	98.63	3.1	9,500	3.8		2.3	31.5	
	2010	101.7	3.1	9,600		13			4.4
	2011	101.7	0	9,500		16			3.7
Egypt	2009	484.3	4.7	6,300	20		3.9	27.6	
	2010	509.3	5.1	6,500		9			11.1
	2011	515.4	1.2	6,500		12.2			13.3
Libya	2009	88.94	-2.3	13,800		30			
	2010	92.62	4.2	14,100					2.5
	2011								6.1
Yemen	2009	60.08	3.9	2,500	45.2	35	2.9	30.8	
	2010	64.87	8	2,700					11.2
	2011	63.24	-2.5	2,500					20
Syria	2009	106.4	6	5,100	11.9				
	2010	109.9	3.2	5,200		8.3			4.4
	2011	107.6	-2	5,100		8.1			7

Note: * Poverty Rate = % of population under poverty line

Source: The World Fact Book, USA Central Intelligence Agency.
https://www.cia.gov/library/publications/the-world-factbook/

1.2.2 The Effect on the Asian Economies

The Asian economies have close and strong economic relations with the Middle Eastern countries, especially the Arab countries. Historically, the Arab world and Asia have a legacy of trade ties dating back to caravans, loaded with textiles and spices and crossing the desert on the so-called Silk Road, and to Gulf traders sailing to the Indian Ocean. Today a new Silk Road goes from the ports of Shanghai, Hong Kong (SAR), and Singapore to the Gulf and from the airports of Dubai and Riyadh back to the Asian cities. Mutual benefits of trade are attractive for both sides. Arab investors are looking for profitable opportunities for their petrodollars. In return, the Asians are seeking energy supplies and some energy-intensive manufactured goods such as aluminum, and also seeking markets for the goods they produce. Cars, computers, and other manufactures are from China, Japan and Republic of Korea, and food products are from India and other Asian economies.

According to Reed et al. (2008) trade between the two regions has been expanding (on the average) at 30 percent annually. Since 2006, Asia has been the largest trading partner of the countries of the Gulf Cooperation Council (GCC). In 2007 Asia accounted for 55 percent of the GCC's total trade of USD758 billion. It is estimated that the Gulf countries have invested USD60 billion in Asia from 2002 to 2006. So far, investment flows haven't kept up with trade ties, but that's likely to change over time. The foreign direct investment from the Gulf to Asia amounts to 11 percent of the foreign investment of the Gulf, and is expected to rise to 20 percent in 2020. Besides the GCC countries, Egypt and other Arab states are pushing Asian economies for investment that creates jobs. For example, China's exports to Egypt have more than quadrupled since 2003, to USD4.7 billion in 2007—roughly 18 times the value of Egyptian exports to China.

Besides what was mentioned, Bremner and Shameen (2007) note that for Southeast Asian financial centers such as Malaysia's Kuala Lumpur and Singapore, the evolution of Islamic finance represents a huge opportunity for attracting investments from the Muslim World, including of course investments from the Gulf petrodollars. Islamic financial services now comprise a roughly USD1 trillion market worldwide. According to credit rating agency Standard & Poor's, Islamic banking assets already account for 12.2 percent of total banking assets in Malaysia. The government there has said it aims to have 20 percent of all banking assets in the country under Islamic banks by 2010.

Table 1.5 and Table 1.6 show the recent figures of trade between the developing Asian economies and the Middle Eastern economies. It can be found that the total trade of Developing Asia with the Middle East was about 8 percent of the total trade of Developing Asia with the world in each of the years of

Table 1.5 Developing Asia's Exports to Its Partner Economies, 2009-Sept.2011 (USD, billion)

Year	2009	2010	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Apr.	2011 May	2011 Jun.	2011 Jul.	2011 Aug.	2011 Sept.
The World Fact Book	**1,962.27**	**2,560.05**	**716.02**	**692.77**	**779.56**	**841.21**	**251.69**	**255.65**	**272.22**	**280.22**	**284.01**	**276.97**
Advanced Economies	1,302.20	1,663.63	461.26	441.26	496.17	531.62	162.64	162.58	170.96	177.40	179.06	175.17
Emerging and Developing Economies	643.74	882.50	251.53	248.73	278.47	305.30	87.70	91.58	99.19	101.06	103.59	100.65
Europe	84.97	115.64	32.86	30.84	37.79	41.02	12.28	12.41	13.10	13.72	13.86	13.43
Middle East and North Africa	124.50	153.40	41.51	45.34	45.54	47.52	14.31	14.91	16.31	16.05	15.81	15.67
Sub-Saharan Africa	51.54	68.12	19.70	18.64	21.52	22.90	6.85	6.84	7.84	7.69	7.64	7.57
Western Hemisphere	70.59	115.49	32.06	30.24	38.26	43.42	11.62	13.43	13.21	14.25	15.12	14.05

Source: Direction of Trade Statistics (DOTS).
Data extracted from IMF Data Warehouse on: 1/28/2012 8:29:23 PM

Table 1.6 Developing Asia's Imports from Its Partner Economies, 2009-Sept.2011 (USD, billion)

	2009	2010	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Apr.	2011 May	2011 Jun.	2011 Jul.	2011 Aug.	2011 Sept.
The World Fact Book	**1,840.59**	**2,510.29**	**685.70**	**723.88**	**789.81**	**837.41**	**262.77**	**262.05**	**264.99**	**271.59**	**282.29**	**283.53**
Advanced Economies	1,032.07	1,365.17	370.46	382.52	413.79	443.04	136.46	136.52	140.81	142.85	148.75	151.44
Emerging and Developing Economies	713.93	1,009.47	274.42	295.81	332.17	348.86	110.41	111.04	110.72	114.72	118.20	115.94
Europe	58.84	77.65	20.07	24.15	28.10	27.59	9.46	9.59	9.05	8.41	9.58	9.59
Middle East and North Africa	178.61	257.54	70.95	80.02	89.87	87.05	31.81	29.14	28.93	29.89	28.85	28.31
Sub-Saharan Africa	53.70	81.16	19.64	22.17	25.62	25.01	8.78	9.44	7.40	7.92	8.79	8.30
Western Hemisphere	83.12	118.95	32.15	31.92	35.44	44.64	10.60	12.50	12.34	14.68	14.95	15.02

Source: Direction of Trade Statistics (DOTS).

Data extracted from IMF Data Warehouse on: 1/28/2012 8:29:23 PM

2009 and 2010. This is a relatively low figure compared with the figures of trade with other groups of economies such as the emerging economies or the advanced economies. Being low may give the impression that Asian economies are less likely to be influenced by the current events in the Middle East. Given that one significant item of Asian imports is oil, this may be of concern to the Developing Asian economies, as far as the anticipated negative effects of the upheavals are concerned. Although the oil producing Gulf countries are mostly stable and away from the current events, some analysts raise the fear that the atmosphere of instability and uncertainty may affect the oil supplies and hence the oil prices.

Also Table 1.5 and Table 1.6 demonstrate the imports and exports of the first three quarters of 2011. Adding up and calculating on an annual basis, one can find that the estimate of the exports of Developing Asia to the Middle East in 2011 is USD184.5 billion (compared with USD153.4 billion in 2010), and for the imports the estimated value for 2011 is USD342.5 billion (compared with USD257.54 billion in 2010). Both exports and imports went up in 2011 compared to 2010.

The above analysis tends to support the conclusion that trade is not negatively affected by the upheavals until now. In order to complete this analysis, a survey consisting of ten questions was conducted. The ten questions were about the expected impact of the unrest on the following five variables; once for the short run effect, and then for the medium and long run effect. We tried to be more specific and asked about the effects on China and developing East Asian economies. The five variables included in the questionnaire are:

(1) Oil exports to China and East Asia (we refer to them as "the region" hereafter);

(2) Economic growth of the region;

(3) Indirect investment (investment in the stock market) in the region;

(4) Non-oil merchandise imports from the region;

(5) Non-oil merchandise exports to the region.

The questionnaire was distributed on a sample of 38 business and economic experts. The results are given in Table 1.7 and summarized as below:

(1) For the oil exports to the region, 42 percent of the respondents expected a negative effect in the short run and 32 percent expected no effect and only 11 percent expected a positive effect. In contrast, 45 percent expected a positive effect in the medium and long run, and only 11 percent expected a negative effect.

(2) For the economic growth of the region, the experts expected a significant positive impact but only in the medium and long run. It seems that they evaluated the expected improvement in the business environment in the Middle East, which

Table 1.7 Effect of the Upheavals on the Economies of China and East Asia (%)

Item	Positive	Negative	No Effect	No Answer
Short-run effect on oil exports to the "region"	11	42	32	15
Medium- and long-run effect on oil exports to the "region"	45	11	26	18
Short-run effect on the economic growth of the "region"	29	26	29	16
Medium- and long-run effect on the economic growth of the "region"	53	18	13	16
Short-run effect on indirect Investment in the "region"	34	21	29	16
Medium- and long-run effect on indirect investment in the "region"	47	18	18	17
Short-run effect on non-oil merchandise imports from the "region"	29	37	18	16

must take a longer time than just changing the political regimes.

(3) The experts were cautious about the effect of the current events on the investments in the stock markets of the "region". They expected negative effects in the short, medium and long run. They seem to consider the long lasting effects on the psychology of the investors.

(4) Finally, the experts expected the negative effects to be relatively higher in the short run and lower in the medium and long run on the non-oil merchandise imports and exports of the "region".

1.2.3 Conclusions

The consequences of the unrest are still going on in the five countries of Tunisia, Egypt, Libya, Yemen and Syria. In spite of the changes that have occurred recently in the first three countries, the economic conditions are still critical. Given the problems in these countries are long-term in nature, it may require three to five years to complete. If we add the geopolitical importance of the Middle East in general and the five countries in particular, one may safely expect the improvement to be sharp, once it starts. Both the indicators and the expectations that we have surveyed above support this conclusion.

1.3 The Debt Crisis in the US and Europe

1.3.1 Introduction

Since 2007 news on the economic and financial crisis has captured top positions in media around the world. The sub-prime crisis in the US had been in the focus of the news coverage in the first wave of the global crunch. In 2008, the spill over to Europe as well as the similar incidence of a bursting real estate bubble in Spain shifted the interest to the European Union (EU). In the wake of the Lehman Brothers collapse, Ireland became the first EU Member State in fall 2008 that seemed to be heavily exposed to the US banking crisis. The sudden crash of six domestic banks and one foreign-owned bank acquired Europe-wide attention. In order to avoid panic reactions the government guaranteed all deposits and most debt liabilities of its banks. The government's injection of money into the banking sector increased the public debt from 22.8 percent of GDP in 2006 to 99 percent of GDP in 2011. The nationalization of Anglo Irish Bank in January 2009 made new waves in politics and media. Then, in the middle of 2009, the shocking message of Greek's government that the estimation of the fiscal deficit in 2009/2010 has to be corrected from 6 percent of GDP to 12 percent of GDP (and later to 14.5 percent) filled day by day the headlines of the media. The hectic diplomacy in and outside the EU delivered a constant flow of messages to the financial markets in the EU Member States resulting in increased uncertainty which in turn heated up speculation. The downgrading of Greek's debt to "junk" status by three leading US rating agencies further fuelled the angst of a national bankruptcy. In spring 2010, Portugal became the third country in the EU to be threatened by speculative attacks in its financial markets. The long-lasting economic stagnation and

the dependence on foreign debt made this country vulnerable to external shocks. Vain endeavors of the government to enforce austerity programs worsened the debt crisis. Shortly after Portugal's credit rating was downgraded at near junk-status the EU and the IMF agreed on a bailout package. At the end of 2011 the sovereign debt crisis seemed to move from Europe's periphery to its core. Italy, the third largest economy in the Euro Area, had to convince investors that it was able to manage its budget deficit which came under the pressure of USD2.6 trillion sovereign debt. The borrowing rate nearly doubled from October to November 2011. Fears of a debt spiral that would drive Italy into bankruptcy forced the new government to act immediately by packing a drastic austerity program worth 20 billion Euro. As Italy is too big for bail out in case of default, the whole Euro Area might be drawn into the vortex. On January 13, 2012, one US rating agency downgraded France and eight other Euro Area countries.

Numerous high level informal and formal meetings of the heads of EU Member States' governments, finance ministers, European Commission and IMF representatives, attracted attention of non-EU countries' governments as well as of media all over the world. The brief characterization of the countries at risk shows that their crisis history differs in origin and course. The outcome is the same, namely a sovereign debt crisis. The common peg between these countries is the Euro. Therefore, it is obvious that the national crises merged into the crisis of the Euro Area, last but not least because the other Euro Area members—under the lead of Germany and France—are expected to demonstrate solidarity. The leaders of both countries set as their common priority a sustainable solution for the continuation of the common currency.

When taking a closer look at the leading newspapers, journals, TV stations around the globe, it might be surprised to see that the coverage of the Euro Area crisis was outpacing by far the US debt crisis. Millions of postings in the internet confirm this ranking. This holds also for articles in academic journals, be it in economics or political science: The Euro Area crisis is attracting much more attention and controversial discussion than the US debt crisis. Without doubt, the former banking crisis developed both in the US and in the Euro Area into a sovereign debt crisis. But whereas the US does not seem to worry about long-term negative effects on its currency, the Euro Area members have to fear firstly internal contagion effects and secondly the collapse of the Euro as the symbol of integration of unequal countries.

1.3.2 The Emergence of the Sovereign Debt Crisis: Selected Indicators

Since 2007 the fiscal balance has worsened in the US and most EU Member States (Figure 1.3). The global recession called in many economies for implementing fiscal stimulus packages. The drastic fiscal slump in Greece, Portugal, Ireland and Spain required external funding which contributed to a significant increase in the government debt (Figure 1.4). Bailouts did not solve the crisis situation. The four countries' performance regarding the fiscal consolidation did not lead to an easing of tensions. Higher credit default risks increased the interest rates of new government loans especially for Greece, Ireland, Portugal, Spain, and since the end of 2011 also for Italy (Figure 1.5). There is clear evidence for a positive correlation between the primary deficit ratio and the spread between long and short-term rates. For the EU, the correlation had been 0.25 for the time period 1970-2011 and 0.88 for 2001-2011 (Polito and Wickens, 2011, p. 605). In contrast, this correlation had remained relatively stable in the United States (0.56 for the period 1970-2011 and 0.52 for 2001-2011). With the exception of Greece, the tightening policies seem to contribute to wining back the confidence of the financial markets. Returning to positive growth rates (except Ireland and Portugal) was another sign of a cautious recovery (Figure 1.6). Anyhow, there were still risks that burden the economies of the debt-ridden countries: increasing interest expenditures (Figure 1.7), high unemployment rates (Figure 1.8), current account deficits (Figure 1.9). At the beginning of February 2012, the worst case scenario of a credit default of Greece and a break-up of the Euro Area had not yet averted. With respect to Greece, controversial opinions among the Euro Area members about the most promising next recovery steps may delay the easing of stress.

1.3.3 From Financial "Turmoil" to Financial Crisis and Sovereign Debt Crisis

Both the EU and the US have experienced a serious crisis in the financial sector which has led to a long lasting recession in their economies.

In the US, the sub-prime mortgage crisis disrupted the global real estate and credit boom.

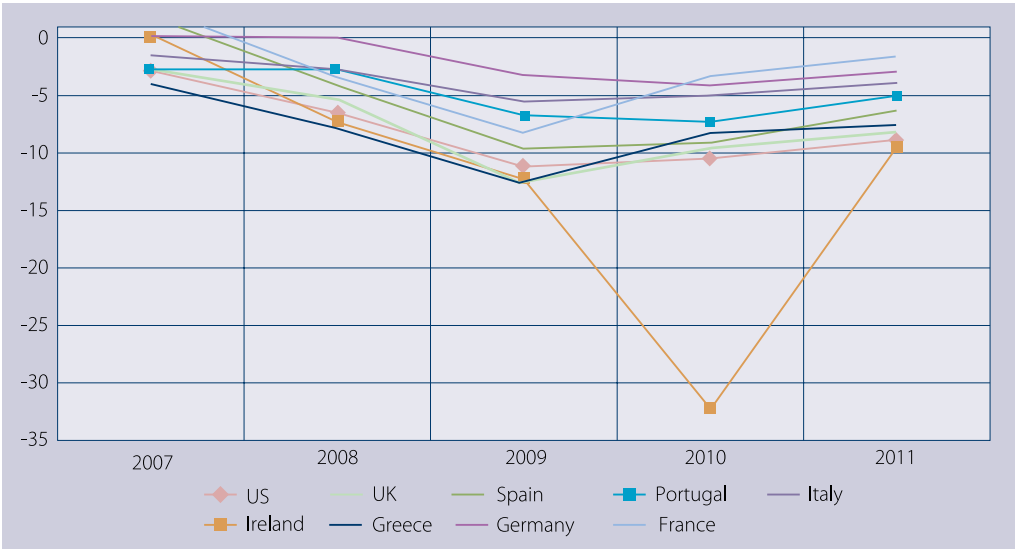

Figure 1.3 Primary Deficit-GDP Ratio, Selected Countries, 2007-2011[1]

Source: Own calculations on OECD Economic Outlook data.

1 According to the OECD the deficit for Ireland in 2010 results from the banking restructuring strategy aiming at transferring non-performing loans to government backed entities, and then injecting public funds in undercapitalised banks (OECD, 2010).

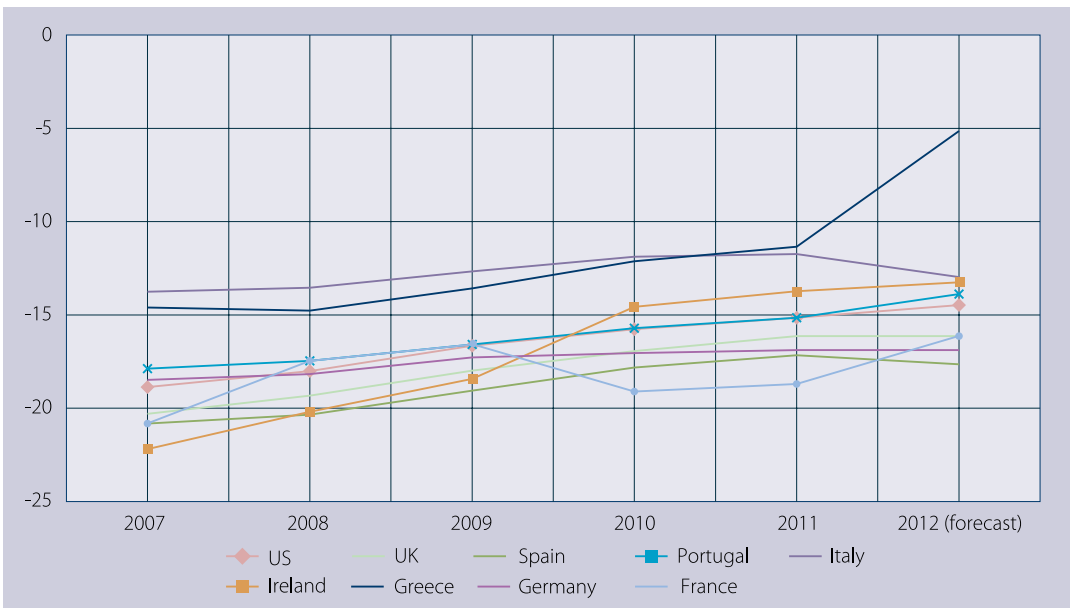

Figure 1.4 Government Debt-GDP Ratio for Selected Countries, 2007-2011

Source: Own calculations on OECD Economic Outlook data. Forecast 2012 (except the US): European Commission, 2011a. USA: www.usgovernmentspending.com/federal_debt_chart.html

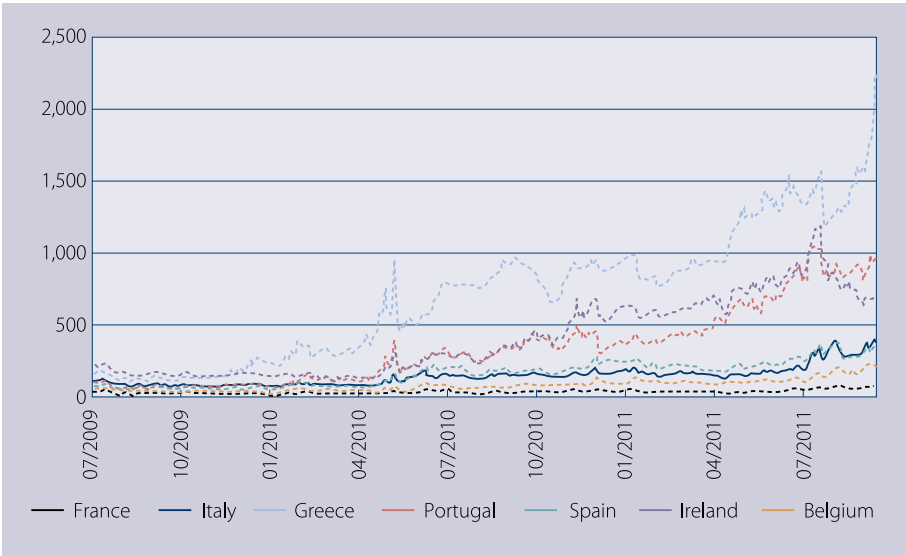

Figure 1.5 Spreads (in Basis Points) of 10-Year Euro Area Government Bond Yields to German Bonds, 2009-2011

Source: Arroyo, 2011, p. 15.

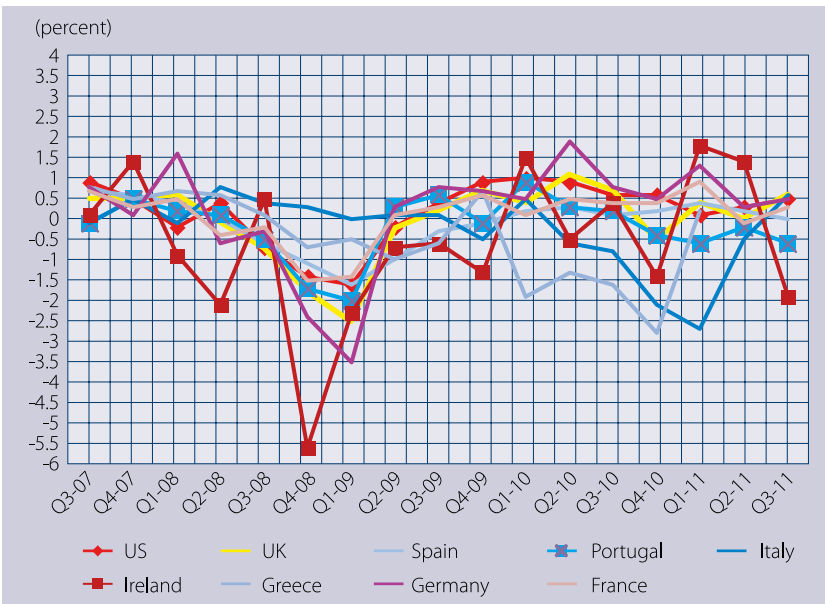

Figure 1.6 Quarterly GDP, Change over Previous Quarter, Selected Countries, Q3-2007—Q3-2011

Source: Own calculations on OECD National Accounts Statistics.

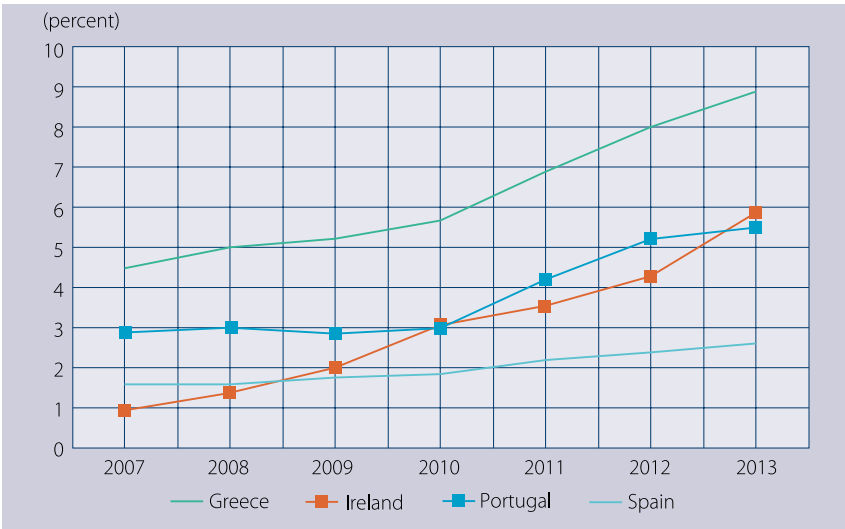

Figure 1.7 Interest Expenditure, General Government (as percentage of GDP), Selected Countries, 2007-2013

Source: Own calculation on European Commission, 2011a. 2011-2013: Forecast.

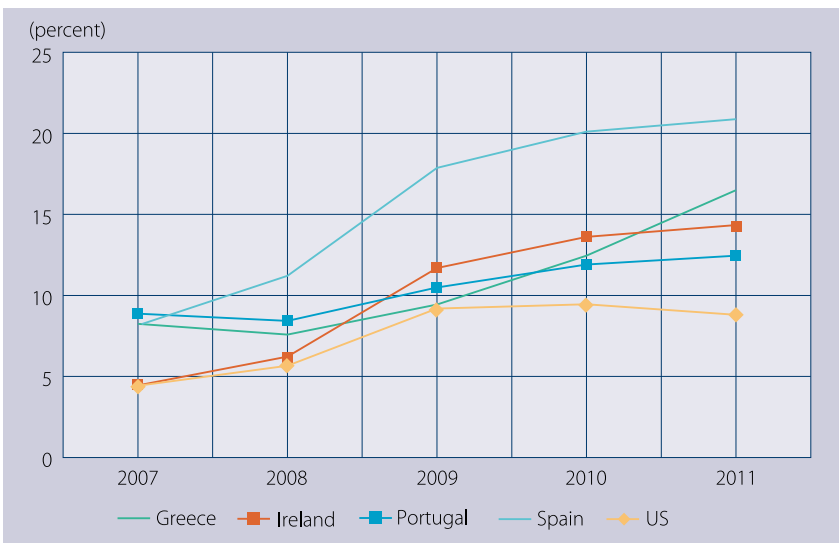

Figure 1.8 Unemployment Rate (number of unemployed as a percentage of total labor force), Selected Countries, 2007-2011

Source: Own calculation on European Commission, 2011a; the US: United States Department of Labor, http://data.bls.gov/cgi-bin/surveymost.

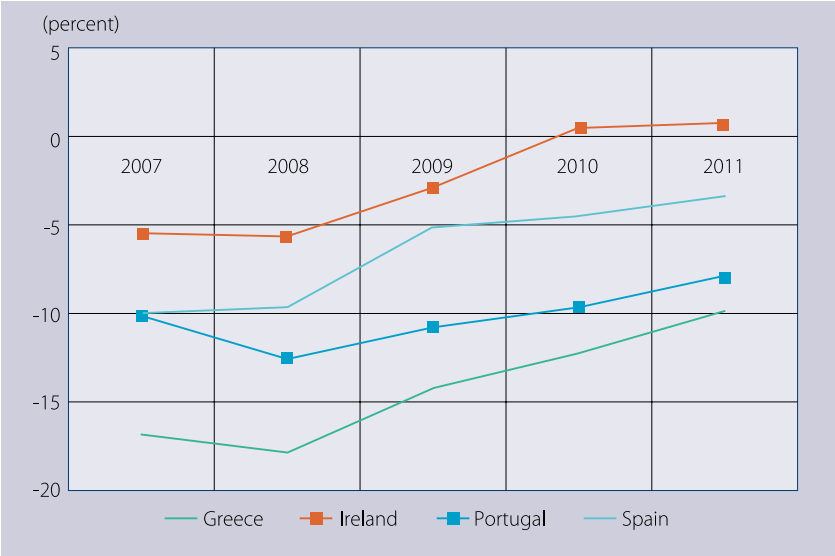

Figure 1.9 Current Account Balance (as percentage of GDP), Selected Countries, 2007-2011

Source: Own calculation on European Commission, 2011a.

By increasing the interest rate since 2004 the US Federal Reserve (FED) aimed at restricting the excessive lending. The sub-prime share of mortgage origins jumped from 7.5 percent to 20 percent between 2004 and 2007 (Harvard University, 2008, p. 4). In the middle of 2007 the demand for mortgages suddenly dropped off, resulting in a dramatic reduction of property prices. A large number of borrowers were hit by increasing interest rates and decreasing property prices. They had no option but to default on their payments and foreclose their loans. Lender's bad loans increased dramatically and forced many banks into bankruptcy. The slow-down in the real estate market influenced all associated industries and finally spread out to the whole US economy. Many economists identified the relaxed bank regulations as well as the deregulation of the financial markets as the cause of the sub-prime crisis (Chang, 2010, p. 7). The vulnerability of the US financial markets increased with the long-term increase of the private debt from 123 percent of GDP at the beginning of the 1980s to 290 percent of GDP in the fall of 2008. US home mortgage debt reached USD10.5 trillion. Financial innovations with ever increasing risk exposure profiles led to the crisis. Last but not least, the shadow banking system was accounted for as an important enabler of the crisis (Krugman, 2009).

The downfall of Lehman Brothers on September 15, 2008 changed the latest banking crisis into a global financial crisis. Because of the globally integrated financial markets, banks in Europe and Asia got instantly caught in this downward maelstrom. Central banks, primarily the FED and the European Central Bank (ECB), and governments reacted with money injections into the banking sector, bailouts and fiscal stimulus packages (Figure 1.10). Up to now, 2009 proved to be the annum horribilis. With the exception of few emerging economies growth dropped down to negative rates. The US economy experienced its sharpest decline in Q4-2008 (minus 6.8 percent change in GDP compared to Q3-2008), the Euro Area reached the bottom in Q1-2009 (minus 2.5 percent). World trade decreased and showed for the first time since 2001 a negative growth rate of 12 percent. Merchandise trade of the US and the EU declined by 14.0 percent and 14.5 percent, respectively.

Independent from the US sub-prime crisis Spain experienced a similar real estate and credit crunch in 2008 (Harrington, 2011). However, the causes are not comparable with those in the US. In order to enter the Euro Area, Spain had to fulfil the convergence criteria of the Maastricht Treaty. The government reduced the budget deficit and achieved the first surplus in 2005. From 1998-2007

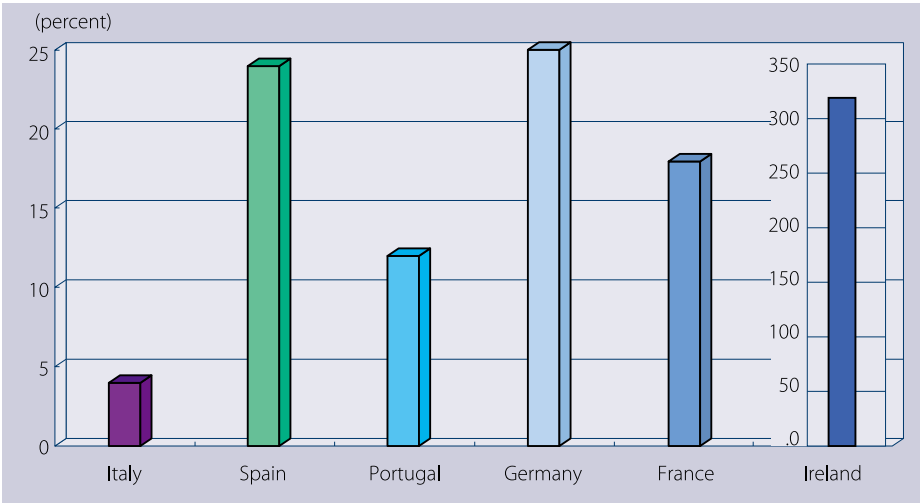

Figure 1.10 Government Support Measures to Financial Institutions, October 2008 - May 2010 (in percentage of 2008 GDP)

Source: Alter and Schüler, 2012, p. 8.

the average deficit ratios had been significantly lower than the average of the Euro Area. The public net debt ratio declined from 57 percent of GDP in 1998 to 26.5 percent of GDP in 2007. The Central Bank reduced the long-term interest rates to meet the respective Maastricht criteria. The favourable borrowing conditions motivated more and more young people to take a mortgage to purchase homes. Furthermore, the demand for housing increased because of immigration. In the years 2000-2007, approximately 730,000 people a year immigrated to Spain (Bräuninger and Majowski, 2011, p. 2). In this period of time Spain's population grew from 40 million to 45 million (Harrington, 2011, p. 6). Prices of houses increased considerably and demand for loans as well. The average level of household debt tripled since the beginning of this century. The intransparent structure of the Spanish banking system[1] masked up the growing lending to the real estate market even after the beginning of the crisis in 2007. The gap between increasing supply and decreasing demand in the real estate market after 2007 resulted in a sharp decline of housing prices, bankruptcy of unlisted regional saving and loan banks and construction firms, growing unemployment in the construction industry, increasing government expenditures on unemployment benefits, decreasing tax revenue, and finally the reversal of the budget surplus of 2 percent of GDP in 2006 into a deficit of 8.5 percent of GDP in 2010. Beginning in 2010, the run on the banks forced the government to bail out regional savings and loan banks. Estimations on bad loans range from 40 billion Euros to more than 100 billion Euros. The housing market was estimated to reach balance of supply and demand not before 2017. This negative perspective put further pressure on housing prices. Banks were forced to offer huge discounts for selling their real estate assets.

Similar to Spain, Ireland had been one of the above-average performing economies in the EU. From 1998—2006 the pre-crisis public deficits corresponded closely to the respective average ratios of the Euro Area. Similar to Spain, during this period Ireland's public debt/GDP ratios declined. But its competitiveness was built on fragile, while wage-sensitive, exports. Funding of infrastructure projects by EU's Cohesion Policy, increasing wages, tax reductions and a sharp decline of interest rates after joining the Euro Area fuelled the construction and housing sector and resulted in a property and construction bubble (Honohan, 2009). Despite warnings with respect to the sustainability of Ireland's growth, banks continued to ease loan conditions due to weak bank regulation. They

1 It consists of approximately 24,000 branches of "cajas" (regional savings and loan banks) with a market share of circa 50 percent and few large banks.

funded the increasing loan demand by extensive foreign borrowing. The US sub-prime crisis fully struck Ireland's banks, especially the Anglo Irish Bank. The government decided to rescue this bank and to introduce a system-wide bank guarantee. The burst of the bubble instantly led to a sharp fall in tax revenue. Spending could not have been reduced at the same speed. Therefore, the budget deficit exploded in 2008.

In December 2009 the IMF stated that Portugal's exposure to the global economic crisis was enhanced by its pre-existing, home-grown problems such as low productivity growth, large gap in competitiveness, and high levels of debt (IMF, 2009). In contrast to Spain, Ireland and Greece, Portugal's banking sector did not experience similar bank crashes, predominantly because of the absence of a property bubble and stricter bank regulations. The increasing public deficit ratios between 1998 and 2006 raised the susceptibility towards economic shocks. The public debt/GDP ratio also increased but till 2007 remained under the Maastricht criteria threshold of 60 percent. It has to be noted that the debt burden ratios turned out to be higher than in Spain, Ireland, and even Greece.

In contrast to Spain and Ireland, the crisis in Greece has its main roots in long-term deficits in its budget and current account. Compared to the aforementioned Euro Area members, Greece experienced by far the highest increase in and the highest ratios of its budget deficit between 1998 and 2006. Since the introduction of the Euro in 2001 the budget deficit averaged 5 percent of GDP per year until 2008. During the same period of time the Euro Area average amounted to 2 percent of GDP only. The public debt/GDP ratio climbed between 1998 and 2006 from 72 percent to 80 percent. The former government managed to hide the total amount of the budget deficit in order to fulfil the Maastricht convergence criteria for joining the Euro Area. Statistical revisions in the negative direction undermined the confidence of actors in financial markets. "The roots of Greece's fiscal calamity lie in prolonged deficit spending, economic mismanagement, government misreporting, and tax evasion" (Sandoval et al., 2011, p. 4). According to the former Prime Minister George Papandreou, inefficient allocation of money resulted from corruption, cronyism and clientalistic politics (Williams, 2010). The current account deficits averaged 9 percent per year compared to the Euro Area average of 1 percent.

Italy's late appearance on the map of severely crisis-stricken European countries is obviously due to the pure size of its economy. Finally, the exposure to the global economic crisis dismantled the long-standing structural weaknesses (IMF, 2010). Low productivity, inefficient and expensive public services—to a large extent responsible for the high deficit -, out-dated infrastructure and rigid labour markets were the main shortcomings of Italy's economy. Up to now, the banking sector did not need substantial government capital injections. Low confidence in the crisis management forced the former Prime Minister Silvio Berlusconi to resign. At the beginning of December 2011, the new Prime Minister Mario Monti quickly worked out an austerity package of Euro 30 billion that had been accepted by Italy's Senate on December 21, 2011.

When comparing the pre-crisis developments there is ample evidence that the crises in Spain and Ireland emerged from the housing and banking sectors, whereas the crises in Portugal, Greece and Italy had their origins in the public sector (Stein, 2011). By looking at the pre-crisis performance of the Euro Area it has to be noted that there is no overall evidence for the convergence of the main macroeconomic indicators. Quite the contrary, "At present, the EU is much further from approaching an optimum currency area than it was at the time of implementation of EMU" (Kyriakopoulos, 2011, p. 96). This leads to the question of Euro's role as internal and external catalyst: does the Euro facilitate or even promote the crisis rollover within the Euro Area and/or from the US to the Euro Area? "Some of the countries that adopted the euro in 1999 (*first of all, Greece is supposed to be meant; author's note*) would clearly have lower unemployment, a smaller national debt, a more competitive international position, and better prospect for the future if they had never been part of the European Monetary Union" (Feldstein, 2011, p. 15). It is argued that the European Monetary Union (EMU)[1] is exposed to different kinds of contagion risks. Based on a distress dependence analysis the results suggest "the other countries in the eurozone periphery and countries in emerging Europe were more vulnerable to contagion from Greece and Ireland during the peak of the crisis than core European countries, despite

1 The EMU includes the European Central Bank (ECB), the European System of Central Banks (ESCB), the Euro system (ECB plus Central Banks of those countries that have adopted the Euro), and the Euro Area.

larger bank sector exposures of the latter countries in the region. Furthermore, Ireland was considered more contagious than Greece" (Melander et al., 2011, p. 359). This could be explained by Irish banks' stronger links to other European countries.

The role of the Euro in the pre-crisis years was critically evaluated by a number of economists inside and outside the Euro Area. It is argued that the adoption of the Euro by Greece, Spain, Portugal and Ireland created baseless optimism. The confidence that the membership in the Euro Area would lead to the convergence of the weak institutional framework as well as of the weak economies to the level of the core economies in the Euro Area was economically not justified. The evidently positive effects of accelerating growth driven by surging private and public demand obscured the view of the negative effects. Deeper and detailed investigation would have uncovered the mismatch between prices of non-tradable and tradable goods/services as well as between wages and productivity. Furthermore, the growing current account deficit could be observed as an unmistakable signal of those countries' fading competitiveness. In contrast, the core countries, especially Germany, benefited from the Euro Area via increasing exports. The value of the Euro based on an average of European competitiveness favoured the fittest. The monetary policy of the ECB could not have solved the problem that the peripheral countries needed a more restrictive policy whereas the core countries were relying on a more expansive policy because of their low growth (Dadush, 2010, p. 3). The appreciation of the Euro against the USD struck the former countries much harder than the latter.

At least among the non-academic public, crises that affect financial and currency markets are often blamed on speculators. In terms of economics this suspicion leads to the discussion on the efficient-market hypothesis. It is argued that the lack of adequate internal adjustment mechanisms leads to the failure of early warning signals. The almost exclusive attention that is paid to fiscal deficits is eclipsing the structural imbalances within the Euro Area. The links between budget deficits and current account deficits had been hardly picked up as a central theme. The appreciation trend of the Euro against the US dollar, with the peak in April 2008, seemed to cover the emerging problems in weaker Euro Area countries. The erratic ups and downs with a recently strong depreciation can be interpreted as a correction of the former optimistic perspective. There is evidence that the hectic floating of the Euro is related to the news about the countries in crisis, especially Greece. The opinions range from downplaying the Greek debt as a solvency problem to causally linking Greek default to the end of the Euro. "Official statements that the Greek problem was a threat to the euro became somewhat of a self-fulfilling prophecy, however, as the euro began to weaken substantially. Some of this was no doubt due to an understandable fall-off of capital inflows into the Eurozone. The combination of disagreements among Eurozone governments and the perceived failure of many officials to have a clear grasp on what was going on have, not surprisingly, led many market participants to re-examine their assumptions about the future of the euro" (Wihlborg et al., 2010, p. 57). Evidence for the lack of efficient Euro Area balance adjustments is visible when comparing price, cost and current account developments in the last decade between the countries within the Euro Area as well as within the EU: "… it is ironic that in general it was the surplus countries that carried out more of the responses pointed to by the endogenous OCA theory, while it was the deficit countries that did the least. Thus, in the first decade of the euro, endogenous responses appear to have done at least as much to worsen imbalances within the Eurozone as they have done to reduce them" (Wihlborg et al., 2010, p. 73).

In Europe, those countries were hit first by the financial crisis where governments since the beginning of the decade have been trapped in budget bottlenecks. But also formerly healthy government budgets came under heavy pressure of the financial burden of the stimulus packages. Public revenues could not cover the additional expenses, firstly because of the huge sudden amount due, and secondly because of the declining tax income. The sovereign debt crisis coupled with a currency crisis emerged in many countries as a new type of twin-crisis. This situation was getting even worse when credit-rating agencies downgraded sovereign bonds, especially in several Euro Area member countries. Downgrading hit its preliminary peak on January 13, 2012 when one credit-rating agency lowered the credit-worthiness of nine Euro Area countries.

Shortly afterwards, this agency also downgraded the European Financial Stability Facility (EFSF).

The current "crisis discussion" is centered around the sovereign debt crisis which is often considered synonymous with the Euro crisis. All too often, it seems that the 2007/2008 crisis' after-effects are ignored, although the risks that emanated from fragile and bad banks might not be fully under control. In the middle of 2009 the ECB injected 442 billion Euro one-year loans to European banks to buy higher-yielding sovereign debt, mostly Greek and Spanish government bonds. The ever largest single ECB liquidity operation occurred in December 2011 by providing 489 billion Euro in unprecedented three-year loans to 523 banks. There is no confirmed information whether the banks use the funds for buying government bonds of troubled Euro Area countries, paying off bank bonds that are maturing beginning 2012, or financing operations in the real economy.

1.3.4 From Sovereign Debt Crisis to Euro Crisis or the Other Way Round: Sequencing of Twin or Triple Crisis?

When generalizing the path of the crisis the following sequencing seems to be plausible:

- Pre-crisis phase: real-estate bubble or "optimism bubble"
- First crisis phase: banking crunch or sudden decline in competitiveness resulting in fast increase of current account deficit or structural budget imbalances
- Second crisis phase: unexpected recession, drastic drop of tax income, increasing budget deficit
- Third crisis phase: stimulus package, increasing debt, time lag in re-structuring public revenues and expenditures
- Fourth crisis phase: sovereign debt leads to solvency at risk, flight of capital, currency crisis

Numerous models aim to shed light on the potential linkages between different types of crises. The explanation of currency crises that follow uncontrolled monetary expansion respectively exorbitant budget deficits is well-accepted standard in the theoretical literature (e.g. Corsetti and Mackowiak, 2006). The analysis of linkages between banking crises and debt crises is becoming top priority in current research on economic and financial crisis (Reinhart and Rogoff, 2008; Candelon and Palm, 2010). First of all, consensus has to be achieved on an operational definition of sovereign debt crisis. The public debt-GDP ratio is by far the most popular indicator, but it does not solve the problem of deciding at which ratio public debt turns into crisis. The crisis resistance against a given level of public debt seems to increase with the level of economic development (Reinhart et al., 2003). Market-based indicators such as bond spreads are also subject to the uncertainty about the threshold of debt default. The intuitively sufficient characterization of a sovereign debt crisis

Table 1.8 Primary Origins and Developments toward the Sovereign Debt Crisis

Country	Pre-crisis Situation (budget, debt)	Origins of Crisis	Type of Initial Crisis	Development of Crisis
US	High budget and current account deficit, even though strong overall competitiveness	Housing and banking sector	Banking crisis	Sovereign debt crisis
Spain	Better than Euro Area average	Housing and banking sector	Banking crisis	Sovereign debt crisis, currency crisis
Ireland	Similar to Euro Area average	Banking sector, low competitiveness	Banking crisis	Sovereign debt crisis, currency crisis
Portugal	Lower than Euro Area	Budget deficit, low competitiveness	Budget crisis	Sovereign debt crisis, currency crisis
Greece	Lower than Euro area average	Budget deficit, current account deficit, low competitiveness	Budget crisis	State crisis, currency crisis
Italy	Between core and periphery Euro Area members	Budget deficit	Budget crisis	Sovereign debt crisis, currency crisis

Source: collected by the author.

does not withstand theoretical requirements. If fears of government's insolvency are a necessary condition for a sovereign debt crisis, questions arise about culture-related risk avoidance, efficiency of financial markets, self-fulfilling prophecy.

From 2007 on the debt-GDP ratio increased in all almost all European countries and government bond spreads too, but the highest increase occurred in Greece, Ireland and Portugal. Strict causality for rolling-on and self-enhancing crisis effects that may lead to national insolvency could not be confirmed so far. Whereas in the US, political parties blocked each other in negotiations to increase the debt ceiling till the last minute, but all sensitive data did not reflect the fear of a sudden government insolvency. In contrast, the Greece government policy seems to delay expenditure reducing measures, thus increasing the pressure on the Euro Area group, ECB and IMF for providing further credits. Instantly the discussion on a crash of the Euro gained momentum.

Gaining deeper insights into the evolution of the crisis in all its complex facets and interdependencies may require new analytical tools. Furthermore, the time period seems too short for delivering convincing results. With respect to Europe, key failures in governing the Euro Area are the weak enforcement of the Maastricht criteria, the insufficient reform of the Stability and Growth Pact, the underestimation of the debt dynamics, and in the case of Greece, the statistical misreporting.

1.3.5 Governing the Sovereign Debt Crisis

Managing, especially funding, the debt differs considerably between the US and Europe. A systematic governance concept should consist of three strategies: crisis prevention, crisis control/ mitigation, crisis resolution. The first strategy is not yet on the top of the agenda, the second appears to be rather an interventionist muddling through based on the idea that cheap money and its allocation to public budgets would keep the economy running. The third strategy is a privilege of economists and a burden for future politicians.

The keywords of the second strategy are "rescue (banks)", "stimulate (economy)", "clean-up (government's budget)". Modest efforts under the keyword "regulate (the financial markets)" had been undertaken or entered the stage of narrowing down ideological barriers in the political arena. These few measures fit into the first strategy.

Crisis prevention efforts can be categorized into two directions: firstly, stricter bank regulations and secondly stricter budget rules. It became evident that stricter global bank regulations are not in the interest of the US and British governments because of the political power and economic importance of the financial centers of New York and London. The new Basel III Accord will introduce tighter requirements for bank capital and liquidity. Furthermore, banks have to pass "stress tests". The rules will be put into force in 2013. The controversial discussion in the EU on the role of the ECB in financing of governments concluded that the Lisbon Treaty prohibits the ECB being a lender of last resort to governments. The plan of Germany and France to move toward a Fiscal Union in the Euro Area cleared the first hurdle with losing the UK, but this plan is unlikely to succeed. The crucial rules call particularly for tougher budget discipline and threaten with automatic sanctions. The debate on introducing a tax on transactions on financial markets is far from being ready to be decided.

In contrast to the EU, stricter budget rules are not on top of the political agenda in the US Economists expect that it will be necessary to increase the debt ceiling in 2013. The most conflicting issue regarding the long-term stabilization of the national budget centers around the sustainability of the pension and health-care systems. Despite large differences between states in the system and amount of taxes, there are no concerted actions to agree and implement an efficient and need-oriented tax system. From an American perspective, the debt to GDP ratios on the federal, state, and with some exceptions on the municipal level seem to give no cause for serious concern. This might result from the experience that in times when the debt ceiling[1] is reached, either tax revenue must be raised or the debt ceiling extended. The latter requires the approval of both houses of Congress. After the debt ceiling had been raised on February 12, 2010 to USD14.294 trillion, the Treasury warned the Congress in May 2011 about a sovereign default that will occur on August 2nd, 2011. After the heated controversies between Democrats and Republicans the agreement ("Budget Control Act of 2011") increased the debt ceiling by USD900 billion, but stipulated the reduction of spending by USD917

1 The debt ceiling was introduced in 1917 in order to assure more flexibility in government's spending. As long as the debt ceiling is not maxed out, the Treasury can borrow money without restriction. Only the Congress can enact the legislation which changes the debt ceiling. The President must sign it into law.

billion over ten years. As early as August 3rd, 2011 the US sovereign debt jumped over 100 percent of GDP. Thus, US' sovereign debt exceeded its GDP and joined countries such as Greece, Italy, Ireland. Two days later a US credit rating agency downgraded the long-term credit rating of the US government from AAA to AA+.

In the wake of the bank crisis the control/mitigate strategy started in the US with a USD700 billion bailout program. The government-led program favored 87 banks (43 were foreign banks). There is considerable criticism in the US that European banks benefit too much from the bailout funds.

In the EU the core activities on the supranational and national level are aiming at rescuing banks from getting bankrupt (mainly in 2008/2009) and financing governments' debt (since 2009). Within the Euro Area the rescue of the "systemic" banks and the maintenance of the public solvency are the top short-term priorities.

European banks were hit much harder by the crisis than the banks in the US and in the Pacific. Between July 2007 and March 2009 approximately USD3.23 trillion of market value in the global banking sector was destroyed. European banks lost 75 percent of their market value (Fratianni and Marchionne, 2010, p. 9). As long as banks' undercapitalization cannot be solved by systemic changes, the fragility and vulnerability will continue. The largest part of commitments and outlays had been allocated to debt and asset guarantees. Purchasing bad assets had not been in the forefront of rescue activities. One of the still unsolved questions is related to the consequences of the restructuring of the banking sector. The crisis has increased the market share of large banks. More banks may reach the size of too-big-to-fail, but at the same time the size of too big to be saved. The discussion on separating universal banks into investment and retail banks may mitigate this problem. Another unsolved question concerns the participation of banks in funding government debt. Despite strong reservations, at the end of 2011 the ECB injected almost 500 billion Euro in loans into the banking sector at a 1percent interest rate. More than 500 banks took this money. The sudden increase in liquidity may motivate banks to buy European sovereign bonds.

In late 2008 the European Commission took the initiative to propose a European Economic Recovery Plan (EERP)—adopted on December 8th, 2008—aiming to swiftly stimulate demand and boost consumer confidence as well as to prepare the European economy for the future challenges of tougher competition on the global markets (European Commission, 2008). On the one hand, the plan addresses the current causes of the crisis that result from insufficient competitiveness (Greece, Portugal, Ireland), on the other hand the measures should build-up a protective barrier against future recessions. According to the EC's intention, the plan should guarantee a "counter-cyclical macro-economic response to the crisis in the form of an ambitious set of actions to support the real economy" (European Commission, 2008, p. 6). The immediate endowment of 200 billion Euro is financed by budgetary expansion of the Member States (170 billion Euro) and the EU (30 billion Euro). Member States are explicitly allowed to break the rules of the Stability and Growth Pact for two to three years. The different crisis histories made it inappropriate to design and implement a "one size fits all-strategy". The plan has been criticized by economists because of its Keynesian approach.

The interim country assessments show cautious optimism, however they seem to be political statements rather than based on complex analysis. At the end of 2011 the EC stated that "European countries also undertook significant interventions to stabilize their financial sectors. Together, the EU countries injected nearly 300 billion Euro worth of capital into financial institutions and extended 2.5 trillion euro worth of guarantees. The EU adopted new rules on hedge funds and private equity, and as of January 2011 a new financial supervision system is in place for the 27 Member States. European Heads of State and Government also agreed on the establishment of a permanent crisis management mechanism to safeguard the financial stability of the eurozone from 2013 onward" (European Commission, 2011).

In spring 2010 the increasing sovereign debt in the Euro Area called for a new response. The EU Member States agreed to establish the European Financial Stability Facility (EFSF) aiming to regain financial stability. In order to achieve this goal the EFSF provides temporary financial assistance to the members of the Euro Area that are in economic difficulties (EFSF, 2012). The guaranteed commitment is fixed at 780 billion Euro[1] and

1 The Member States share is in accordance with their share in the paid-up capital of the ECB.

borrowing limit at 440 billion Euro. The EFSF framework came into force on 18th October 2011. The scope of activities includes issuance of bonds or other debt instruments on the market to raise funds, interventions in the debt primary and secondary market, actions based on a precautionary program, financing the recapitalization of financial institutions through loans to governments. The financial assistance is linked to appropriate conditionality. The EFSF is part of a wider rescue net which also includes the 60 billion Euro European Financial Stabilization Mechanism (EFSM) and a 250 billion Euro package from the IMF. The EFSM is authorized to raise funds by the European Commission which are guaranteed by the EU budget. In the middle of January 2012 one credit rating agency downgraded the EFSF to "AA+". This did not cause a deterioration of the position of the EFSF on the financial market. After June 2013 the EFSF will not be actively present in the financial market, but it will continue in an administrative capacity until all outstanding bonds have been repaid. After controversial discussions the Euro Area member states agreed on leveraging the EFSF in early 2012 by firstly providing a partial protection certificate to a newly issued bond of a member state. After initial issuance, the certificate could be traded separately. Secondly, the creation of one or two Co-Investment Funds would allow the combination of public and private funding.

In November 2010, agreement on the first loan to Ireland could be achieved aiming to safeguard financial stability in the Euro Area and the EU as a whole. The 85 billion Euro program is financed by 17.5 billion Euro from Ireland, 22.5 billion Euro from IMF, 22.5 billion Euro from ESFM, 17.7 billion Euro from EFSF and bilateral loan from UK, Denmark and Sweden. The conditions require an immediate strengthening and comprehensive overhaul of the banking system (35 billion Euro), an ambitious fiscal adjustment and growth enhancing reforms especially in the labor market. In 2011, the EFSF in total issued 8 billion Euro. The program foresees a 3-year 3 billion Euro issuance in 2012.

The agreement on Euro 78 billion rescue program for Portugal was achieved in May 2011. The program is equally financed by the IMF, EFSM and EFSF. The three year program is focusing firstly on restoring fiscal sustainability by strengthening budgetary discipline, reforming the health system as well as the public administration, privatizing public assets, secondly on growth and competitiveness enhancing reforms of the labor market, network industries, housing and services sectors, and thirdly on measures to ensure a balanced and orderly deleveraging of the financial sector and to strengthen the capital of banks. In 2011, the ESFS in total issued 8 billion Euro. In 2012, a three years 3 billion Euro issue will be placed. In May 2010, Greece got a 110 billion Euro loan within the framework of the newly established EFSF. The Euro Area Member States contributed 80 billion Euro and the IMF 30 billion Euro to this first Greek bailout. The financial support was provided under strong policy conditionality. The latter allows the IMF/EU to check Greek's performance each quarter. In 2010, Greece has to reduce the fiscal deficit by 5 percentage points. Measures reducing the deficit include an increase of the VAT, increase in excise taxes on fuel, cigarettes and drinks, a windfall tax, a property tax, near abolition of 13 and 14th month pay in the public sector, cut of Christmas and Easter bonuses, cuts in pensions, reducing early retirement. In October 2011, the Euro Area Member States agreed on a second financial assistance program for Greece which promises to provide an additional 100 billion Euro rescue package until 2014. The maturities of existing loans from the first bailout will be extended. Furthermore, the private sector contribution of 37 billion Euro will be added. Financial institutions will be offered a set of optional forms of contribution, including the buy-back of Greek debt, the extension of bond maturities and the rollover of existing debts. Greek banks will be recapitalized "if needed". A debt rescheduling agreement with private creditors had not been wrapped until the end of January 2012. It is to be expected that private investors will lose approximately 70 percent of their original investment. The overall results so far did not meet the expectations. It is criticized that the two bailouts do not efficiently address the structural shortcomings and therefore do not lead to sustainable growth. In January 2012 the German Chancellor proposed to install an "EU commissioner to Greece" in order to seize control of the Greek budget. This proposal has been sharply criticized by Greek politicians and in a moderate form by the European Commission as well.

The agreement on the establishment of a permanent crisis resolution mechanism—the European Stability Mechanism (ESM) was achieved in June 2011. The summit on January 31, 2012 clarified legal details. UK did not sign the treaty.

Czech Republic did not sign the treaty at that date because of constitutional reasons. The ESM has to execute the same tasks as the EFSF. It is to be expected that the ESM will come into force in the middle of 2012. The total subscripted capital will be 700 billion Euro with an effective lending capacity of 500 billion Euro.[1] According to the latest information there seems to be discussions aimed at combining the ESFS with the ESM instead of replacing the ESFS by the ESM. If the IMF provides a third 500 billion Euro funding, the total available backstop fund will increase to 1.5 trillion Euro.

In principle, the EU and the US are facing a similar economic situation: fiscal deficit, sovereign debt crisis, economic recession. The governance strategies differ sharply: Whereas in the EU common efforts of the EU, ECB and IMF to finance budget deficits of the four crisis countries are strongly conditioned on fiscal consolidation, the US government turns its primary attention to spur growth by introducing new stimulus measures.

1.3.6 Conclusion and Future Prospects

The evolution of the current sovereign debt crisis differs between the US and the EU, but also within the EU. Real estate bubbles in the US, Spain and with some restrictions also Ireland burst and caused a banking crisis. The latter called for financial support from the government as lender of last resort. Especially the Lehman Brothers failure caused the spill over of the banking crisis to the real sector in the US and many other economies. Thus, the banking crisis was followed by a recession. The mirror picture to the real estate bubble could be observed in Greece and Portugal with an "optimism bubble" which resulted from the illusion of Euro-gifted increased competitiveness. The fading real competitiveness was demonstrated by the growing current account deficits which made these economies extremely vulnerable against the fast contagion of the US recession. The case of Greece has its special feature due to stating wrong data about its macroeconomic situation, including the government debt. The already troubled economies were burdened further with public debt resulting from launching stimulus packages. These measures were not designed to create new international competitiveness in the short-run. Most recently Italy joined the club of endangered economies in the Euro Area because of an inappropriate crisis management of its budget. The US government raised additional money by a last-minute increase of the debt ceiling. Within the Euro Area, financial solidarity (reinforced by the inclusion of the IMF) weakened the strong core and therefore put the Euro under pressure. The controversial role of the ECB as funder of government debt seems to contribute to the uncertainty about the future of the Euro.

Despite a considerably higher sovereign debt in the US—measured in percentage of the GDP—compared to the Euro Area, the fragility of its current economic situation seems to be lower. The opposite should be expected because the mix of strong core economies and weak peripheral economies in the Euro Zone reduces the vulnerability against shocks. In addition, all non-Euro Area Member States of the EU, except UK, signed in December 2011 a fiscal austerity pact that seems to be the first step in switching the focus from crisis mitigation strategy toward crisis prevention. The confidence-building effect is obviously low till now which could be attributed to the complex decision-making process when it comes to implementing concrete measures. Furthermore, the ongoing uncertainty about the successful mastering of the Greek case puts additional pressure not only on the European sovereign debt crisis but also on the future of the Euro. The mixture of the sovereign debt crisis with a potential severe currency crisis may justify the perception that the future economic risks in the EU are higher than in the US. Anyhow, whereas the US didn't present concrete plans how to proceed with the sovereign debt and how to avoid future backslides into similar crisis, the EU Member States begin to focus on resolving the causes of the debt crisis. The funding of bailout actions had been the dominant subject of discussions in the past. Now, the external supervision and control of the budgets of the deeply indebted countries and the sanctions against violations of the new budget rules are on the top of the agenda of the European leaders. As to the long-term perspective, there seems to be consensus among economists on both sides of the Atlantic that only sufficiently high and sustainable growth will contribute to reduction of the sovereign debt. Several economists recommend to consider the cut of Greek's sovereign debt as an option to gain time in solving the debt crisis.

There are controversial proposals when it comes to the question "What's next in crisis resolution and

1 The adequacy of this ceiling will be reassessed in spring 2012.

prevention?"

The experiences with the bailouts especially of Greece suggest that stronger fiscal coordination and stronger enforcement of limitations of government deficits and debt level are necessary. The political problems of negotiating and implementing an effective mechanism for fiscal policy coordination are still unsolved. The decision-making procedure is time-consuming and compromise-oriented. Even then, there is no guarantee that all EU Member States agree on rescue programs for Euro Area members. The discontent with Greek's government crisis performance raises the fear that a moral hazard strategy will lead inevitably to future bailouts. This will put further pressure on the already existing imbalances. The political leaders in the strong EU Area Member States are under pressure to set clear limits to the principle of solidarity. Especially Germany opposes the way of rescuing the Euro Area by changing its character towards a transfer union.

From a long-term perspective, the rising debt-GDP ratios in Europe and the US resulted from more or less continuous fiscal deficits. From 1970 to 2011 the average primary deficit as a percentage of GDP is 2.4 percent for Europe and 3.6 percent for the US (Polito and Wickens, 2011, p. 604). The strong correlation of 0.8 between the primary deficit and the government's expenditures in the EU (ibid, p. 606) suggests that a considerable part of the current crisis situation results from a structural budget imbalance. Based on the fiscal performance in 2011, Ireland and Portugal raise hopes that the consolidation will be also on track in 2012. Greece did not meet the expectations and will remain the most problematic case in Europe (IMF, 2012).[1] Even the expected fall in the cyclically adjusted deficit in the United States should not hide the fact that "the risk of too rapid short-term adjustment stands in marked contrast to the continued lack of progress in clarifying a medium-term consolidation strategy" (IMF, 2012, p.3).

The findings of empirical studies (Polito and Wickens, 2011; Leeper 2010) that restoring fiscal sustainability depends rather on government expenditures than on the level of the debt-GDP ratio suggest the necessity for further austerity programs. Even in the mid-term it would be difficult to achieve the debt-GDP ratio of 60 percent required under the Stability and Growth Pact for countries with debt-GDP ratios of over 100 percent in 2011.

Agreeing on and implementing a strategy that solves the "magic triangle" of fiscal consolidation, quick debt restructuring and growth creating measures will remain the main challenge, at least in the EU. In the long-run, structural reforms and new mechanisms to prevent fiscal and macroeconomic imbalances may lead to deeper and more stable integration in the Euro Area.

1 Despite austerity measures and economic reforms that were a condition for the first Greek bailout package, the country needs a second injection of money to avoid the national bankruptcy. At the beginning of February 2012 the so-called "Troika" (European Commission, European Central Bank, IMF) and the Greek government reached a preliminary agreement on a new 130 billion Euro bailout deal which requires the approval of the Greek Parliament for an even harder cut of government spending, wages and pensions. Despite heavy street protests, the austerity package passed the Parliament on February 13, 2012 in a 199-74 vote. According to the head of the Eurogroup, Luxembourg's Prime Minister Jean-Claude Juncker, additional assurances are needed from Greece's government before the 130 billion Euro will be paid out.

Chapter 2
Foreign Trade Integration in Asia

2.1 Recent Trends in Asian Trade

Asia accounts for an increasing share of the world's merchandise exports by value. Figure 2.1 provides an annual breakdown of the respective shares of merchandise exports of Asia, North America, Europe, and the rest of the world (RoW) between 2008 and 2010. Asia's share was 27.7 percent in 2008, 29.3 percent in 2009 and 31.5 percent in 2010. While Asia was seeing a steady increase in its share of merchandise exports, Europe's share began declining following the onset of the global financial crisis in 2008 from 41.1 percent in 2009 to 37.9 percent in 2010.

Asia's merchandise trade has been growing rapidly. Table 2.1 shows the annual growth rates in merchandise trade of different regions from 2005 to 2010. In 2010 the growth rate of Asia's merchandise exports was much higher than all the other regions. Asia's growth rate rose to 23 percent in 2010 compared to only 15 percent for North America and 11 percent for Europe. The growth rates in merchandise exports for South and Central America and the Commonwealth of Independent States were both well below 10 percent. Asia also showed a significant increase in merchandise imports in 2010 with a growth rate of 17.5 percent, far higher than the average annual growth rate of 6 percent recorded between 2005 to 2010.

Table 2.2 shows bilateral merchandise trade between major Asian economies and some major non-Asian economies from January to August, 2011. China and Japan are the largest merchandise traders in Asia. For the first 8 months, merchandise trade between these two countries and with other economies strengthened in 2011 compared to the

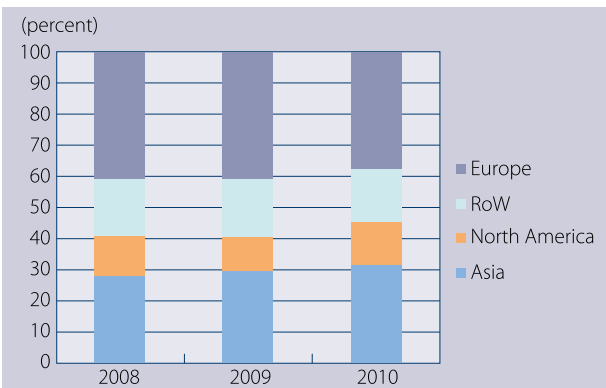

Figure 2.1 World Merchandise Exports by Region, 2008-2010

Source: *WTO International Trade Statistics 2011.*

Table 2.1 Growth Rates of Merchandise Trade, 2005-2010 (%)

Region	Exports			Imports		
	2005-2010	2009	2010	2005-2010	2009	2010
World	**3.5**	**-12.0**	**14.0**	**3.0**	**-13.0**	**13.5**
North America	2.5	-15.0	15.0	0.5	-17.0	15.5
South and Central America	1.0	-8.0	5.5	9.5	-16.5	23.5
Europe	1.5	-14.0	11.0	1.0	-14.0	9.5
Commonwealth of Independent States (CIS)	3.0	-5.0	6.0	7.5	-28.0	18.5
Asia	8.0	-11.0	23.0	6.0	-7.0	17.5

Source: *WTO International Trade Statistics 2011.*

same period in 2010.

From January to August of 2011, the value of merchandise export of Hong Kong (SAR) to the Chinese mainland was USD149.3 billion; while the value of its merchandise import from the Chinese mainland totaled USD172.2 billion, exceeding the amount for the same period in 2010. This also holds true for China's trade with several other Asian economies, such as India, Japan, Republic of Korea, Thailand, etc.

In fact, most bilateral trade values shown in the matrix of Table 2.2 are higher than for the same period in 2010. This suggests that the growth in Asia's merchandise trade was not confined to particular economies but more broadly based.

Even though the merchandise trade statistics for the whole year of 2011 are not yet available, it is interesting to compare the performance of China and the US for the first eight months of 2011. China's total exports to the world were USD1,224.5 billion, and the imports, USD992.7 billion. For the US, exports were USD969.1 billion and imports USD1,337.5 billion. China thus outperformed the US in terms of exports, but the US still remained slightly more important than China in terms of overall merchandise trade, similar to the same situation in 2010.

Table 2.3 shows the top 5 Asian economies in merchandise trade ranked by value in 2010. China is the top exporter and importer followed by Japan but with only about half China's level. China is also the largest exporter of merchandise worldwide, accounting for 10.4 percent of global exports and growing at a rate of 31 percent in 2010.

The imports of the top 5 economies in Asia have also increased rapidly. The annual growth rates, in most cases, are much higher than the world average of 21 percent. It is worth noting that the imports of China increased by almost 40 percent in 2010.

2.2 Trends of Trade in Asia: Strong Intra-regional Flows

Figure 2.2 charts the composition of Asian merchandise exports in 2010. Products from the manufacturing sector dominate merchandise exports, accounting for 79 percent of Asian merchandise exports by value. Fuels and mining products account for 12 percent; agricultural products for only 6 percent. Exports from a myriad of miscellaneous industries make up the remaining 3 percent. About 27 percent of the manufactured product exports consisted of office and telecom equipment. Figure 2.3 provides a breakdown by industry of Asian manufactured exports.

Next, we focus on three industries in which Asian economies have made extraordinary progress in 2010: office and telecom equipment, automotive vehicles and parts, and textiles.

For office and telecom equipment, China is not only the leading exporter in Asia but also worldwide. The value of its exports in 2010 reached 449 billion US dollars. Hong Kong (SAR), Singapore, Republic of Korea and Japan also export a lot in this category. They are all ranked among the top 10 exporters in the world (Figure 2.4).

Table 2.2 Bilateral Trade between Selected Economies in Asia and Other Regions from January to August, 2011 (USD billion)

To \ From	China, People's Republic of	India	Japan	Korea, Republic of	Australia	Hong Kong, China	Singapore	Russia	Thailand	Malaysia	US	EU	World
China, People's Republic of		14	106.7	88	46.4	149.3	27.9	21.1	18.2	26.8	66.1	106	992.7
India	32.5		7.1	8.6	10.5	8.3	10.1	3	3.5	5.6	14.3	36.3	264.6
Japan	93.6	4.2		25.9	33.8	11.2	11.7	10.1	16.8	17.4	43.1	37.8	496.8
Korea, Republic of	54.4	4.8	44.7		15.6	5.3	10.3	8	3.2	6.1	29.1	26.4	326.7
Australia	21.3	1.3	10.7	4.7		3.4	10.6	0.4	5.6	5.4	17.1	24.1	136.9
Hong Kong, China	172.2	7.7	28	20.4	2.1		29.9	0.6	11.4	7.1	21.9	26.2	379.8
Singapore	23.5	9.1	18.4	14.1	4.4	4.9		1.3	7.8	21.2	20.7	21.4	213.3
Russian	24.9	1.5	7.3	7.1	0.7	1.1	0.3		0.8	0.7	5.2	87.8	181.1
Thailand	17	2.3	25	5.8	5	4	9.8	2		8.1	7.4	10	136
Malaysia	17.6	3	12.4	4.2	2.9	2.4	32.9	0.3	8.4		9.7	9.9	132
US	205.8	23.3	79.2	37	6.7	27.6	15.3	12.4	14.9	13.9		203.7	1,337.5
EU	233.8	36.1	62.2	39.4	13	30.7	26.9	151.1	16.9	16.1	178	2,596.3	4,074.6
World	**1,224.5**	**196.2**	**535.3**	**373.9**	**175.3**	**284.3**	**274**	**310.6**	**156.9**	**162.9**	**969.1**	**3,869.5**	**11,696.8**

Source: *IMF Trade Statistics.*

Table 2.3 Top 5 Asian Economies, Merchandise Trade in 2010 (USD billion; %)

Rank	Ranks in the world	Exporters	Value	Share in the World	Annual Growth	Ranks in the World	Importers	Value	Share in the World	Annual Growth
1	1	China, People's Republic of	1,578	10.4	31	2	China, People's Republic of	1,395	9.1	39
2	4	Japan	770	5.1	33	4	Japan	694	4.5	26
3	7	Korea, Republic of	466	3.1	28	9	Hong Kong, China	442	2.9	25
4	11	Hong Kong, China	401	2.6	22	10	Korea, Republic of	425	2.8	32
5	14	Singapore	352	2.3	30	13	India	327	2.1	27

Source: *WTO International Trade Statistics 2011.*

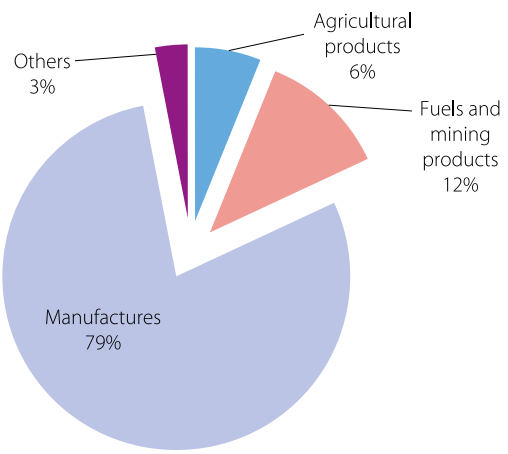

Figure 2.2 Asian Merchandise Exports by Industry, 2010

Source: WTO *International Trade Statistics 2011.*

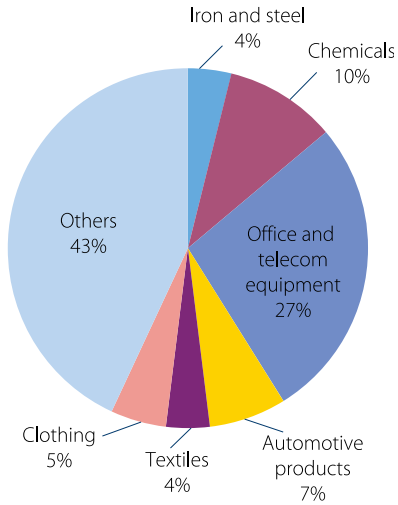

Figure 2.3 Asian Manufactured Exports by Category, 2010

Source: WTO *International Trade Statistics 2011.*

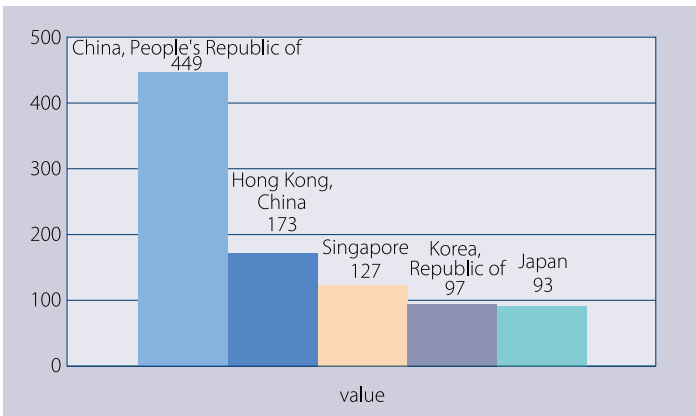

Figure 2.4 Top 5 Asian Exporters in Office and Telecom Equipment, 2010 (USD billion)

Source: *WTO International Trade Statistics 2011.*

In terms of automotive vehicles and parts, Asian exports have recovered from the decline suffered during the 2008/2009 economic crisis and grew rapidly in 2010. In particular automotive product exports from Thailand and India grew by more than 60 percent in 2010 (Table 2.4).

In terms of textile products, Asia continues to dominate in the international export market. China has surpassed the EU to become the top textile exporter in the world. The value of its exports accounted for a 30.7 percent share of global textile exports in 2010. Other top exporters in Asia such as India and Hong Kong (SAR), are all ranked among the top 10 textile exporters in the world (Table 2.5).

Figure 2.5 shows the market destinations of Asian merchandise exports in 2010: 17.2 percent went to Europe and 17.1 percent to North America. More than half the goods exported were to other Asian economies.

Figure 2.6 shows from where Asian merchandise imports originated. As much as 58.4 percent came from the economies within Asia in 2010. This high percentage share of intra-regional trade within Asia is evidence of a high level of interdependence among the Asian economies.

Figures 2.7 and 2.8 show how stable the market

Table 2.4 Top 5 Asian Exporters of Auto Products, 2010 (%)

Economy	2009	2010
Japan	-40	45
Korea, Republic of	-24	47
China, People's Republic of	-31	41
Thailand	-28	60
India	-2	65

Source: *WTO International Trade Statistics 2011.*

Table 2.5 Major Asian Exporters of Textiles, 2010 (%)

Country	Value	Ranks in the world
China, People's Republic of	77	1
India	13	3
Hong Kong, China	11	5
Korea, Republic of	11	6

Source: *WTO International Trade Statistics 2011.*

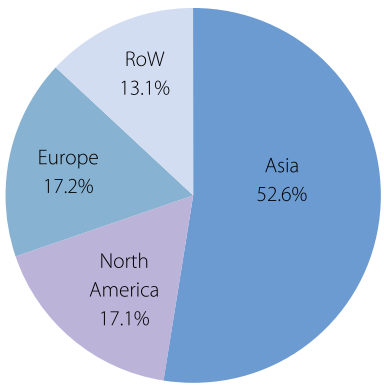

Figure 2.5 Asian Merchandise Exports by Destinations, 2010

Source: *WTO International Trade Statistics 2011.*

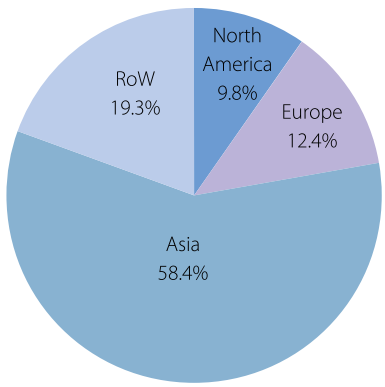

Figure 2.6 Asian Merchandise Imports by Origins, 2010

Source: *WTO International Trade Statistics 2011.*

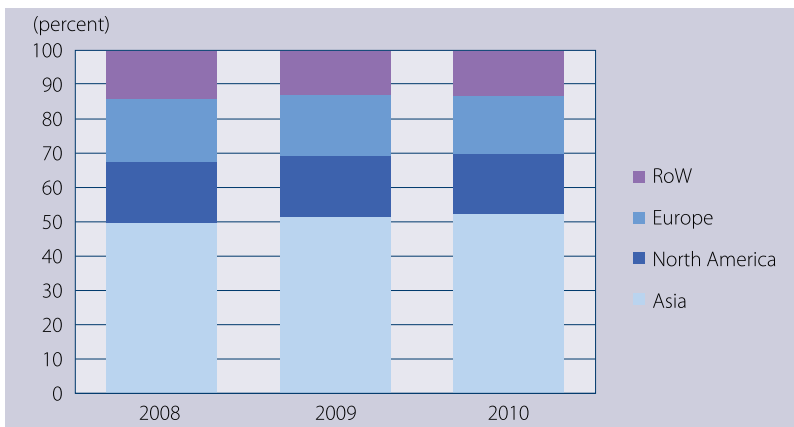

Figure 2.7 Asian Merchandise Exports by Destinations, 2008-2010

Source: *WTO International Trade Statistics 2011.*

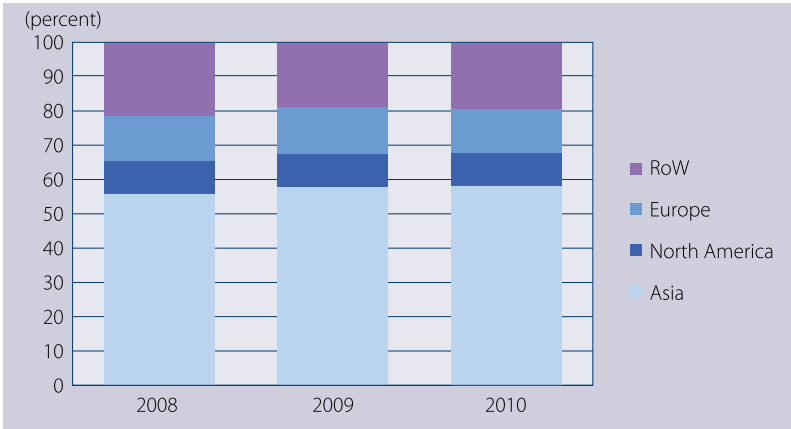

Figure 2.8 Asian Merchandise Imports by Origins, 2008-2010

Source: *WTO International Trade Statistics 2011.*

shares have been over the 3 years from 2008 to 2010. Asian economies have proven to be a large and reliable market for each other's products.

2.3 Trade Dependence among the TPP Members

2.3.1 What is TPP?

In November 2009, after the review of the US trade policy by the Obama administration, the United States formally joined the TPP (Trans-Pacific Partnership) negotiations (Lewis 2011). The TPP originated from the P-4 Agreement (Trans-Pacific Strategic Economic Partnership Agreement, informally known as the Trans-Pacific SEP, the P-4 Agreement, or the P-4). In October 2002, Chile, New Zealand and Singapore launched an initiative aimed for a Pacific Three Closer Economic Partnership (P3CEP) at the APEC Summit held in Los Cabos, Mexico. The first round of formal negotiations started in September 2003 in Singapore. Later on in April 2005, Brunei officially joined the negotiations as a "founding member". Following the participation of Brunei, the name changed to the Trans-Pacific Strategic Economic Partnership (or P-4). The P-4 Agreement was signed by New Zealand, Chile, and Singapore on July 18, 2005, and by Brunei on August 2, 2005, following the conclusion of negotiations in June 2005 and entered into force on differing dates in 2006 with regard to the various parties (Lewis 2011). Table 2.6 shows the background and timeline of the development of TPP. Japan has indicated its interests in joining the TPP negotiations. However, at the time of this writing, the progress of Japan's negotiations with the relevant parties of the TPP is not clear.

The P-4 countries are all small economies and had already achieved a high degree of economic openness. For example, Singapore has already provided zero-tariff access on almost all goods and New Zealand maintained very few tariffs on the import of goods. Obviously, these countries were not motivated by improved access to each other's markets. In fact, the goal of these countries was to create a model of high-standard FTA to which other economies could accede so as to gradually transform into APEC-wide trade liberalization (Lewis 2011).

After the United States joined the P-4 negotiations, the agreement became more commonly referred to as the TPP. Following the US participation, Australia, Peru, Vietnam and Malaysia also joined the negotiations. Till the end of 2011, nine countries had joined the TPP negotiation, and ten rounds of the negotiation had been held. (Table 2.6)

The USTR (US Trade Representatives) indicated that TPP was geared towards obtaining market access for US exports. However, as shown in Table 2.7, the US already had free trade agreement with Australia, Chile, Peru and Singapore. The free trade agreement between the US and Malaysia was under negotiation. Only Vietnam, Brunei and New Zealand had no free trade agreement with the US. Given the small size of these countries' markets, it is clear that the US could not gain much benefit through the TPP negotiations. At present, however, the TPP is expected by the participating countries to serve as a model of trade liberalization in the Asia-

Table 2.6 The Development of TPP

Oct. 2002	Chile, Singapore and New Zealand launched the first negotiation of Pacific Three Closer Economic Partnership(P3-CEP)
Jul. 2005	Chile, Singapore and New Zealand signed the Trans-Pacific Strategic Economic Partnership Agreement(P4)
Aug. 2005	Brunei signed the Trans-Pacific Strategic Economic Partnership Agreement
2006	The P4 Agreement entered into force
Feb. 2008	President Bush announced the US will join P4 negotiations on financial services and investment
Mar. 2008	First round of US/P4 financial services and investment negotiations
Jun. 2008	Second round of US/P4 financial services and investment negotiations
Sept. 2008	Third round of US/P4 financial services and investment negotiations; President Bush announced negotiations for US to accede to P4 to form a Trans-Pacific Partnership; President Bush invited Australia, Peru and Vietnam to join TPP negotiations
Nov. 2008	Peru and Australia announced their participation in TPP negotiations, with Vietnam initially as an observer
Mar. 2010	First round of TPP negotiation took place in Melbourne, Australia
Jun. 2010	Second round of TPP negotiation took place in San Francisco, US
Oct. 2010	Third round of TPP negotiation took place in Brunei
Dec. 2010	Fourth round of TPP negotiation took place in Auckland, New Zealand
Feb. 2011	Fifth round of TPP negotiation took place in Santiago, Chile
Mar. 2011	Sixth round of TPP negotiation took place in Singapore
Jun. 2011	Seventh round of TPP negotiation took place in Vietnam
Sept. 2011	Eighth round of TPP negotiation took place in Chicago, US
Oct. 2011	Ninth round of TPP negotiation took place in Peru
Dec. 2011	Tenth round of TPP negotiation took place in Malaysia

Source: obtained from various government website.

Table 2.7 FTA Agreement Signed among TPP Members and Potential Members

	US	Chile	New Zealand	Australia	Peru	Singapore	Brunei	Vietnam	Malaysia
US		√√		√√	√√	√√			√
Chile	√√			√√	√√				√
New Zealand				√√	√√	√√			√√
Australia	√√	√√	√√			√√			√
Peru	√√	√√				√√			
Singapore	√√		√√	√√	√√				
Brunei									
Vietnam									
Malaysia	√	√	√√	√					
Canada	√√	√√			√√				
Mexico	√√	√√			√	√			
Korea, Republic of	√	√√	√	√	√√	√√			
Japan		√√	√	√	√	√√	√√	√	√√

Notes: √√ means FTA Agreement has entered into force;
√ means FTA Agreement is under negotiation or agreement has been reached but has not entered into force.

Source: Obtained from various government website.

Pacific area and later on expand to include other APEC members to achieve the long-term goal of establishing the Asia-Pacific free trade area.

The US-led TPP, if successful, would have profound impacts on the direction of the Asian economic integration. However, how do we measure its success, by the number of the participating members or by its high-standard negotiations? These are the two crucial questions that a successful TPP must address. In fact, building a critical mass for the TPP and the high-standard negotiations are two conflicting objectives. If one wants high standard FTA, it would be difficult to attract potential participants. If one wants a critical mass, the standard may have to be sacrificed.

The following section will focus on the first question, emphasizing the need to expand the TPP's membership.

2.3.2 Interdependence among the TPP Members

The nine TPP members are all APEC members and scattered across North America, South America, Asia and Oceania with different economic development levels. Together their current market capacity is not large. Table 2.8 shows the volume of export among the TPP members and with other relevant economies in 2010. Several characteristics can be identified from the statistics in Table 2.8. First, TPP's largest destination market is not the TPP itself, but NAFTA (USD526.97 billion) while EU is the second largest destination market (USD385.5 billion). The importance of NAFTA as the largest destination market mainly reflects that NAFTA members including Canada and Mexico are more important markets for the US export than TPP. As shown in Table 2.8, the US export to NAFTA was as high as USD422.78 billion while its export to TPP was only USD1.65 billion in 2010. Second, the US exports more to EU and China than to TPP. As mentioned, total US export to TPP was USD91.65 billion in 2010 whereas its export to EU and China was USD246.89 billion and USD102.36 billion, respectively. Figure 2.9 shows top 10 markets with the fastest growth rate for the US export from 2000 to 2010. China and India lead the list. The US export to China had grown by 468 percent from 2000 to 2010 while its export to India had grown by 425 percent during the same period. The evidence here shows that in leading the TPP initiative , the US is not focusing on the market that are larger in size and more promising in

Table 2.8 Export among TPP Members and Other Major Economies, 2010 (USD billion)

To \ From		TPP									TPP	China, People's Republic of	Japan	Korea Republic of	India	Russia	Hong Kong, China	ASEAN	EU27	NAFTA
		US	Australia	Malaysia	Singapore	Vietnam	Brunei	Chile	Peru	New Zealand										
TPP	US	0	8.7	24.87	23.61	14.84	0.01	6.88	5	2.78	86.7	292.19	123.72	47.33	28.27	24.89	44.09	109.07	1,282.99	514.31
	Australia	22.38	0	8.58	12.92	2.94	1.01	0.8	0.14	7.44	56.21	27.94	16.27	6.75	1.8	0.35	5.04	39.87	209.07	25.46
	Malaysia	14.38	3.43	0	43.09	1.77	0.06	0.2	0.01	0.57	63.52	24.49	18.14	4.57	2.97	0.23	3.42	67.09	229.75	15.31
	Singapore	29.95	4.57	33.9	0	1.49	0.12	0.08	0.01	0.61	70.74	33.17	25.84	16.79	8.93	3.15	6.76	66.93	348	31.97
	Vietnam	3.81	1.44	2.46	7.59	0	0	0.19	0.07	0.31	15.86	23.76	8.4	7.55	1.91	0.9	4.44	18.95	68.51	4.07
	Brunei	0.14	0.03	0.47	0.98	0	0	0	0	0	1.62	0.41	0.17	0.06	0.03	0	0.01	1.65	8.24	0.15
	Chile	11.18	0.26	0.12	0.06	0.08	0	0	1.01	0.05	12.77	8.29	2.79	3.19	0.32	0.03	0.41	0.98	65.43	13.5
	Peru	6.92	0.09	0.14	0.03	0.05	0	1.16	0	0.06	8.46	3.66	1.02	0.68	0.35	0.18	0.15	0.7	29.7	8.01
	New Zealand	2.89	7.55	1.01	1.76	0.15	0.42	0.03	0.02	0	13.83	2.84	1.95	0.98	0.27	0.23	0.51	4.64	31.53	3.37
TPP		91.65	26.09	71.54	90.04	21.34	1.63	9.33	6.27	11.83	329.71	416.74	198.31	87.9	44.87	29.96	64.82	309.88	2,273.22	616.15
China, People's Republic of		102.36	54.68	47.07	37.48	6.53	0.59	16.34	5.7	3.59	266.07	0	153.62	128.95	18.23	24.08	211.67	142.6	1,587.82	113.69
Japan		62.15	41.24	21.19	16.86	7.62	3.82	6.98	2.03	2.51	164.42	123.54	0	26.76	5.17	15.13	16.92	105.09	735.44	74.58
Korea, Republic of		39.91	19.37	6.29	14.76	2.18	0.97	3.7	0.8	1.05	89.02	70.74	63.97	0	3.57	6.03	7.11	43.05	428.19	44.14
India		19.78	15.45	5.13	13.74	0.52	0.41	1.35	0.15	0.66	57.2	42.06	9.3	8.9	0.27	4.71	9.86	36.03	210.52	23.01
Russia		6.13	0.81	0.56	0.48	0.44	0	0.3	0.03	0.2	8.96	30.47	8.31	4.04	1.02	0	1.53	2.96	411.74	7.37
Hong Kong, China		27.3	3	10.19	42.42	1.83	0	0.28	0.07	0.64	85.74	224.5	43.49	16.11	9.1	0.93	0	75.08	391.1	29.65
ASEAN		72.32	20.51	57.64	109.47	8.77	0.92	1.19	0.26	3.24	274.33	142.1	115.92	49.32	20.18	8.87	25.03	273.56	91.41	78.57
EU27		246.89	17.65	24.94	36.19	11.41	0.01	11.63	6.31	3.51	358.55	320.34	89.35	45.29	39.51	184.91	44.94	121.11	1,658.26	296.76
NAFTA		422.78	10.58	28.44	26.26	16.39	0.01	10.2	8.89	3.42	526.97	333.46	143.11	60.98	30.84	26.87	49.07	122.03	419.04	964.11

Source: United Nations, ComTrade Database, IMF, http://ec.europa.eu/trade/statistics/.

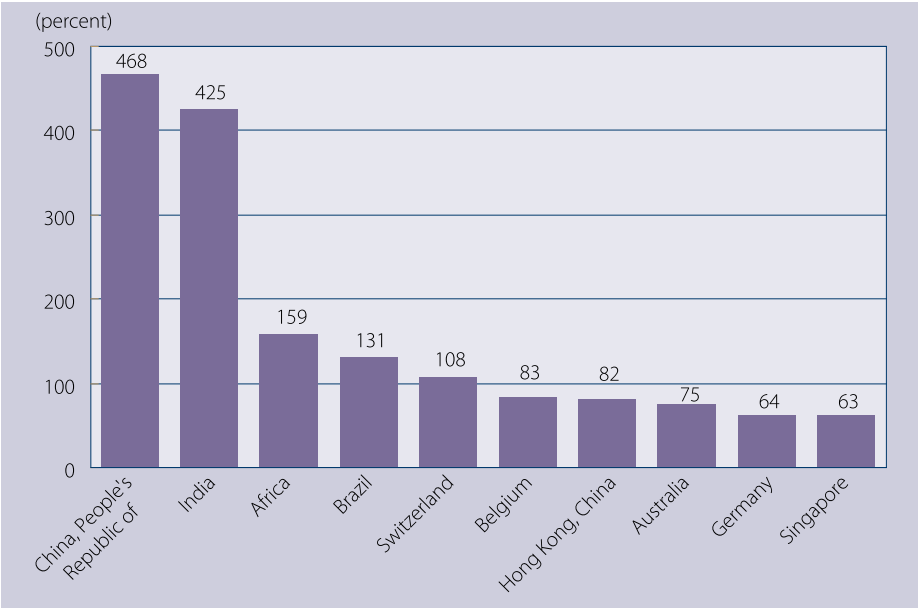

Figure 2.9 Growth in US Exports: Top 10 Markets, 2000-2010

Source: US Census Bureau website.

the future. Third, most of the TPP members except Vietnam export more to China than to the US.

Table 2.9 shows the index trade interdependence among the TPP and the relevant countries in 2010. The index is presented in percentage terms.[1] Of all the TPP countries, only Malaysia, Vietnam and New Zealand had high dependence on TPP members, with a dependence index of 34.2 percent, 24.4 percent and 38.1 percent, respectively, while the US trade dependence on TPP was the lowest as its dependence index was only 5.5 percent. Australia, Vietnam, Chile and Peru seem to have closer trade ties with economies outside TPP as their trade dependence on China, Japan, Republic of Korea and India is significantly higher than that on individual TPP members. All the TPP countries have a rather high dependence on the US, but such dependence is generally lower than on China (except Peru) and on ASEAN (except Chile and Peru).

The above analysis shows that it is difficult to explain why the nine members form TPP given the lack of trading among the member countries and relatively low level of interdependence in trade. Thus, the future of TPP lies in its ability to expand the membership in a way that is consistent with economic rationale.

1 The trade dependence of Party X on Party Y is calculated as the ratio of the amount of bilateral trade between Party X and Party Y to Party X's total trade with the world.

2.4 New Directions for China's Imports

2.4.1 Rapid Expansion of China's Imports

With the slowdown of global demand on the one hand, and China's continuous trade surplus on the other, the expansion of its imports could play a major role in speeding up the recovery of the world economy and rebalancing the Chinese economy. This section will examine several major aspects of the growth in China's imports over the last few years.

China's imports grew rapidly after it joined the World Trade Organization (WTO) in 2001. As shown in Figure 2.10, China's merchandise imports were USD225.1 billion in 2000, ranking 8th in the world with around 3.4 percent of the global total. In 2010, China's imports had increased to USD1.395 trillion, making China the second largest importing country in the world with a 9.1 percent share of global imports. From 2000 to 2010, China's imports had increased more than six-fold, with an average annual growth rate of 21 percent. In 2011, China's total merchandise imports continued to expand to USD1.744 trillion, while its exports reached USD1.9 trillion.

Table 2.9 Index of Trade Interdependence among TPP Members and Relevant Economies, 2010 (%)

On Y \ Of X		TPP									TPP	China, People's Republic of	Japan	Korea, Republic of	India	Russia	Hong Kong, China	ASEAN	EU27	NAFTA
		US	Australia	Malaysia	Singapore	Vietnam	Brunei	Chile	Peru	New Zealand										
TPP	US	0	7.8	9.8	9.3	12.0	1.4	13.9	21.5	9.7	3.7	13.6	13.7	10.8	8.8	4.9	8.4	9.4	10.9	19.6
	Australia	1.0	0	3.0	2.5	2.9	9.2	0.9	0.4	21.0	1.6	3.1	4.4	3.3	3.3	0.2	0.9	2.9	1.4	0.8
	Malaysia	1.3	3.0	0	12.4	2.8	5.1	0.3	0.3	2.7	2.7	2.6	2.9	1.5	1.5	0.2	1.8	6.3	1.4	1.1
	Singapore	1.5	3.7	19.6	0	6.2	10.6	0.1	0.1	2.9	3.1	2.0	2.4	3.9	4.1	0.6	4.7	7.8	2.2	1.1
	Vietnam	0.6	1.1	1.1	1.4	0	0	0.2	0.2	0.8	0.8	1.1	1.2	1.2	0.4	0.2	0.8	1.3	0.5	0.5
	Brunei	0	0.3	0.1	0.2	0	0	0	0	0.8	0.1	0	0.3	0.1	0.1	0	0	0.1	0	0
	Chile	0.6	0.3	0.1	0	0.2	0	0	3.8	0.1	0.5	0.9	0.8	0.8	0.3	0.1	0.1	0.1	0.4	0.5
	Peru	0.4	0.1	0	0	0.1	0	1.8	0	0.1	0.3	0.3	0.2	0.2	0.1	0	0	0	0.2	0.4
	New Zealand	0.2	3.5	0.4	0.4	0.3	3.8	0.1	0.1	0	0.5	0.2	0.3	0.3	0.2	0.1	0.1	0.4	0.2	0.2
TPP		5.5	19.7	34.2	26.2	24.4	30.1	17.2	26.5	38.1	13.1	23.9	26.2	22.2	18.8	6.2	16.9	28.5	17.3	24.2
China, People's Republic of		12.1	22.5	17.9	11.1	20.6	8.9	19.7	16.6	13.8	15.6	0	21.8	24.5	11.4	8.9	51.3	14.2	9.7	12.3
Japan		5.8	14.2	9.9	6.5	10.6	35.4	8	5.4	7.7	7.2	10.5	0	11.5	2.7	3.7	7.1	11	4.8	4.8
Korea, Republic of		2.8	6.3	3.0	5.1	6.0	9.1	5.6	2.6	3.4	3.6	7.3	6.6	0	2.2	1.6	3.1	4.6	2.8	2.5
India		1.6	4.1	1.8	3.6	1.5	3.9	1.3	0.9	1.5	2	2.2	1.1	1.5	0	1.0	2.4	2.7	1.9	1.2
Russia		1.0	0.3	0.2	0.6	1.2	0	0.3	0.4	0.7	0.8	2	1.8	1.2	0.9	0	0.3	0.6	2.2	0.8
Hong Kong, China		1.0	1.0	3.4	7.0	4.2	0.1	0.4	0.4	1.2	2.0	8.1	3.2	2.8	3.4	0.4	0	4.5	2.7	0.8
ASEAN		5.7	14.8	31.8	28.7	18.7	24.2	1.8	1.6	12.5	11.8	10.3	15.4	11.6	10.4	2	10.9	26.6	0.7	4.5
EU27		17.8	13.6	9.7	11.6	11.2	2.8	15.9	16.1	13.1	15.7	17	11.1	9.7	15.6	46.8	9.6	10.3	12	15.3
NAFTA		29.0	9.0	11.0	10.1	13.3	1.5	18.6	30.4	11.6	22.6	15.8	16.1	13	9.9	5.4	9.3	10.4	2.4	41.1

Source: United Nations, ComTrade Database, IMF, http://ec.europa.eu/trade/statistics/.

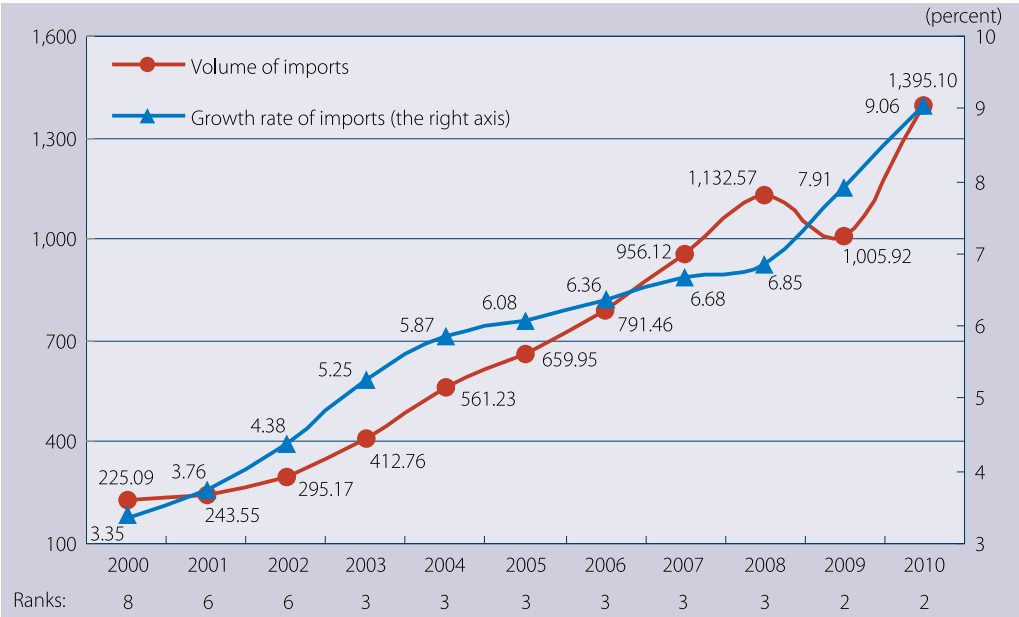

Figure 2.10 China's Rising Imports, 2000-2010 (USD billion)

Source: *WTO International Trade Statistics 2011.*

Figure 2.11 shows that the growth rate of China's imports after 2009 exceeded those of the US (5.5 percent), EU (8.4 percent) and Japan (7.5 percent), but also the BRICS (17.9 percent).[1] If China were to maintain its current growth in imports, by the year 2013, its total imports could reach USD2.4 trillion, thus overtaking the US as the largest importing country in the world.

2.4.2 Features of China's Import Pattern

While the size of China's imports is enormous, there is a need to address some surrounding issues.

Commodity composition: production-oriented

There are several structural imbalances in China's imports. First, the proportion of service imports is low. In 2010, China's service imports were valued at USD192.2 billion, accounting for only 13.8 percent of China's total imports, while the average for the world was somewhere between 20 to 25 percent. Between 2000 and 2010, the average annual growth rate of China's service imports was 18.6 percent, lower than the 21 percent growth rate of its merchandise imports.

Second, compared to imports of manufactured goods, the value of primary good imports is low (Figure 2.12). Although the share of primary goods in China's total imports increased from 20.8 percent in 2000 to 31.1 percent in 2010, it averaged only 23.5 percent over the decade. Primary goods are imported mainly to serve as inputs in the production of manufactured goods. Many of China's imported raw materials such as crude oil, chemical feedstocks, wool, iron ore, etc., were identified as energy-intensive and environment-unfriendly. In addition, there were concerns that not enough attention was being given to importing raw materials to build strategic reserves. Only recently have there been signs that China is accelerating the build-up of its strategic oil reserves.

Third, consumer and capital goods accounted for a very low proportion of China's imports. Most imports consisted of intermediate inputs. China has mostly depended on domestic production using these intermediate inputs to meet domestic demand for final consumer goods. Currently, there is excess production of low-value consumer goods and excess demand for high-value consumer goods. This imbalance is posing problems for the current government's strategy of expanding domestic demand.

One reason for the low proportion of capital good imports has been the export controls that the major developed countries have imposed. Figure 2.13 shows that over the decade, the average share

1 In 2005-2008, however, the average growth rate of imports for Brazil, India, Russia and South Africa was 28 percent, higher than China's 19.2 percent.

of consumer goods imports was less than 2 percent; the share for capital goods imports never more than 4 percent; while intermediate inputs accounted for an overwhelming proportion, about 95 percent of China's imports.

High geographic concentration of import suppliers

Imports of China have, for a long time, come mainly from several economies.

As shown in Figure 2.14, the major exporters that export to China accounted for 65.2 percent of China's total imports in 2000. By 2010, the ratio had declined slightly to 64.3 percent. On average, about two thirds of China's imports came from these economies over the 2000 to 2010 period. Japan has been the largest exporter to China, though its share of China's imports has declined steadily from 18.4 percent in 2000 to 12.7 percent in 2010. Republic of Korea has become the second largest exporter to China between 2005 and 2010.

In terms of growth, the emerging economies have made greater inroads into the Chinese market than the developed economies (Figure

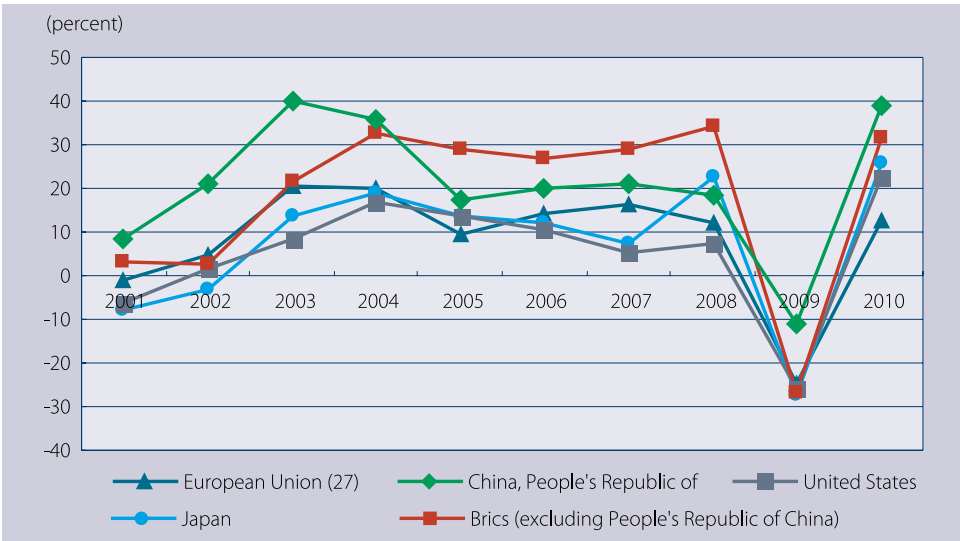

Figure 2.11 Import Growth Rates of Major Economies, 2001-2010

Source: *WTO International Trade Statistics 2011.*

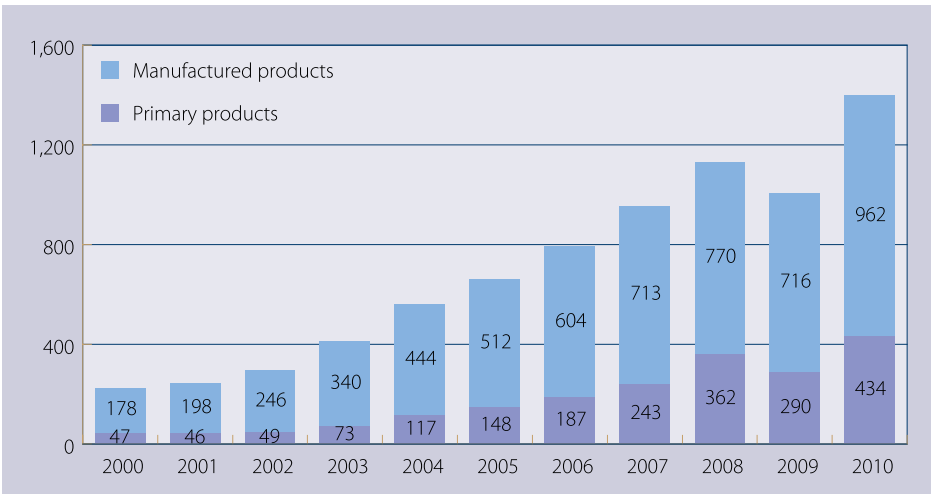

Figure 2.12 Composition of China's Imports, 2000-2010 (USD billion)

Source: *China Statistical Yearbook* (2011).

Figure 2.13 China's Imports by End-use, 2000-2010

Source: *United Nations Commodity Trade Statistics Database.*

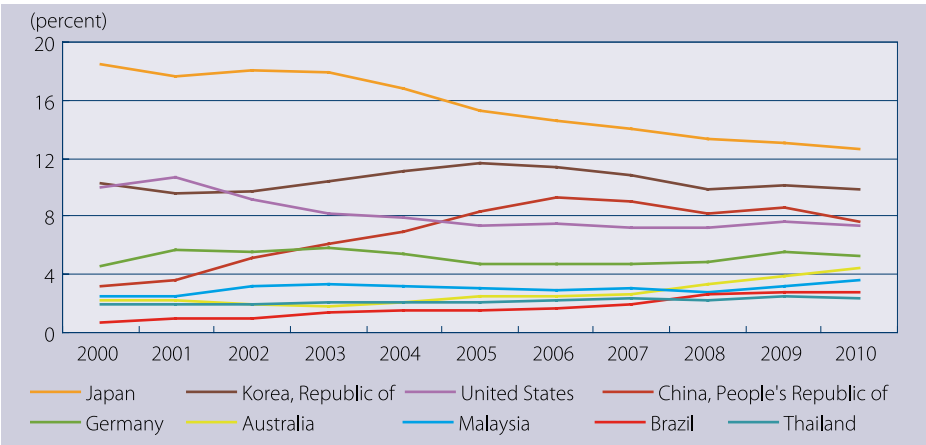

Figure 2.14 Shares of the Major Import Partners of China, 2000-2010

Source: *China Statistical Yearbook (2001-2011).*

2.15). Between 2000 and 2010, the annual growth of China's imports from Brazil, Malaysia, Thailand, Republic of Korea, and Russia reached the impressive rates of 37.1 percent, 24.9 percent, 22.7 percent, 19.5 percent, and 16.2 percent, respectively. Among the developed economies, Australia and German had the highest rate of penetration with annual growth rates exceeding 20 percent.

Figure 2.16 shows the importance of the Chinese market for Japan, Republic of Korea and ASEAN, as a destination for their intermediate goods. For example, in 2010, intermediate imports accounted for 92 percent of China's total imports from Japan (USD698.7 billion), 93.7 percent of the imports from Republic of Korea (USD514.1 billion) and 92.3 percent of the imports from ASEAN (USD105.39 billion). During the whole period from 2000 to 2010, the average share of intermediate inputs in China's imports from Japan, Republic of Korea and ASEAN was 93 percent, 94.5 percent and 93.4 percent, respectively. These sustained high shares reflect the high level of production integration among these four economic entities. However, the close production linkages can make

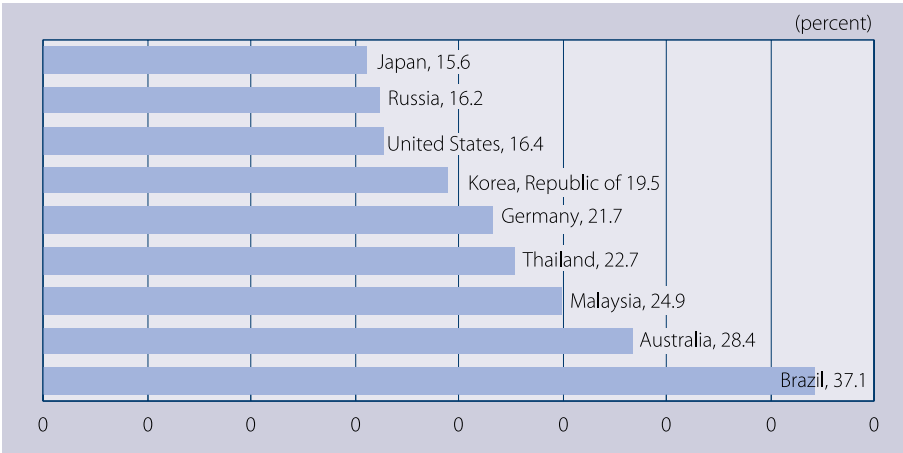

Figure 2.15 The Fastest Growing Import Partners of China, 2000-2010

Source: Authors' calculations based on *China Statistical Yearbook* (2001-2011).

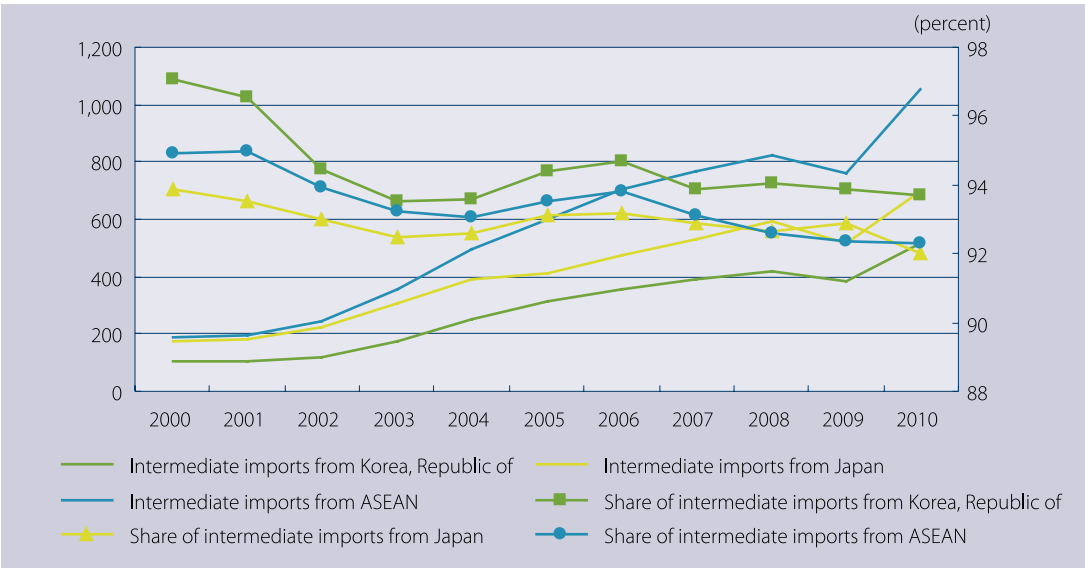

Figure 2.16 Shares of Intermediate Goods in China's Imports from Main Asia Partners, 2000-2010 (USD billion)

Source: United Nations Commodity Trade Statistics Database.

the whole network vulnerable to external shocks (Kuroiwa and Ozeki, 2010).

Dominance of foreign-invested enterprises

Businesses in China that are partially or fully owned by foreign interests ("foreign-invested enterprises" or FIEs) accounted for a slight majority of China's imports. Domestic firms, in particular those privately owned by Chinese nationals, accounted for a disproportionately small share of imports (Figure 2.17). Of China's USD1.4 trillion of imports in 2010, FIEs accounted for 52.9 percent (USD738 billion), while the share for state-owned enterprises (SOEs) was 27.8 percent (USD 387.6 billion) and other types of businesses, including private firms, accounted for only 20 percent of the total (USD269.3 billion).

High dependence on processing trade

As shown in Figure 2.18, a large proportion of China's imports involved the processing trade. Processing imports are closely tied to the export-oriented FIEs in China. By importing intermediate inputs from abroad and combining them with cheap domestic resources in China to reduce costs, the export-oriented FIEs have made China their export platform. Throughout the period from 2000 to 2010, the processing trade accounted for roughly 40 percent of China's imports, reaching 42 percent in 2005. After 2006, the share of processing trade in China's imports started to decline while the share of ordinary imports rose gradually. In 2010, the share of ordinary imports reached 55 percent while the share of the processing trade declined to a 30 percent low.

2.4.3 Reductions of Tariff and Non-tariff Barriers

WTO plus tariff reductions

To fulfill its WTO commitment and alleviate the pressure on the RMB to appreciate in value, China has put more emphasis on the liberalization of its

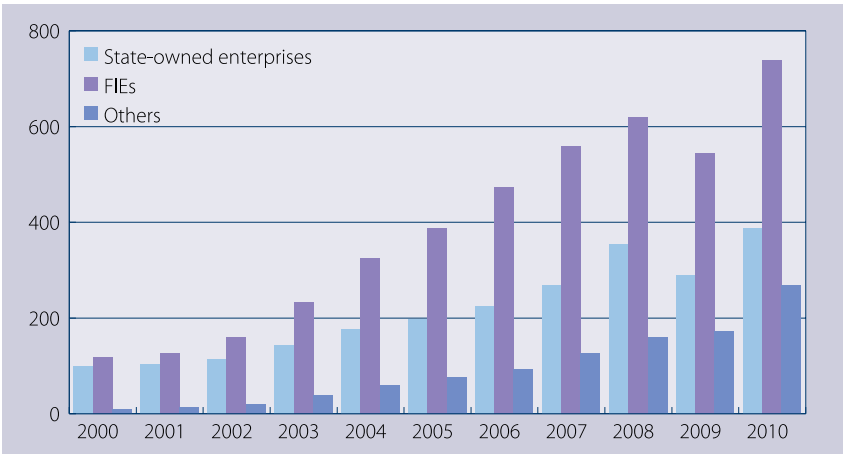

Figure 2.17 China's Imports by Enterprise Types, 2000-2010 (USD billion)

Sources: Data for 2000-2004 came from China Foreign Trade Database while data for 2005-2010 came from the website of the General Administration of Customs of China.

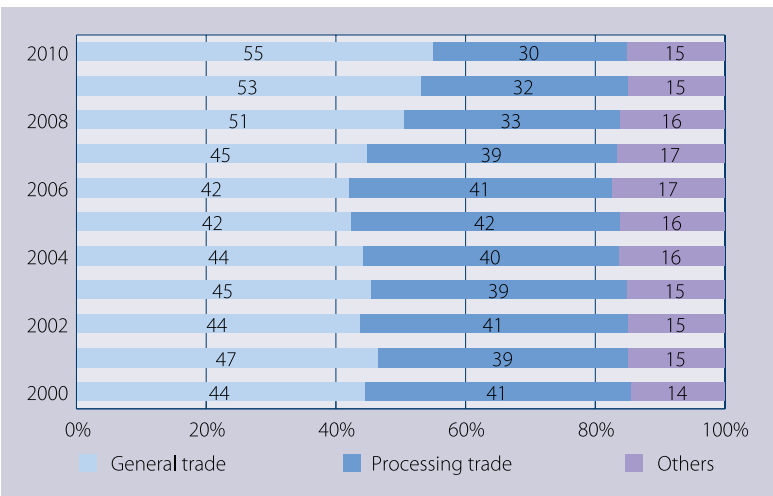

Figure 2.18 China's Imports by Different Trade Types, 2000-2010

Sources: China Macroeconomic Database and the website of the General Administration of Customs of China.

imports in recent years. Before joining the WTO, China's average tariff was 15.3 percent. The average bound rate was reduced to 9.9 percent on all goods in 2005. In fact, import tariff applied was lower than the bounded tariff. In 2005, the tariff rate based on the weighted average of the value of the imports was only 4.83 percent. However, if the calculation was based on the actual tariff collected that year, the tariff rate was even lower at 1.9 percent. If zero tariffs were assumed for the processing trade, and processing imports were excluded from the calculation, the result show that the tariff actually levied averaged only 3.25 percent.

China's tariff reductions have gone beyond its WTO commitments, progressing towards WTO plus. In 2010, to fulfill its WTO commitments, the average tariff was reduced to 9.8 percent, a level that was substantially lower than the average applied in the developing economies (46.6 percent), while its applied tariff rate was as low as 4.29 percent.

Table 2.11 shows the tariffs applied to different trading partners. In general, from China's accession

Table 2.10 Summary of China's Tariff Reductions after Its WTO Accession

Year	Details of Reductions
2002	Reduced tariffs on more than 5,300 commodities, with average tariff rates reduced from 15.3 percent in 2001 to 12 percent.
2005	Reduced tariffs on more than 900 commodities, with average tariff rates reduced from 10.4 percent in 2004 to 9.9 percent.
2006	Import tariffs on 42 types of vehicles reduced to 25 percent, and on auto parts to 10 percent. Before China's WTO accession, tariffs on these vehicles were from 70 to 80 percent, and 18 to 65 percent for auto parts.
2010	Following a reduction of tariff rate on 6 categories of commodities including fresh strawberries, China's average tariff level was reduced to 9.8 percent, thus, fulfilling all its WTO obligations for accession.
Early 2011	Tariff reductions on 600 commodities.
July 1, 2011	Tariffs reduced on 33 commodities, mainly energy and raw materials.
January 2012	Provisional reductions on the tariffs of 730 commodities including energy and natural resource products. The average tariff rate was reduced to 4.4 percent.

Source: Based on information available on the websites of the Ministry of Finance and the General Administration of Customs.

Table 2.11 Weighted Average of Applied Import Tariffs to Different Partners, 2001-2010 (%)

	General	WTO Members	EU27	MLSA	ML
2001	14.1	14.43	13.57	8.97	15.41
2003	6.49	6.64	8.6	5.03	4.92
2004	6.00	6.14	7.35	3.7	4.66
2005	4.83	4.98	6.65	3.31	2.95
2006	4.29	4.41	6.42	5.11	2.8
2007	5.11	5.35	7.22	4.51	3.36
2008	4.66	4.89	6.82	4.16	2.81
2009	4.23	4.44	7.01	1.92	2.2
2010	4.29	4.52	7.96	1.73	2.04

Notes: MLSA refers to the middle-and low-income South Asian countries; ML refers to other middle- and low-income countries.

Source: WITS Trains database.

to WTO in 2001 to 2010, import tariffs were reduced to 30.43 percent of the level in 2001 (i.e., a reduction of almost 70%). Tariffs applied to imports from middle- and low-income economies saw the greatest reductions, as the rate in 2010 was just 13.24 percent of the level in 2001. In the case of middle- and low- income countries in South Asia, the tariff on their exports was reduced to 19.29 percent of its level in 2001. Reductions for the EU countries and the WTO members in general were more modest. In 2010, the tariffs applied to the goods from the EU (27 countries) were 58.66 percent of what they were in 2001 and for WTO members in general, 31.32 percent. It is clear that China's tariff reductions have tended to favour the underdeveloped countries. There was further evidence of this when the Chinese authorities pledged to unilaterally phase in over the 2012-2015 period a zero tariff rate on 95 percent of the exports from the underdeveloped world.

Table 2.12 shows the changes in the tariff structure for the period from 2001 to 2010. The average applied tariff on the imports of primary goods was reduced by 75.3 percent, from 26.93 percent in 2001 to 6.66 percent in 2010, while on manufactured goods it was cut by 56.6 percent, from 13.21 percent in 2001 to 5.73 percent in 2010. An examination of the relationship between

Table 2.12 Weighted Average of Applied Import Tariffs for Different Commodity Groups, 2001-2010 (%)

	0	1	2	3	4	5	6	7	8
2001	33.38	41.66	21.72	8.2	29.7	12.51	13.25	12.37	14.7
2003	14.89	20.42	5.35	2.1	31.69	8.88	7.55	5.29	8.59
2004	23.86	15.91	5.62	1.86	32.47	8.14	6.79	4.48	7.94
2005	11.43	12.12	3.52	1.57	12.28	7.27	6.24	3.93	7.49
2006	12.89	11.72	4.69	1.28	7.8	6.06	5.87	3.36	6.5
2007	10.89	11.95	3.43	1.41	7.93	6.22	5.78	5.44	7.93
2008	10.22	11.88	2.55	1.06	7.77	5.74	5.46	5.05	7.58
2009	9.44	12.42	1.52	0.76	8.06	5.48	4.52	5.37	7.26
2010	11.14	12.22	1.6	0.74	7.59	5.2	4.56	5.92	7.24

Notes: Following the Standard International Trade Classification (SITC), 0-4 refers to primary goods, 5-8 refers to manufactured goods, 9 refers to not elsewhere classified commodities. It was excluded due to its zero tariff value.

Source: WITS Trains database.

industries and their respective tariff levels showed that China's import tariffs tended to provide more protection to the competitive industries than the non-competitive industries.

Removing non-tariff barriers

In accordance with its WTO obligations, China eliminated all the non-tariff barriers such as import licenses and import quotas. In 2004, China enacted the new *Foreign Trade Law* and dispensed with trading rights. In January 2005, China abolished quantitative restrictions on imports. However, China has published six *Catalogs of Goods Prohibited from Import* which aim to protect the environment and close outdated production facilities. In September 2005, China adopted new regulations which covered tariff quotas, non-automatically renewable import licenses and renewable import licenses. The new tariff quota promises to be administered under the principle of transparency and predictability. Consistency, fairness and non-discrimination were applied to the imports of some agricultural goods and fertilizers. The previous practice of granting import licenses based on performance was abolished. The non-automatic license was applied

to goods restricted by international conventions, mainly covering health- and environment-sensitive chemical goods. The purpose of the automatic license was to monitor the quality of imported agricultural goods and mining products. Textiles and mechanical and electrical products were exempted from the automatic licensing.

2.4.4 Moving toward Balanced Trade through Import Expansion

In recent years, China's large trade surplus has caused much debate in the world. In the Eleventh Five-Year Plan (2006-2010), the Chinese government set the goal of bringing its international trade into balance. To achieve this goal, the authorities adopted policies to restrict the export of energy-intensive, resource-intensive and environment-unfriendly goods in 2006. After the global financial crisis happened in 2008, however, the policy shifted to import expansion to achieve trade balance, thus indirectly reducing the pressure on the RMB to appreciate relative to other currencies. In recent years, the Chinese government had adopted a series of policies to promote, and relax the restrictions on imports. For example, in 2009, the National Development and Reform Commission published the *Catalog of Technologies and Products Encouraged to Import*. Its objective was to support the import of high-tech goods, core equipment and parts, natural resources and raw materials through subsidized low interest rates. After the import tariff was reduced to 9.8 percent in 2010, China further reduced the tariffs on some raw materials and final consumer goods; adopted policies to promote the sale of goods produced via processing trade in the domestic market; improved trade facilitation by providing better services for Customs clearance, inspection and quarantine, trade financing, etc., ; expanded the coverage of goods from underdeveloped economies subject to zero tariff treatment; and organized events and activities to promote foreign exports to China.

Partly because of these policy measures, China's trade surplus showed clear signs of shrinking on a year-to-year basis. In 2011, China's imports grew at a pace that was 4.6 percent higher than the previous year; the trade surplus narrowed by 14.5 percent as compared to 7.2 percent in 2010 (which represented a reduction of USD26.37 billion); and the trade surplus fell to 4.3 percent of total trade, 1.8 percentage points lower than the previous year.

2.4.5 Challenges and New Opportunities for China's imports

Security of oil supply

The Chinese economy has become increasingly dependent on imports of energy and minerals. According to statistics from the National Bureau of Energy, from 2000 to 2009, China's annual oil consumption increased from 241 million tons to 388 millions tons, with an average annual growth rate of 6.78 percent. Over the same period, oil imports increased from 59.69 million tons to 199 million tons. As such, the ratio of oil imports to total consumption rose from 24.8 percent in 2000 to 51.29 percent in 2009. It was predicted that by 2020, the ratio of imports to total consumption could reach 65 percent, i.e. roughly two-thirds of China's oil requirements would depend on foreign supply. The danger is that volatility of international oil prices, political instability in the oil producing countries, and general disorder in the global oil market could adversely affect the security of China's oil supply and hence its future economic development.

Throughout this period, China's oil imports were being supplied from a few geographically concentrated countries. According to Chinese Customs, China imported a total of 204 million tons of crude oil in 2009. The top 10 suppliers were: Saudi Arabia (41.953 million tons), Angola (32.172 million tons), Iran (23.147 million tons), Russia (15.304 million tons), Sudan (12.191 million tons), Oman (11.638 million tons), Iraq (7.163 million tons), Kuwait (7.076 million tons), Libya (6.344 million tons) and Kazakhstan (6.006 million tons). China's major oil suppliers were highly concentrated in the Middle East, which accounted for over 50 percent of its oil imports. Africa was also an important supplier of oil but political instability posed a constant threat to China's security of supply.

High tech export restrictions

China's current effort to foster the growth of knowledge-based industries has bolstered the demand for hi-tech imports. Since 2006, hi-tech goods has accounted for over 60 percent of China's imports of mechanical and electrical goods. China has nevertheless faced many discriminatory restrictions when it has tried to import hi-tech products. For example, the US *Export Commodity Control List* published by the Bureau of Industry and Security covers 10 major items and for each of

these items there are discriminatory restrictions on exporting to China. Examples of restricted goods include nuclear materials and equipment, chemicals, microorganisms and neomycin, certain processing materials, electronic equipment, computers, telecom and information security, sensors and lasers, navigation and aviation electronic equipment, ships, propulsion systems, spacecraft and related equipment. From 2001 to 2010, the share of China's hi-tech goods imported from the US declined from 18.3 percent to 6.3 percent. The EU also prohibits the export of advanced electronic information technology, new materials, sensors and lasers, ships and marine equipment to China. Japan has its own set of export restrictions applicable to China. Such trade protection measures for high-tech products not only harm the Chinese economy but also exacerbate the trade imbalance and can adversely affect economic growth and employment in the developed economies themselves.

2.4.6 Luxury Goods Imports

Although the global market for luxury goods has seen a downturn in recent years, this has not been the case in China where there has been remarkable growth in luxury goods consumption. Despite the global economic recession in 2009, China's luxury goods market grew by 16 percent, only slightly lower than the 20 percent growth level seen in previous years, and was significantly higher than many key markets in the rest of the world. According to statistics released by the World Luxury Association, China's expenditures on luxuries accounted for 25 percent of the world total (USD8.6) in 2009, surpassing the US and becoming the runner-up worldwide to Japan.

The statistics from Goldman Sachs showed that sales of luxury goods in China have been growing faster than anywhere else in the world for three years. The annual growth rate in China has risen from less than 1 percent in 1998 to 10 percent in 2010. China's expenditures on luxuries is expected to exceed Japan and to rank first globally sometime in the coming three years. According to the latest statistics of the World Luxury Association, China's spending on luxuries expenditure reached USD12.6 billion in 2011 (not including business executive jets, yachts and luxury cars), accounting for 28 percent of such sales worldwide. And the growth rate is expected to accelerate in the next five years. McKinsey & Company estimates that China's luxury expenditures may reach USD27 billion in 2015, in which case China will surpass Japan to become the world's largest consumer of luxury items.

Although China has become a major participant in the world luxury good market, domestic luxury good prices are way out of line with prices available in the international market (Figure 2.19)[1]. For example, the price of a luxury wrist watch in the domestic Chinese market can be 100 to 350 percent higher than abroad. For jewelry, the price difference between the domestic and the world market ranges from 20-80 percent. As for luxury bags and leather-made goods, for which Chinese consumers show the most willingness to purchase when travelling overseas, statistics show a 30 percent price difference between the two markets. For perfumes and cosmetics, which are also popular with Chinese consumers, the price difference for the perfumes is about 35-60 percent, and about 40-120 percent (maximum of 188.5 percent) for the cosmetics.

High taxes drive consumers to spend their money overseas where luxury prices tend to be much lower and, as a result, Chinese consumers now purchase about half of their luxury goods in foreign markets. Chinese expenditures abroad on luxury items during the Chinese Lunar New Years of 2010 and 2011 were USD4.9 billion and USD5.6 billion, respectively. According to the latest statistics of the World Luxury Association, Chinese spending on luxury items during the 2012 Lunar New Year reached USD7.2 billion, which was 15 percent higher than estimated and a new record. This was tantamount to 62 percent of European luxury expenditures, 28 percent of North America's, and 69 percent of the luxury expenditures in Hong Kong (SAR) and Macao (SAR).

Taxes collected by Chinese authorities from imports comprise the VAT (value added tax) , the consumption tax and the import tariff. Differences in taxes between jurisdictions explains most of the price differences between luxury markets in China and overseas. In 2010, China's VAT and consumption taxes on imports accounted for 29.5 percent of the central government revenues. A Swiss watch selling

1 The price gap between China and the overseas market is based on a survey of prices in and outside China in 2011 for seven categories of luxury goods (i.e., jewelry, watches, bags, leather shoes, liquor, perfumes, and cosmetics), 65 brands, and 115 products. The survey covers the Chinese mainland, Hong Kong (SAR), Macao, China, France, Italy and other European areas, and the United States. Prices are both from the taxed markets and the duty-free markets.

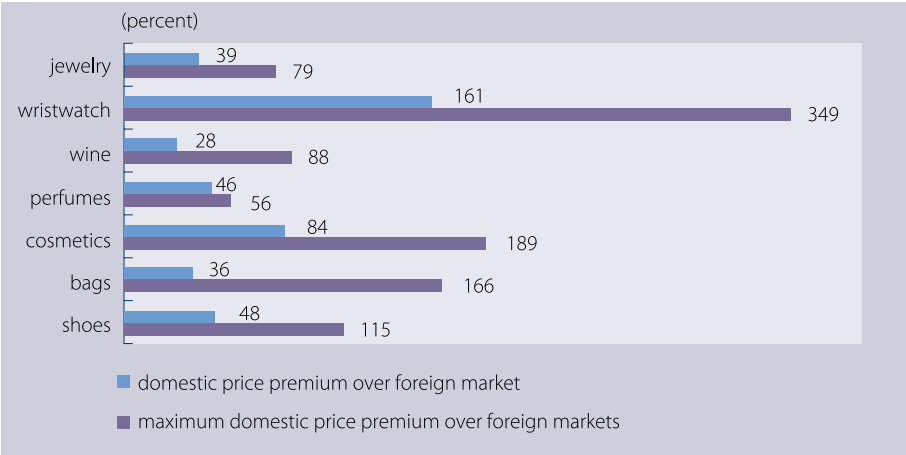

Figure 2.19 Price Comparisons between Domestic Market and Overseas Markets, 2011

Source: *2011 China Luxury Report*, UIBE.

for 2,700 RMB contains 392 RMB of VAT (17 percent), 623 RMB of consumption tax (30 percent), and 267 RMB of tariff (11 percent). Chinese taxes help to keep luxury good prices high, in fact much higher than in most markets in developed economies. For example, they are 4.17 times higher than the US, 3.76 times higher than Japan, and 2.33 times higher than the EU15 countries. Therefore, lowering taxes would go a long way to reducing the price disparity between luxury goods in China and elsewhere. Doing so could bring back sales from overseas and potentially contribute tens of billions of US dollars to the Chinese economy through increased domestic consumption. So there is a need for China to further lower its taxes and tariffs.

2.5 Higher Interdependence among Asian Neighbors

To measure the extent to which economies in Asia are integrated through trade, this Appendix uses three different indices of trade dependence. All three indices lie between zero and one, with a higher number representing a higher degree of economic integration. In an extreme case where the index value between two economies (or regions) is equal to zero, then the first economy does not trade with the second economy and is thus not integrated with it. On the other hand, if the index is equal to one, then the first economy trades with the second economy to the exclusion of trade with all the other economies.[1]

Table 2.13 shows the trade inter-dependence of selected Asian economies in 2010. For example, China's trade dependence index with Japan in 2010 was 10.0 percent, while that of Japan with China was 20.7 percent. It suggests that Japan is more dependent on China in trade. Many economies have a high dependence on the Chinese mainland, through trade, especially Hong Kong (SAR): nearly half of the foreign trade, imports plus exports of Hong Kong (SAR), was with the Chinese mainland. This observation has already been described earlier

1 To explain the meaning of three indices and to explain how they are computed, consider economies X and Y in the region. Then the following three indices are defined:

a) Index of trade dependence of economy X on economy Y, TD_{XY}. This index is equal to the ratio of the trade volume (exports + imports) between X and Y to the trade volume between X and the rest of the world. This index measures how close economies X and Y are as compared with how close economy X is with the rest of the world. Note that trade dependence of economy X on economy Y in general is not the same as the trade dependence of economy Y on X, i.e. TD_{XY} in general is not equal to TD_{XY}.

b) Index of trade dependence of economy X on a region A (such as Asia), TD_{XA}. This index is equal to the ratio of the trade volume (exports + imports) between X and A to the trade volume between X and the rest of the world.

c) Index of trade interdependence of a region A (such as Asia), TD_A. This index is equal to the ratio of the trade volume (exports + imports) of the economies in region A among themselves to the trade volume of these economies with the rest of the world (which includes trade with other economies in the region). This index measures how the economies in the region are interdependent with each other through foreign trade.

Table 2.13 Trade Dependence Indices of Selected Asian Economies on Each Other, 2010 (%)

on \ of	China, People's Republic of	India	Japan	Korea, Republic of	Hong Kong, China	Singapore	United States
China, People's Republic of	-	10.3	20.7	21.1	48.4	10.6	16.0
India	2.1	-	1.0	1.9	2.3	3.4	1.7
Japan	10.0	2.3	-	10.4	6.8	6.2	6.2
Korea, Republic of	7.0	2.4	6.2	-	3.1	4.9	3.0
Hong Kong, China	7.8	3.0	3.0	3.1	-	6.7	1.0
Singapore	1.9	2.9	2.3	2.6	4.5	-	1.6
United States	13.0	1.4	6.4	3.1	2.2	2.0	-

Source: United Nations ComTrade database.

in this report. Japan and Republic of Korea also depend much on the Chinese economy, with a trade dependence index of roughly 21 percent. While India and Singapore depend less on the China as their trade dependence index with China was approximately 10 percent.

China, however, is less trade-dependent on these economies because its foreign trade is much more diversified than what these economies can provide, and because it trades a lot with non-Asian economies. India, another big economy in the region, is also quite diversified in terms of its trading partners. However its trade dependence index with China in 2010 was only 10.3 percent this was still equal to its trade dependence with its biggest trading partner, the United Arab Emirates (i.e., the trade dependence index was also 10.3 percent).

According to our measure, the United States is more dependent in trade on China than vice versa. the US has a ratio of 16.0 percent while China's dependence on the US is only 13.0 percent. It is different from the common perception that China is more dependent on the US in trade than the other way around. The reason for this result is that the dependence here is measured on total trade (export pus import). However, if the dependence is measured by the export only[1] China would depend more on the US market (18.0 percent) than *vice versa* (7.2 percent).

Table 2.13 also gives the trade dependence between the United States and some Asian economies. The dependence ratio of the US on the Asian economies collectively added to 29.5% compared to 28.1% conversely. Thus, the U.S. is more trade dependent on these select Asian countries than vice versa.

Table 2.14 presents indices of the overall trade dependence of selected economies in Asia in 1999, 2004, and 2008-2010. China, the largest economy in the region, had an index fluctuating narrowly around the 50 percent mark during these periods. This indicates that China traded roughly to the same extent with other Asian economies as it did with non-Asian economies. For other economies, the general trend was for the indices to rise over time, meaning that these economies were trading more and more with other Asian economies. Some of them, including Hong Kong (SAR), Thailand, India, Japan, Malaysia, Republic of Korea, and Singapore, showed a steady rise in their trade dependence indices with Asia. Another interesting observation is that 10 of the 18 economies had trade dependence indices with Asia in 2010 that were greater than 50 percent. This means that these economies traded more with other economies in Asia than with non-Asian economies. Reflecting its interest in expanding its trade in the Asia-Pacific region, the US has also increased its trade dependence ratio steadily, from 33.2% in 1999 to 36.0 percent in 2009 and then to 36.5 percent in 2010, as Table 2.14 shows.[2]

1 That is the amount of country X's export to country Y divided by country X's total export.

2 The computation method for the United States in Table A2 is different from the one used in the Appendix. It is the ratio of total US trade with Asia over that with the whole world. It is worth noting, however, that since the U.S. is not an Asian economy; this approach may underestimate the its dependence ratio.

Table 2.14 also shows the trade dependence indices for the Asian economies as a whole during these five years. Several trends in these indices should be noted. First, they are increasing, from 46.2 percent in 1994 to 52.6 percent in 2009, and then to 53.5 percent in 2010. These numbers strongly support the claim that Asia is becoming increasingly integrated. Second, because they are around 50 percent, about half of the Asian economies' trade was internal to the region. In fact, in both 2004 and 2008-2010, the indices exceeded 50 percent so it is safe to say that the Asian economies are well integrated through trade and are becoming increasingly so over time.

Table 2.14 Trade Dependence Indices of Selected Asian Economies, 1999, 2004, and 2008-2010 (%)

Economy	1999	2004	2008	2009	2010
Armenia	28.0	27.6	28.9	27.7	29.4
Azerbaijan	23.8	35.4	24.7	28.6	30.9
China, People's Republic of	49.4	50.8	48.3	48.3	47.8
Cyprus	21.9	21.0	22.1	19.5	20.3
Hong Kong, China	61.1	68.5	71.4	71.2	73.2
India	40.3	38.0	n.a.	53.5	54.4
Israel	15.2	19.6	23.0	22.7	25.3
Japan	38.3	49.1	54.0	55.1	56.0
Jordan	48.5	53.0	58.8	56.6	59.7
Korea, Republic of	48.3	56.3	60.6	59.7	60.1
Lebanon	27.8	36.0	37.5	31.1	36.2
Macao, China	43.4	55.9	60.9	60.0	56.7
Malaysia	54.1	59.8	n.a.	65.2	66.1
Saudi Arabia	17.6	9.7	11.0	13.6	12.6
Singapore	56.3	63.5	65.7	64.6	65.4
Sri Lanka	44.5	64.0	56.5	53.5	58.3
Thailand	53.2	62.6	64.8	64.4	65.8
Turkey	16.1	19.1	26.2	26.2	29.5
US	33.2	34.4	34.7	36.0	36.5
Asia	46.2	51.3	51.3	52.6	53.5

Source: *United Nations ComTrade database.*

Note: n.a. indicates data are not available.

Chapter 3
Tourism and Trade in Services

3.1 Features of Asian Tourism

3.1.1 International Tourism at Record Levels

In recent years, tourism has accounted for about 5 percent of the world's GDP. After the brief declines in 2008 and 2009 in the wake of the spreading financial crisis, international tourist arrivals hit new record levels in 2010 and 2011 in spite of a series of major natural disasters, political upheavals, and other events that hurt the tourism industry.

The year 2010 saw a healthy recovery of the international tourism market. International tourist arrivals grew by 6.6 percent to 940 million (Table 3.1)[1]. Starting in late 2008, the global financial crisis precipitated a steady decline in tourism over a period of 19 months. However, this downward trend was reversed in 2010 with all regions of the world enjoying a recovery in international tourist arrivals.

In 2011, the tourism industry continued to grow but at a slower pace. International tourist arrivals grew by 4.3 percent to 980 million (Table 3.1)[2]. Since the beginning of 2011, international tourism have suffered a number of serious setbacks including the earthquake and Tsunami in Japan and widespread political upheaval in the Middle East which led to an actual decline in tourism in this region.

From a historical perspective, international tourist arrivals grew on average by 3.5 percent annually from 2000 to 2011. With the exception of Europe (2.4 percent) and the Americas (1.8 percent), the average annual growth rates of the other regions were above the international average during this period. In 2010, the Asia and the Pacific region, as well as the Middle East recorded growth rates higher than 10 percent (Table 3.1). However, political turbulence derailed the prospects of further growth of tourism in the Middle East region in 2011. There, international tourist arrivals fell by 8 percent reflecting the real or perceived danger faced by tourists in the region. On the other hand, international tourist arrivals in Europe remained strong in 2011 (5.5 percent) despite persistent economic uncertainty in the region.

Figure 3.1 below illustrates the relative market shares in 2011 for tourism in the five regional markets under review. The more popular international tourist destinations also tended to enjoy the higher growth rates in 2011. As illustrated in Figure 3.1, Europe attracted the most tourists with a market share of 51.4 percent. The Asia and Pacific region placed second both in terms of popularity and tourism growth. The Americas remained in third place with a 15.9 percent share of international tourist arrivals worldwide. The Middle East region was in fourth place with a market share of 5.6 percent, and saw a decline in international tourist arrivals. This was only a little higher than Africa's 5.1 percent share which was the least favored tourist destination, notwithstanding a slight increase in its tourism in 2011.

International tourism revenues, or receipts[3], are

1 See, for instance, UNWTO Tourism Highlights 2011 Edition. World Tourism Organization. www.unwto.org.

2 International Tourism Reaches One Billion in 2012. Source: World Tourism Organization. www.unwto.org.

3 The brief report "International Tourism to Reach One Billion in 2012" published by UNWTO did not go into detail about international tourism revenues in 2011. So the analysis of revenues in this paper is derived from data for 2010 from the UNWTO report "Tourism Highlights 2011 Edition".

Table 3.1 International Tourist Arrivals

	International Tourist Arrivals (Million)				Market Share (%)	Change (%)			Average Annual Growth*3 (%)
	2008	2009	2010*1	2011	2011*2	2009/ 2008	2010*/ 2009	2011/ 2010	2000-2011
World	**917**	**882**	**940**	**980**	**100**	**-3.8**	**6.6**	**4.3**	**3.5**
Europe	485.2	461.5	476.6	503	51.4	-4.9	3.3	5.5	2.4
Asia and the Pacific	184.1	180.9	203.8	216	22	-1.7	12.7	6	6.3
Americas	147.8	140.6	149.8	156	15.9	-4.9	6.4	4.1	1.8
Africa	44.4	46	49.4	50	5.1	3.7	7.3	1.2	6.0
Middle East	55.2	52.9	60.3	55	5.6	-4.3	14.1	-8	8.1

Note: Europe includes Northern Europe, Western Europe, Central and Eastern Europe and Southern Mediterranean Europe. Asia and the Pacific include Northeast Asia, Southeast Asia, Oceania and South Asia. Americas includes North America, the Caribbean, Central America and South America. Africa includes North Africa and sub-Saharan Africa.

Source: 1. UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org
2."International Tourism to Reach One Billion in 2012", World Tourism Organization, www.unwto.org

*1 =provisional figure or date; *2=author calculated the data according to the latest UNWTO World Tourism Barometer;
*3 = author calculated the data according to the latest UNWTO World Tourism Barometer and UNWTO Tourism Highlights 2011.

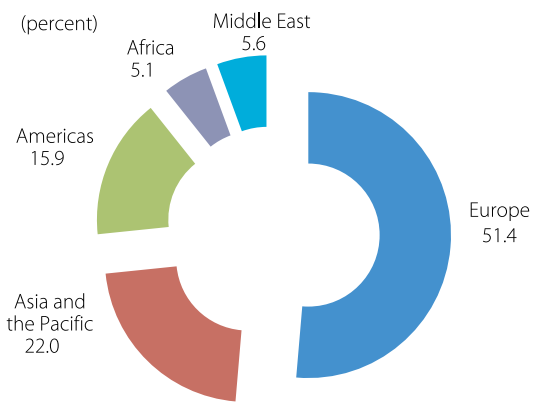

Figure 3.1 Market Share of International Tourist Arrivals in the Five Regions, 2011

Note: The author calculated the data according to the latest UNWTO World Tourism Barometer.

Source: "International Tourism to Reach One Billion in 2012", World Tourism Organization, www.unwto.org

another important indicator of the economic health of the international tourism market. Receipts grew by 4.7 percent to USD919 billion in 2010, only slightly lower than the growth rate of international tourist arrivals (Table 3.2). There are three reasons for the difference in growth between arrivals and revenues. First, the international tourism industry operates in a very competitive market environment. Second, it tries to contain costs in order to remain price competitive. Third, tourists prefer to take shorter vacations in cheaper neighboring destinations.

International tourist arrivals in Europe grew by 3.3 percent in 2010. This was the lowest increase among the five regions and mainly reflected economic uncertainty in the wake of the financial crisis, a volcanic eruption over Iceland which curtailed air travel over the north Atlantic ocean, and other adverse circumstances. Though the number of international tourist arrivals in this region had begun to recover, revenues in 2010 fell by USD4.7 billion or 0.4% relative to the previous year (Table 3.2).

As mentioned previously, international tourist arrivals in the Asia and Pacific region grew by more than 10 percent in 2010. The region accounted for almost half the growth in the world tourism market that year. Revenues from international tourism reached USD248.7 billion reflecting the increasing popularity of countries such as China (9.4 percent), Malaysia (3.9 percent) and so on as favored destinations of world tourism.

Except for Guatemala (-12.4 percent), all the tourism destinations in the Americas had recovered by 2010 from the economic downturn and a epidemic, enjoying a 6.4 percent increase in international tourist arrivals. International tourism revenues in the Americas also grew by 5.0 percent (Table 3.2). The top three tourism destinations in

Table 3.2 International Tourism Revenues

	International Tourism Receipts Local Currencies, Constant Prices Change (%)			Share (%)	Receipts (USD)			Receipts (€)		
					Billion		Per Arrival	Billions		Per Arrival
	2008/ 2007	2009/ 2008	2010*/ 2009	2010*	2009	2010*	2010*	2009	2010*	2010*
World	**1.7**	**-5.6**	**4.7**	**100**	**851**	**919**	**980**	**610**	**693**	**740**
Europe	-0.9	-6.7	-0.4	44.2	410.9	406.2	850	294.6	306.4	640
Asia and the Pacific	4.6	-0.7	12.8	27.1	203.1	248.7	1,220	145.6	187.6	920
Americas	4.9	-9.9	5	19.8	166.2	182.2	1,220	119.1	137.4	920
Africa	-2.5	-4.1	4	3.4	28.8	31.6	640	20.6	23.9	480
Middle East	5.5	0.8	14.4	5.5	42	50.3	830	30.1	37.9	630

Note: *=provisional figure or date

Source: UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org

the Americas, i.e., the US, Canada and Mexico, all showed strong growth.

The growth rate of international arrivals in Africa was 3.7 percent in 2009. In 2010, its growth rate was above the world average with international tourist arrivals rising by 7.3 percent and revenues by 4.0 percent. This mainly reflected a recovering global economy and the hosting of the World Cup in South Africa that year.

The Middle East region recorded the highest growth rate (14.4 percent) in international tourism receipts among all the regions. This can be largely attributed to the rising price of oil, and hence higher incomes, and the resulting growth in intra-regional tourism.

3.1.2 Northeast Asia Leads the Asian Tourist Trade

This section provides a detailed analysis of current trends in the international tourism market as it relates to Northeast Asia, Southeast Asia and South Asia.

The international tourist arrival data (Table 3.3) indicates that Northeast Asia accounted for more than half of the Asia total with about 111.6 million arrivals, corresponding to 11.8 percent of the world's tourism market and 56 percent of the Asian market (Figure 3.2). As such Northeast Asia dominated international tourism in Asia. Though there are many isolated regions or countries such as DPRK and Mongolia where tourism continues to develop slowly, Northeast Asia is blessed with abundant natural and cultural attractions that are easily accessible to the tourists. Natural attractions include spring in Japan, the seaside of Republic of Korea and the mountains of DPRK. Cultural attractions include ancient Chinese culture, the Japanese tea ceremony, and Japanese sumo. These attractions have all served to bolster intra-regional tourism in Northeast Asia.

In 2011, there were 75.9 million international tourist arrivals in Southeast Asia, accounting for 7.7 percent of the world total and 37 percent of the Asia total (Table 3.3 and Figure 3.2). Unlike Northeast Asia and South Asia, which saw brief downturns in 2009, Southeast Asia enjoyed continuous growth in international tourist arrivals since 2008. It therefore avoided the global downturn in arrivals during 2008 and 2009. Its success could be attributed to the world-renown beauty of its tropical seascapes and its ancient religious culture. As such it offers many scenic spots for vacationing and escaping the winter as well historic sites to visit and Buddhist temples to worship in Zhou (2009).

International tourist arrivals in South Asia were 12.1 million in 2011, which accounted for 1.2 percent of the world market and 6 percent of the Asian market. South Asia is the region between the southern part of the Himalayan mountains and the Indian Ocean. It is a region with a long history and is the birthplace of Hinduism and Buddhism. Abundant tourist facilities make it an ideal destination for people to explore the natural surroundings, ski in the mountains, and sightsee. Tourism growth in South Asia is keeping pace with that of the other two Asian sub-regions. Its growth

Table 3.3 International Tourist Arrivals in Asia, 2011

	International Tourist Arrivals (Million)				Market Share (%)	Change (%)			Average Annual Growth*3 (%)
	2008	2009	2010*1	2011	2011*2	2009/2008	2010*/2009	2011/2010	2000-2011
Northeast Asia	100.9	98	111.6	111.6	11.8	-2.9	13.8	9	6.9
Southeast Asia	61.8	62.1	69.6	75.9	7.7	0.5	12.1	4	6.6
South Asia	10.3	9.9	11.1	12.1	1.2	-3.6	11.9	9	6.4

Notes: South Asia comprises nine destinations: Afghanistan, Bangladesh, Bhutan, India, Iran, the Maldives, Nepal, Pakistan, and Sri Lanka.
*1=provisional figure or date; *2=author calculated the data according to the latest UNWTO World Tourism Barometer;
*3=author calculated the data according to the latest UNWTO World Tourism Barometer and the UNWTO Tourism Highlights 2011.

Source: 1. UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org
2. "International Tourism to Reach One Billion in 2012", World Tourism Organization, www.unwto.org

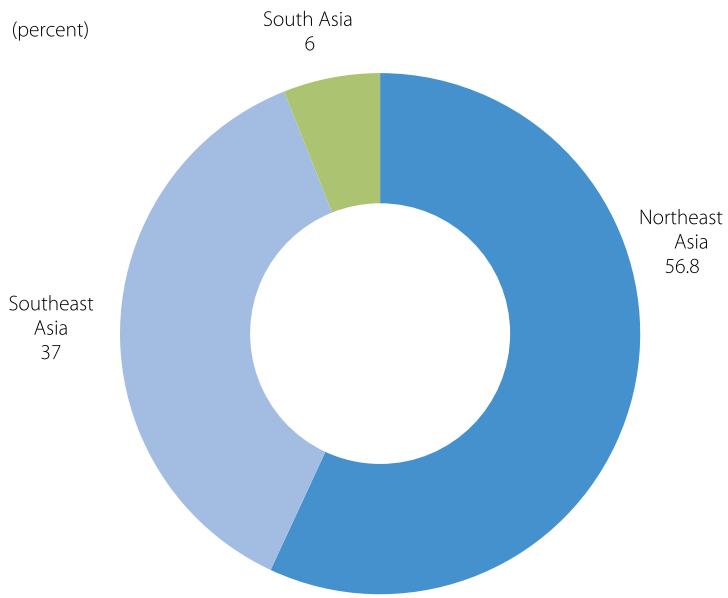

Figure 3.2 Market Share of International Tourist Arrivals in the Asian Sub-regions, 2011

Note: Author calculated the data according to the latest UNWTO World Tourism Barometer.

Source: "International Tourism to Reach One Billion in 2012", World Tourism Organization, www.unwto.org

rate was 11.9 percent in 2010 and 9 percent in 2011.

As with international tourist arrivals, tourism receipts of the sub-regions in Asia[1] all grew in 2010 (Table 3.4). Receipts in Northeast Asia increased by USD21.2 billion, by USD14.5 billion in Southeast Asia, and by USD4 billion in South Asia.

Categorizing total tourism revenues by the number of arrivals for each Asian sub-region indicates that tourists tended to spend more when visiting South Asia than they did in the other two sub-regions. Receipts per arrival averaged USD1,710 in South Asia which was USD610 more than in Northeast Asia and USD730 more than in Southeast Asia. Although

1 The brief report "International Tourism to Reach One Billion in 2012" published by UNWTO in January 16th, 2012 did not go into detail in regard to international tourist arrivals in the sub-regions of Asia. As such, the data in Table 3.4 for these sub-regions in 2010 is derived from the UNWTO report "Tourism Highlights 2011 Edition".

Table 3.4 Asia International Tourism Receipts, 2009 and 2010

	International Tourism Receipts Local Currencies, Constant Prices Change (%)			Share (%)	Receipts (USD)			Receipts (€)		
					Billion		Per Arrival	Billion		Per Arrival
	2008/2007	2009/2008	2010*/2009	2010*	2009	2010*	2010*	2009	2010*	2010*
Northeast Asia	8.2	1.9	15.9	13.3	101.2	122.4	1,100	72.5	92.3	830
Southeast Asia	-0.8	-7.4	14.4	7.4	53.5	68	980	38.4	51.3	740
South Asia	7.7	-4.9	16.5	2.1	14.9	18.9	1,710	10.7	14.2	1,290

Note: *=provisional figure or date

Source: UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org

South Asia remains on top vis-à-vis the other Asian sub-regions in terms of receipts per tourist arrival it still fell far below the average receipt of USD3,400 per arrival calculated for the Pacific sub-region (i.e. Oceania). So although South Asia is the smallest tourism market of the three Asian sub-regions, both in terms of the number of arrivals and value of receipts, its tourism industry is the most effective in Asia in terms of spending per tourist visit.

3.2 Asian Tourism: Destinations and Sources

3.2.1 Position of Asian Economies in the Global Tourist Trade

The world's top 10 international tourist destinations in 2010 essentially remained the same as in 2009 (Table 3.5). The only difference was that China overtook Spain, climbing to third place in

Table 3.5 World's Top 10 Tourist Destinations, 2010

Rank	Country	Millions of Arrivals		Change (%)
		Series	2010*	2010*/2009
1	France	TF	76.8	0
2	US	TF	59.7	8.7
3	China, People's Republic of	TF	55.7	9.4
4	Spain	TF	52.7	1
5	Italy	TF	43.6	0.9
6	United Kingdom	TF	28.1	-0.2
7	Turkey	TF	27	5.9
8	Germany	TF	26.9	10.9
9	Malaysia	TCE	24.6	3.9
10	Mexico	TF	22.4	4.4

Notes: *=provisional figure or date;

TF: International tourist arrivals at frontiers (excluding same-day visitors);
TCE: International tourist arrivals at collective tourism establishments.

Source: UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org

the ranking. All the top 10 tourist destinations were either in Europe, Asia or the Americas. Half were in Europe indicating Europe's dominant position in the international tourism market. The favorite Asian destinations were China (third), Turkey (seventh) and Malaysia (ninth). The US (second) and Mexico (tenth) were the most popular destinations in the Americas. Although Africa and the Middle East region saw improvements in their tourism trade, the generally poor quality of their tourism facilities and services, not to mention concerns about personal safety, kept countries within these two regions from making it onto the list of the top 10 destinations.

Tables 3.6 and 3.7 below show, respectively, the world's top 10 economies by: international tourism receipts (export trade); and international tourism expenditures (import trade), in 2010. Comparing these two tables reveals that most economies were tourism "net exporters", that is, they earned more in tourist revenues than they spent abroad, resulting

Table 3.6 World's Top 10 Economies by International Tourism Receipts, 2010

Rank	Economy	USD				Local Currencies	
		Billion		Change		Change (%)	
		2009	2010*	2009/2008	2010*/2009	2009/2008	2010*/2009
1	US	94.2	103.5	-14.7	9.9	-14.7	9.9
2	Spain	53.2	52.5	-13.7	-1.2	-9	3.9
3	France	49.4	46.3	-12.7	-6.2	-7.9	-1.3
4	China, People's Republic of	39.7	45.8	-2.9	15.5	($)-2.9	($)15.5
5	Italy	40.2	38.8	-12	-3.6	-7.2	1.4
6	Germany	34.6	34.7	-13.2	0.1	-8.5	5.3
7	United Kingdom	30.1	30.4	-16.3	0.8	-1.3	1.7
8	Australia	25.4	30.1	2.5	18.6	10.3	0.8
9	Hong Kong, China	16.4	23	7.5	39.5	7	39.8
10	Turkey	21.3	20.8	-3.2	-2.1	($)-3.2	($)-2.1

Source: UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org

Table 3.7 World's Top 10 Economies by International Tourism Expenditures, 2010

Rank	Economy	International Tourism Expenditures (USD billion)		Local Currencies	
				Change (%)	
		2009	2010*	2009/2008	2010*/2009
1	Germany	81.2	77.7	-5.9	0.7
2	US	74.1	75.5	-7.9	1.9
3	China, People's Republic of	43.7	54.9	($)20.9	($)25.6
4	United Kingdom	50.1	48.6	-13.6	-2.4
5	France	38.5	39.4	-1.9	7.6
6	Canada	24.2	29.5	-4.8	10.0
7	Japan	25.1	27.9	-18.4	4.0
8	Italy	27.9	27.1	-4.3	2.0
9	Russia	20.9	26.5	($)-12.1	($)26.8
10	Australia	17.6	22.5	2.5	9.0

Source: UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org

in a favorable tourism trade balance. For example, in 2010, international tourism revenues in the US reached USD103.5 billion while expenditures by American tourists abroad was only USD75.5 billion, generating a tourist trade surplus of USD28 billion. Similarly, France enjoyed a surplus of USD6.9 billion and Italy, USD11.7 billion.

Chinese mainland and Hong Kong (SAR) were the only Asian destinations that ranked in the top 10 in terms of international tourism receipts in 2010 (Table 3.6). On the other hand, China along with Japan were the only two Asian countries that made it onto the list of the world's top 10 economies by international tourism expenditures (Table 3.7).

Tourism revenues in China totalled USD45.8 billion while Chinese tourists spent USD54.9 billion abroad, making China a net importer with a tourism trade deficit of USD9.1 billion in 2010. Japan was also a net importer. Its international tourism receipts amounted to USD13.2 billion while its expenditures were USD27.9 billion, producing a deficit of USD14.7 billion.

3.2.2 Top Tourist Destinations in Asia

Based on the statistics for international tourism arrivals, this section identifies the top 5 tourist destinations in Asia in 2010.[1] Chinese mainland, Malaysia and Hong Kong (SAR) were the top three tourist destinations (Table 3.8).

Based on international tourism revenue statistics, the top 5 tourism destinations in Asia are shown in Table 3.9. Chinese mainland is the top destination by a wide margin followed by Hong Kong (SAR) with tourism revenues of USD23 billion. While Macao (SAR) ranked fifth in terms of international tourist arrivals, it was not one of the top five revenue earners in 2010. India, instead of Macao (SAR), was in the fifth place, with tourism receipts valued at USD14.2 billion.

Though Republic of Korea's international tourist arrivals increased by 12.5 percent compared with 2009, its tourism revenues actually fell slightly, by -0.55 percent, which made it an anomaly amongst all the economies on the list. The overall growth rate of tourism revenues in Asia's most popular tourism destinations was high, with an average growth rate of 25 percent vis-à-vis the previous year. Growth in revenues was particularly high in Singapore (50.8 percent), and in Hong Kong (SAR) (almost 40 percent).

3.2.3 High Dependence on Intra-regional Tourism: Visiting Your Neighbors

Asia has evolved into a large market for international tourism. However, most tourists come from economies in relatively close proximity to the chosen destinations, reflecting the attraction of having similar geography and culture. So it is important to understand the dependence of major Asian tourism destinations on intra-regional tourism and the interdependence between the major tourist

1 The brief report "International Tourism to Reach One Billion in 2012" published by the UNWTO did not provide a breakdown of international tourist arrivals for the individual sub-regions in Asia. So the data for analyzing international tourism receipts and international tourism expenditures for the sub-regions in Asia were derived from the 2010 data found in the UNWTO report "Tourism Highlights 2011 Edition".

Table 3.8 Asia's Top 5 Tourist Destinations, 2010

Rank	Destinations	Arrivals		Change (%)
		Series	2010*	2010*/2009
1	China, People's Republic of	TF	55,665	9.4
2	Malaysia	TF	24,577	3.9
3	Hong Kong, China	TF	20,085	18.7
4	Thailand	TF	15,842	12
5	Macao, China	TF	11,926	14.7

Note: *=provisional figure or date;

Source: UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org

TF: international tourist arrivals at frontiers (excluding same-day visitors);
VF: international visitor arrivals at frontiers (tourists and same-day visitors).

Table 3.9 Asia's Top 5 Tourism Destinations by Receipts, 2010

Rank	Destinations	USD billion		Change (%)
		Series	2010*	2010*/2009
1	China, People's Republic of	TF	45.8	15.5
2	Hong Kong, China	TF	23	39.5
3	Thailand	TF	19.8	26.2
4	Malaysia	TF	17.8	13
5	India	TF	14.2	27.2

Notes: *=provisional figure or date;

TF: international tourist arrivals at frontiers (excluding same-day visitors);
VF: international visitor arrivals at frontiers (tourists and same-day visitors).

Source: UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org

destinations.

In the following, the dependence of the major destinations on the Asia market and the interdependence of these destinations with each other are presented. Eight of these destinations are in Asia, comprising China, Malaysia, Hong Kong (SAR), Singapore, Republic of Korea, Japan, Indonesia and Taipei,China. For the purpose of comparison and relevance, the US and Australia are also considered.

The first step is to calculate the degree of dependence of the destinations in question on the Asian market.[1] According to the calculated results shown in Figure 3.3 below, the 10 tourist destinations can be divided into four groups according to their relative dependence on the Asian market.

1 A nation's degree of dependence on the Asia market can be calculated as follows: tourist arrivals from other Asian economies divided by tourist arrivals from around the world.

The first group comprises those destinations that rely most heavily on Asian tourists, namely the Chinese mainland, Malaysia, Taipei,China and Hong Kong (SAR). These destinations all have a degree of dependence on the Asian market of over 0.8 which means that more than 80 percent of their tourist arrivals come from other parts of Asia. Among them, the Chinese mainland, relied most on the intra-Asia tourism market with a degree of dependence of 0.9257. In other words, more than 9 out of 10 tourist arrivals in China originated from other Asian economies. The second group comprises destinations that have a lesser but nevertheless high dependence on the Asia market. This group includes Republic of Korea, Japan and Singapore. The degree of dependence on Asian tourism market for these three countries ranges from 0.7 to 0.8.

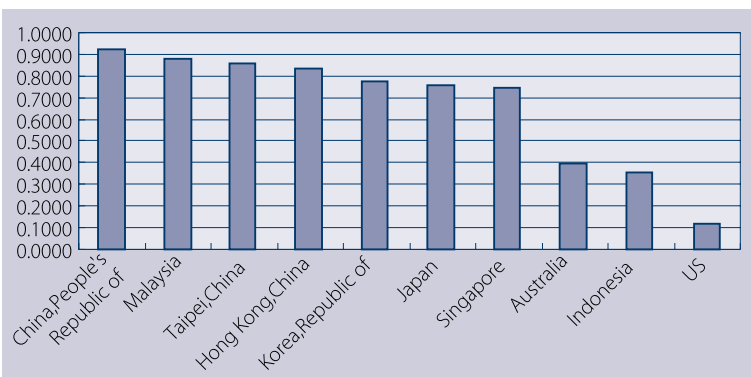

Figure 3.3 Degree of Dependence on Asian Tourism of Select Destinations, 2010

Source: 1. UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org
2. National Tourism Office and National Statistical Office.

Five of the seven destinations considered so far are Northeast Asian destinations apart from Singapore and Malaysia. In short, Northeast Asia relies predominantly on Asian tourists, whether they come from other parts of Northeast Asia itself or from other Asian sub-regions.

Third, Australia and Indonesia are only somewhat dependent on Asian tourism with 30 percent to 40 percent of their tourists coming from Asia. Australia relied more than Indonesia on Asian tourists despite being farther away.

Fourth, the US has a relatively low degree of dependence on the Asian market as its degrees of dependence fall below 0.2. It is important to note that although they may get the majority of their tourists from elsewhere, Asia remains an important source for tourism in both Australia and the US with, respectively 39.92 percent and 11.75 percent of their tourists coming from Asia.

To obtain a breakdown of the interdependence among the 10 aforementioned tourist destinations required retrieving the tourism statistics available on the official websites of these 10 destinations and then calculating their interdependence. The results of this analysis are summarized in Table 3.10. The interdependence between these 10 destinations has the following characteristics. First, most Asian tourism destinations have high interdependence on their closest neighbors. For example, the dependence of Japan on its neighbor, Republic of Korea is the highest, accounting for 28.3 percent of international tourist arrivals in Japan. By the same token, Republic of Korea is most dependent on Japan. Over 34 percent of tourists arriving in Republic of Korea are from Japan. The interdependency is even more pronounced in the case of the Chinese mainland and Hong Kong (SAR). Tourists from the Chinese mainland accounts for almost 60 percent of the tourist trade of Hong Kong (SAR) and Hong Kong (SAR) accounts for 58 percent of the Chinese mainland. Similarly, Singapore and

Table 3.10 Interdependence among Tourism Destinations in Asia, Americas and Australia, 2010

Of A \ On B	China, People's Republic of	Malaysia	Hong Kong, China	Singapore	Korea, Republic of	Japan	Indonesia	Taipei, China	US	Australia
China, People's Republic of VF	0.0000	0.0093	0.5930	0.0075	0.0305	0.0279	0.0043	0.0384	0.0150	0.0049
Malaysia TF	0.0460	0.0000	\	0.5307	0.0107	0.0169	0.1020	0.0086	0.0094	0.0236
Hong Kong, China TF	0.5814	0.0211	0.0000	0.0263	0.0293	0.0410	0.0169	0.0361	0.0418	0.0252
Singapore VF	0.1006	0.0891	0.0333	0.0000	0.0310	0.0454	0.1981	0.0164	0.0358	0.0757
Korea, Republic of VF	0.2131	0.0129	0.0260	0.0128	0.0000	0.3436	0.0108	0.0462	0.0742	0.0128
Japan VF	0.1640	0.0133	0.0591	0.0210	0.2830	0.0000	0.0094	0.1473	0.0840	0.0260
Indonesia TF	0.0670	0.1824	0.0112	0.1961	0.0393	0.0598	0.0000	0.0305	0.0258	0.1102
Taipei,China VF	0.2929	0.0513	0.1427#	0.0433	0.0369	0.1940	0.0222	0.0000	0.0711	0.0112
US TF	0.0134	\	\	\	0.0185	0.0567	\	0.0049	0.0000	0.0151
Australia TF	0.0709	0.0391	0.0274	0.0496	0.0366	0.0676	0.0206	0.0147	0.0809	0.0000

Notes: *=provisional figure or date;

\=figure or data not (yet) available;
#=including Hong Kong (SAR) and Macao (SAR);

TF: international tourist arrivals at frontiers (excluding same-day visitors);
VF: international visitor arrivals at frontiers (tourists and same-day visitors)

Source: 1.UNWTO Tourism Highlights 2011 Edition, World Tourism Organization, www.unwto.org
2. National Tourism Office and National Statistical Office.

Indonesia each accounts for about 20 percent of the other's tourist trade.

Second, all the other Asian tourist destinations are highly dependent on tourists from the Chinese mainland. Thus, 5 of these 7 Asian tourist destinations have a degree of dependence on the Chinese mainland exceeding 0.1.

In short, the main tourism destinations in Asia are highly dependent on intra-regional tourism. Asian tourists are naturally attracted to neighboring economies given their proximity and the similarities they share in geography and culture. Because of these factors, most Asian tourist destinations have a high degree of dependence (more than 70 percent) on tourism trade from within Asia itself.

Second, China plays a pivotal role in the international tourism market in Asia. In 2010, China ranked third in the list of the top 10 international tourist destinations with revenues from tourism reaching USD458 billion. China will continue to have a thriving tourist industry as a result of its interdependence with the other major Asian tourism destinations.

Third, given the strong interdependence between intra-Asian markets, it can be mutually beneficial to work in partnership with neighboring economies, rather than in isolation.

3.3 Liberalization of Services in the Asia-Pacific RTAs

3.3.1 Increase of Services RTAs in the Asia-Pacific Region

Data on intra-RTA trade in services are limited due to the small number of economies reporting bilateral services trade statistics to international organizations, as well as the differing levels of partner detail across the reporting economies. Asia exported USD963 billion worth of services in 2010 and imported a similar amount, USD961 billion. Exports and imports were up 21 percent and 20 percent, respectively.

Transport was the most dynamic sector, with a growth rate of 26 percent on both the export and import sides. Travel exports also rose rapidly at 25 percent. Also, other commercial services now representing half of the region's exports increased by 17 percent. In 2010, China replaced France as the fourth-largest exporter of commercial services. China also moved up the rankings on the import side, taking over the third position from the United Kingdom.

In the Asia-Pacific Region, China ranked first in exports of commercial services, Japan ranked second and Singapore ranked third in 2010. China, Japan and India were the three leading importers of commercial services in the Asia-Pacific region in 2010. The top 5 economies in the Asia-Pacific region accounted for 17.3 percent of world exports of commercial services and 18.6 percent of world imports of commercial services. The Asia-Pacific region is becoming an important services market in the world (Table 3.11).

Asian economies see RTAs as a way to liberalize trade in services in the region. The number of RTAs has surged in the last decade (Figure 3.4). A region-wide RTA could provide clear economic benefits, such as increased market access to services, skills

Table 3.11 Major Exporters and Importers of Commercial Services in the Asia-Pacific Region, 2010

Export Ranking in A-P Region	Economy	Export Value (USD billion)	Share World Exports (%)	Import Ranking in A-P Region	Economy	Import Value (USD billion)	Share in World Import (%)
1.	China, People's Republic of	170	4.6	1.	China, People's Republic of	192	5.5
2.	Japan	138	3.8	2.	Japan	155	4.4
3.	Singapore	112	3.0	3.	India	117	3.3
4.	India	110	3.0	4.	Singapore	96	2.7
5.	Hong Kong, China	108	2.9	5.	Korea, Republic of	93	2.7
6.	Korea, Republic of	82	2.2	6.	Hong Kong, China	51	1.5
7.	Australia	48	1.3	7.	Australia	50	1.4

Source: WTO International Trade Statistics Database

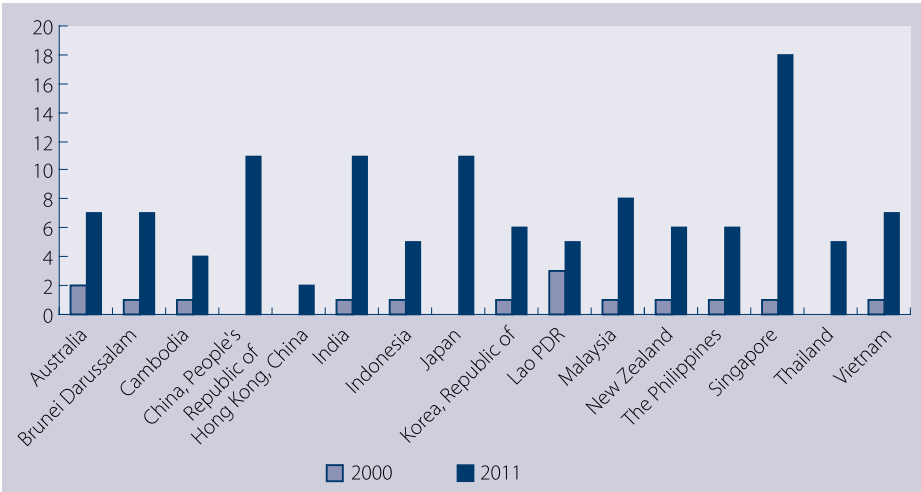

Figure 3.4 Growth in the Number of RTAs in Effect in Asia

Source: WTO RTA database

and technology; increased market size; easier foreign direct investment and technology transfer by multinational corporations; and simpler rules and standards. RTAs have improved business opportunities resulting from better trading environments.

Many service RTAs notified to the WTO so far have involved the Asia-Pacific economies and the majority of RTAs among Asia-Pacific economies contained commitments on services. Among the Asia-Pacific economies, there were 29 intra-regional RTAs, 58 cross-regional RTAs, 3 RTAs between developed economies, 34 RTAs between developed and developing economies and 50 RTAs between developing economies (Figure 3.5).

Services obligations are usually included in comprehensive RTAs subject to GATS Article V. Some RTAs rely on a GATS-type "positive-list modality" for the scheduling of liberalization commitments, while others used a "negative-list modality". A positive-list approach means that the obligations stipulated in the agreement apply only to those services sectors listed in WTO members' schedules of commitments, while a negative-list approach means that obligations in the agreement apply fully to all sectors, subject only to explicitly listed reservations. The type of liberalization modalities used in the RTA is also a factor, as agreements using negative list modalities have tended, on average, to result in greater commitments than positive list ones.

A number of services RTAs, whether positive-list or negative-list, include national treatment, market access, domestic regulation obligations, exceptions, definitions and scope, etc. In addition to architectural and rules-related differences in

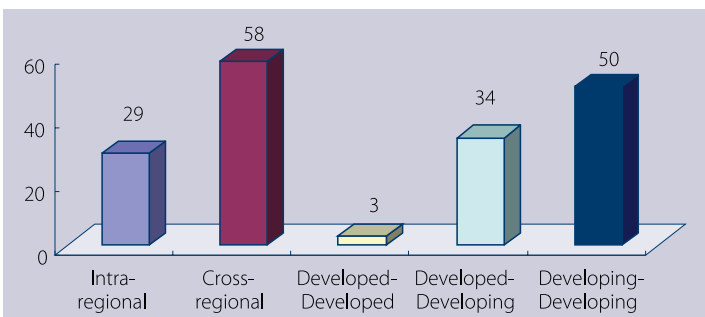

Figure 3.5 Types of RTAs in the Asia-Pacific Region

Source: WTO RTA database

the services provisions in RTAs, a key issue is the extent of market-opening commitments—that is, the level of market access and national treatment obligations guaranteed for foreign services and services suppliers. Studies have found that, overall, services commitments in RTAs go beyond GATS commitments currently in force. GATS+ commitments in RTAs take the form of both new bindings or commitments in services sectors uncommitted under the GATS and better bindings in sectors already committed under the GATS.

3.3.2 Measuring Service RTAs Liberalization: "New Bindings" and "Improved Bindings"

Looking at the proportion of services sub-sectors where a party to an RTA undertakes commitments that go beyond its GATS services offer (as per Roy et al. 2007), one would find that improvements of services liberalization in Asia-Pacific economies' RTAs take either the form of "new bindings" or "improved bindings". The "new bindings" consists of sub-sectors that were not subject to commitments under the GATS and that have been committed in RTAs. The "improved bindings" means sub-sectors that are granted better terms of access in a RTA than that under GATS.

Figures 3.6 and 3.7 highlight the services commitments in the RTAs by focusing on the proportion of services sub-sectors that are subject to market access and national treatment commitments of Asia-Pacific economies. The figures show that economies in the Asia-Pacific Region involved in RTAs have, on average, undertaken commitments on a greater proportion of services sub-sectors than they have in the GATS. This trend is clear in both modes 1 and 3.

Referring to the proportions of sub-sectors committed under GATS Mode 1 that are further improved in RTAs in Asia-Pacific Region, Singapore ranked first with 26.76 percent of its sub-sectors subject to "improved bindings". Republic of Korea ranked second with 20.42 percent; Malaysia ranked third with 14.79 percent.

Referring to the proportions of sub-sectors that are newly committed in RTAs under Mode 1 in the Asia-Pacific Region, Brunei ranked first and had 73.24 percent of its sub-sectors subject to "new bindings"; Singapore ranked second with 42.25 percent ; Thailand ranked third with 36.62 percent. China had only 1.41 percent of its sub-sectors subject to "improved bindings" (Figure 3.6).

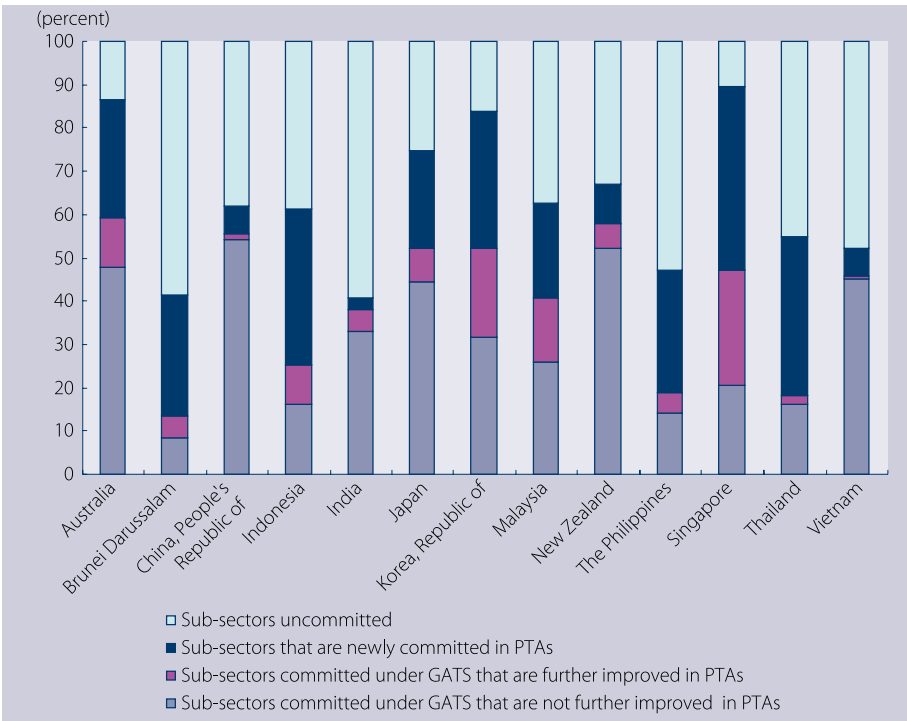

Figure 3.6 Proportion of Services Sub-Sectors in RTA Commitments Going beyond GATS under Mode 1

Source: WTO RTA database.

Referring to the proportions of sub-sectors committed under GATS Mode 3 that are further improved in RTAs in Asia-Pacific Region, India ranked first and had 45.39 percent of its sub-sectors subject to "improved bindings"; China and Malaysia tied for second with 36.84 percent; Singapore ranked third with 30.26 percent.

Referring to the proportions of sub-sectors that are newly committed in RTAs under Mode 3 in the Asia-Pacific Region, Brunei ranked first with 50 percent of its sub-sectors subject to "new bindings"; the Philippines ranked second with 42.11 percent and Singapore ranked third with 40.13 percent (Figure 3.7).

3.3.3 Measuring Service RTAs Liberalization: Index of Services Commitments

The index measuring the trade liberalization in services of Asia-Pacific economies is based on an index of GATS+ commitments in RTAs as developed in Marchetti and Roy (2008). This approach builds upon the one initially used by Hoekman (1996) to assess the content of GATS schedules emerging from the Uruguay Round where, for each sub-sector and mode of supply, a score of 1 is given for a full commitment (without limitations), 0.5 for a partial commitment, and 0 when there was no commitment. Fully assessing the depth and quality of commitments is a complicated matter. In Marchetti and Roy (2008), the Hoekman index is adapted so as to allow the comparison of a member's partial commitments in different RTAs. Rather than giving a score of 0.5 to all partial commitments without taking account of greater concessions made from one negotiation to the other, the index gives a higher score for each improvement in a member's partial commitments: for each step, half the difference between the score for a full commitment (1) and the score of the partial commitment being improved is added. For example, a partial commitment being improved by way of a foreign equity limit moving from 49 to 51 percent would obtain a score of 0.75. A further improvement by the member in the same sub-sector and mode would get a score of 0.875.

Figure 3.8 uses the index to highlight variations

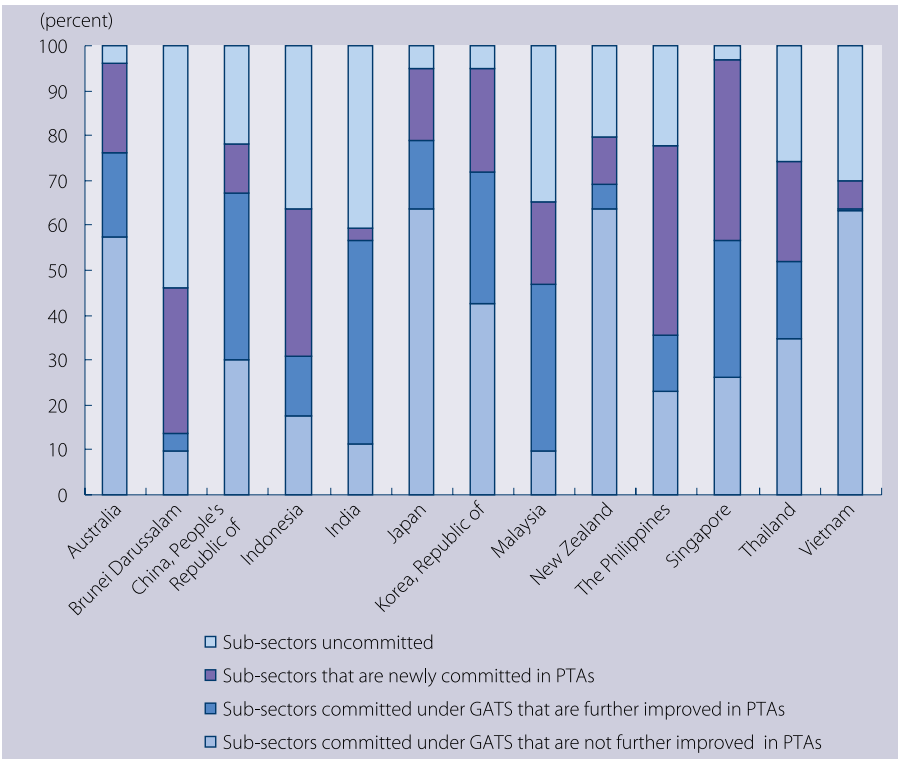

Figure 3.7 Proportion of Services Sub-Sectors in RTA Commitments Going beyond GATS under Mode 3

Source: WTO RTA database.

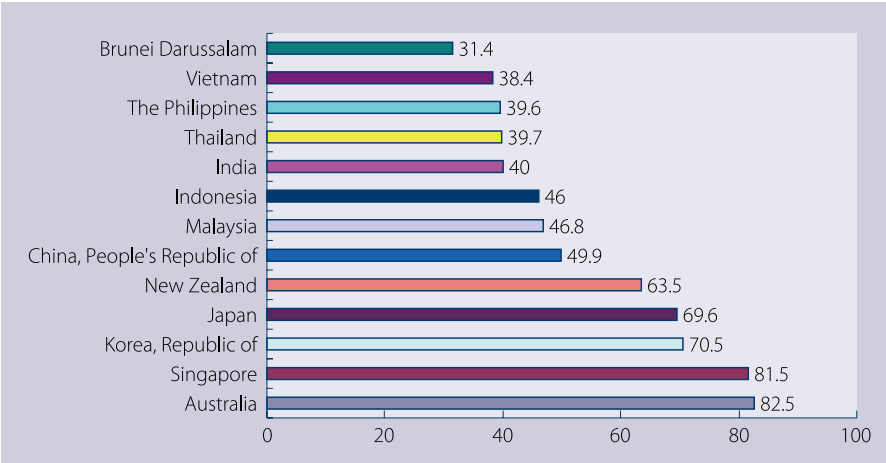

Figure 3.8 Index Scores of Services Trade Liberalization in RTAs in the Asia-Pacific Region

Source: WTO RTA database.

in the levels of commitments granted by Asia-Pacific economies to their different RTA partners. It shows that, for a number of economies, the level of services commitments granted vary significantly across agreements. The index can also be used to provide an overall picture of GATS+ commitments undertaken in RTAs. Accordingly, almost all the Asia-Pacific economies have undertaken RTA commitments well beyond their GATS commitments and/or GATS offers.

Australia, Singapore, Republic of Korea, Japan and New Zealand had relatively high index scores above 60; China, Malaysia, Indonesia and India had medium index scores between 40 and 60; Thailand, the Philippines, Vietnam, Pakistan and Brunei had index scores below 40 (Figure 3.8).

3.3.4 Measuring Service RTAs Liberalization: Index of Sub-Sectors Commitments

The index also provides a sectoral picture of services trade liberalization advances in RTAs. Figure 3.9-3.16 show the average index value for RTA commitments, per selected sectors. As noted in the *World Trade Report 2011* and in Marchetti and Roy (2008), advances in RTAs occurred across all major services sectors. While certain services sectors that proved more difficult in multilateral negotiations still attracted less commitments in RTAs (e.g. health), advances were nevertheless important there too when compared to GATS commitments/offers.

Levels of sectoral coverage achieved in RTAs are greater for Asia-Pacific economies. The proportion of subsectors where commitments were undertaken by Asia-Pacific economies in RTAs went beyond those in GATS schedules. The RTAs include new bindings in subsectors that were uncommitted in the GATS, which are at better levels of access in RTAs for those subsectors already subject to commitments under the GATS and DDA offers.

For professional services, Singapore, Australia, New Zealand and Republic of Korea had index score above 80; Vietnam, Malaysia, China, Japan and India had index score between 60 and 80 (Figure 3.9).

For computer services, Singapore, New Zealand, Republic of Korea, Japan and Australia had very high index scores of 100; India, Malaysia, Thailand and the Philippines had index scores above 80. Vietnam and China had index scores above 70 and Indonesia had an index score of 60 (Figure 3.10).

For telecom services, Australia, Malaysia and Republic of Korea had index scores above 90. Indonesia and Singapore had index scores above 80. New Zealand and Japan had index scores above 60. Thailand, China, India, Vietnam and the Philippines had index scores between 40 and 60 (Figure 3.11).

For construction services, Singapore, Republic of Korea and Australia had index scores of 100. New Zealand had index scores above 90; China, Japan, Indonesia, Thailand, Malaysia and India had index

scores between 60 and 80. Vietnam and the Philippines had index scores below 60 (Figure 3.12).

For distribution services, Australia, Republic of Korea, Singapore, Japan and New Zealand had index scores above 80. China, Malaysia and Thailand had index scores above 60. India, the Philippines and Indonesia had index scores below 50 (Figure 3.13).

For education services, Singapore ranked first with an index score of 80. New Zealand ranked second with an index score of 70. Thailand ranked third with an index score of 65. Other economies had index scores below 60 (Figure 3.14).

For environmental services, Australia and New Zealand had high index scores of 100. China, Japan, and Singapore had index scores above 70. Republic of Korea had an index score above 60 (Figure 3.15).

For health and social services, all Asia-Pacific

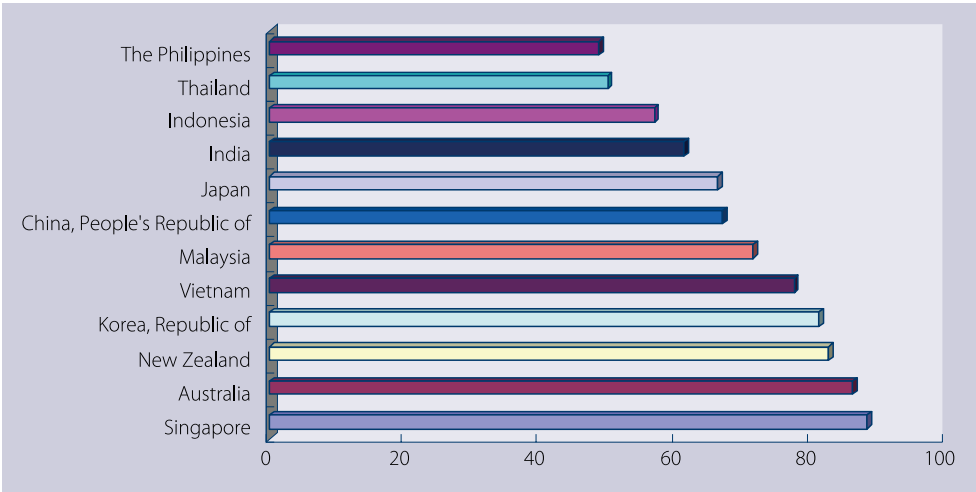

Figure 3.9 Index Score of Professional Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

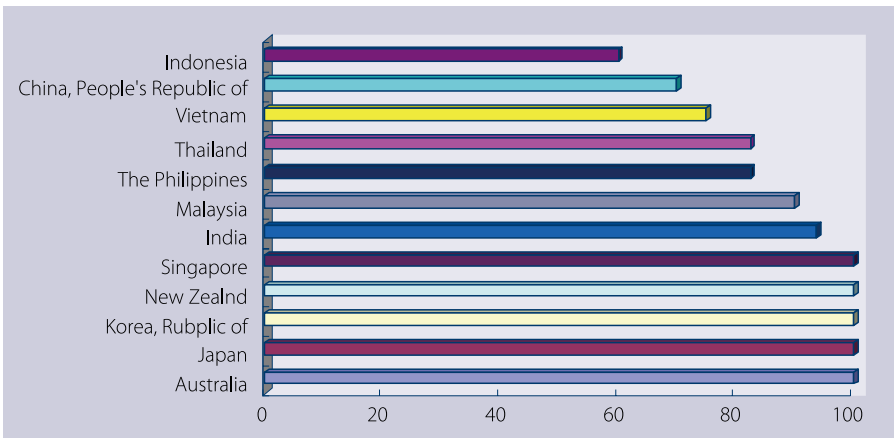

Figure 3.10 Index Score of Computer Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

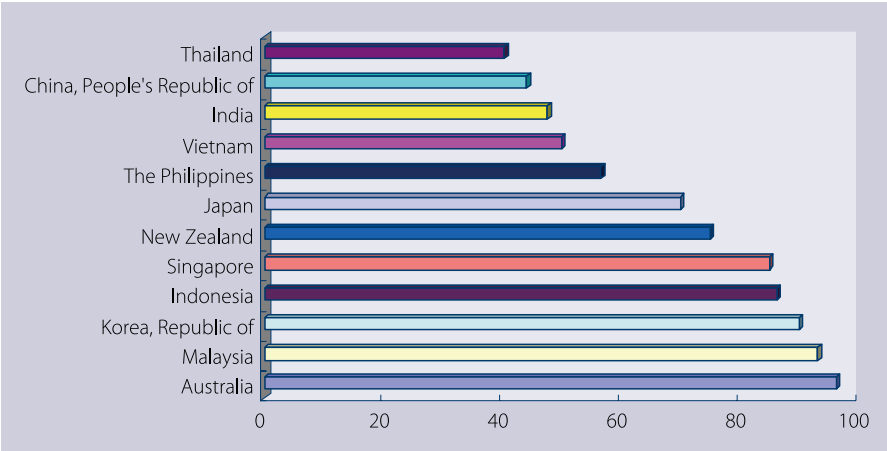

Figure 3.11 Index Score of Telecom Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

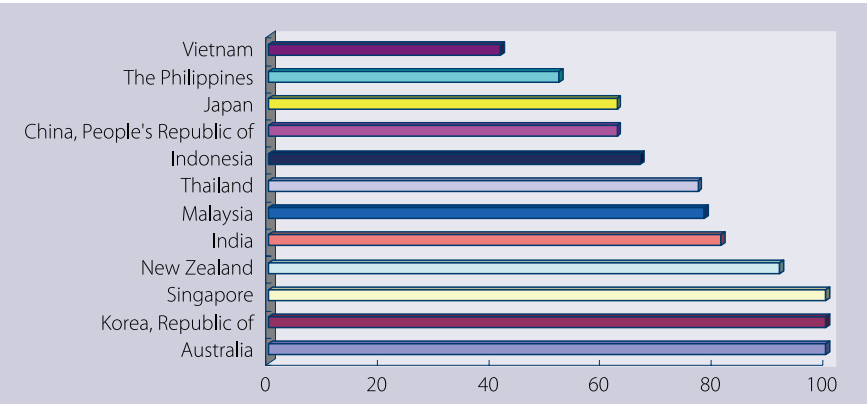

Figure 3.12 Index Score of Construction Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

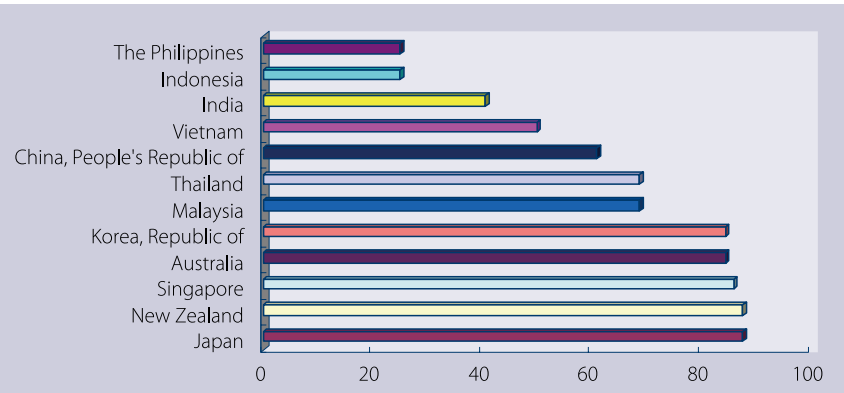

Figure 3.13 Index Score of Distribution Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

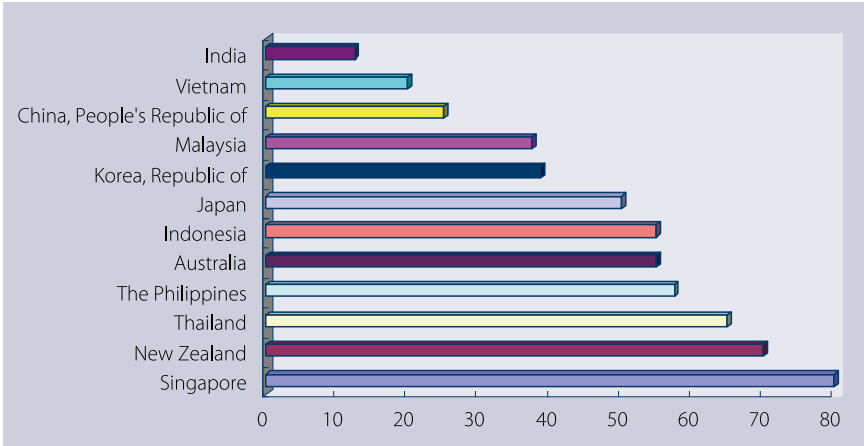

Figure 3.14 Index Score of Education Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

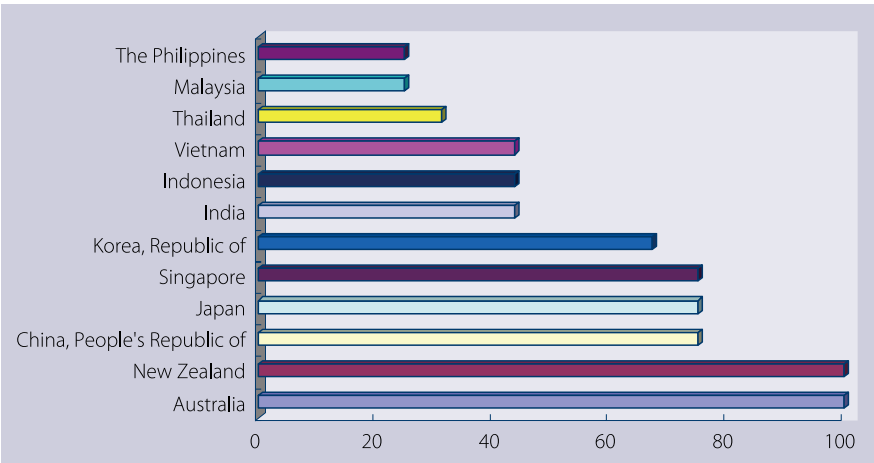

Figure 3.15 Index Score of Environmental Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

economies had index scores below 50. Vietnam and Singapore had the top three index scores for this sub-sector. Republic of Korea, New Zealand and the Philippines had a more closed market in this sub-sector (Figure 3.16).

The above study shows that, on average, commitments undertaken in RTAs in Asia-Pacific Region exceed those contained in GATS schedules, for both modes 1 and 3. Naturally, the level of GATS+ commitments in RTAs varies significantly across different economies.

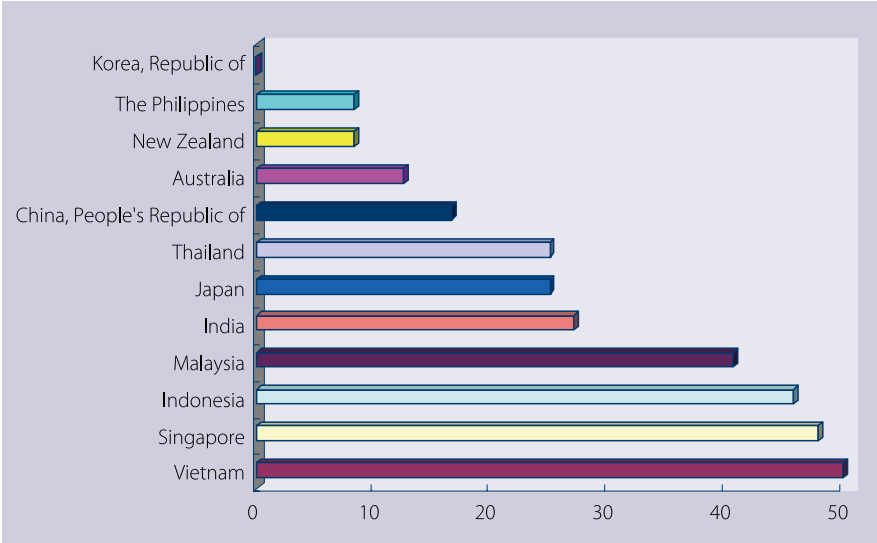

Figure 3.16 Index Score of Health and Social Services Liberalization in RTAs in Asia-Pacific Region

Source: WTO RTA database.

List of Services Agreements in the Database Used for This Report

Korea, Republic of	Panama	EFTA	Thailand
Japan	China, People's Republic of	Nicaragua	US
ASEAN	Japan	Jordan	Brunei Darussalam
Chile	China, People's Republic of	Japan	ASEAN
Korea, Republic of	Japan	China, People's Republic of	Japan
ASEAN	EFTA	Australia	Pakistan
Chile	US	China, People's Republic of	Thailand
Honduras	Japan	New Zealand	Pakistan
India	Singapore	Korea, Republic of	US
Peru	Panama	Japan	

Source: WTO RTA database.

Chapter 4

Financial Transformation and Development in Asia

4.1 Equity Market Synchronization

4.1.1 Measuring Integration by the Extent of Equity Market Synchronization

Over the past three decades, financial markets have become increasingly integrated internationally. A trend towards portfolio diversification has left asset holders less exposed to country-specific risk, and the flow of capital to its most productive location is increasingly unhindered by restrictions on international borrowing and lending. In contrast, there is little evidence that business-cycle comovements have on average become more synchronized at a global level during the most recent period of globalization. For instance, Kose et. al. (2003, AER) find that the correlations of output growth in the developing countries, especially more financial integrated economies (MFI), i.e., the emerging markets such as Singapore, decreasing or even negative. Similarly, J. Heathcote and Perri, F. (2004, JET) argued, "over the period 1986-2000, international comovement was much weaker (real integration). At the same time, US international asset trade had increased significantly (financial globalization)."[1] Thus, financial integration is important for understanding the real side of international business cycles. In particular, international equity market integration, increasing endogenously in response to increased country-specific risk, appears to be one of the most important reasons for the observed changes in the international business cycle.

In this section, we aim to provide the answers to the following two questions: First, what has been the trend over the past three decades with regard to equity market integration in Asia and what is its current status? Second, what is the structure of interdependence between equity markets in Asia? Particular attention will be paid to the closeness of the equity markets in Asia to three most important economies, namely, the US, Japan and China.

4.1.2 Equity Market Synchronization

To answer the first question, we examine equity market integration among the following countries (and regions) in the Asia-Pacific region: Australia, Hong Kong (SAR), India, Indonesia, Republic of Korea, Malaysia, New Zealand, Japan, the Philippines, China, and Singapore.[2]

In order to provide a big picture, we divide the

1 For instance, for the period from 1972 to 1986, the business cycle frequency correlations of output, employment and investment between the US and an aggregate of Europe, Canada and Japan were 0.76, 0.66, and 0.63 respectively. For the period from 1986 to 2000, the corresponding correlations were 0.26, 0.03, and -0.07. The consumption correlation also declined between the two periods, but to a smaller extent (from 0.51 to 0.13). At the same time, international trade in financial assets has sharply increased. Between 1972 and 1999, the US gross holdings of foreign direct investment and equity in the same group of countries rose from 4 to 23 percent of the US capital stock.

2 A robust measure of equity market synchronization used in the literature is the correlation of equity markets index returns between two countries. Following Forbes and Rigobon (2002), we calculate the corrected correlation coefficients ρ^*, between two variables x and y in a given sub-sample, which is defined as follows:

$$\rho^* = \frac{\rho}{\sqrt{\frac{1-\rho^2}{\Delta}+\rho^2}},$$

where ρ is the standard correlation coefficient between x and y in the sub-sample, and Δ is the ratio of the variance of x in the sub-sample to the variance of x in the whole sample.

whole period from between 1987 and 2011 into four chronological sub-periods: January 1987 to December 1997; January 1998 to December 2001; January 2002 to December 2006; and January 2007 to December 2011. Table 1 shows the corrected correlation coefficients among the economies in the selected sub-samples.

Table 4.1 (a) Equity Markets Synchronization in Asia Economies, 1987-1997

	Hong Kong, China	India	Indonesia	Korea, Republic of	Malaysia	Japan	China, People's Republic of	Singapore
Hong Kong, China	1							
India	0.21*	1						
Indonesia	0.41*	0.99*	1					
Korea, Republic of	0.15	0.98*	0.98*	1				
Malaysia	0.24*	-0.02	0.01	0.02	1			
Japan	0.27*	-0.02	0.01	-0.01	0.13*	1		
China, People's Republic of	0.01	0.21*	0.20*	0.21*	-0.01*	0.02	1	
Singapore	0.20*	0.03	0.07	0.05	0.37	0.30*	0.01	1

Table 4.1 (b) Equity Markets Synchronization in Asia Economies, 1998-2001

	Australia	Hong Kong, China	India	Indonesia	Korea, Republic of	Malaysia	Japan	The Philippines	China, People's Republic of	Singapore
Australia	1									
Hong Kong, China	0.23*	1								
India	0.21*	0.27*	1							
Indonesia	0.07	0.30*	0.16*	1						
Korea, Republic of	0.24*	0.44*	0.24*	0.19*	1					
Malaysia	0.15	0.33*	0.12*	0.22	0.18*	1				
Japan	0.23*	0.48*	0.22*	0.19	0.40*	0.24*	1			
The Philippines	-0.04	0.09*	-0.02	-0.06	-0.01*	0.05	0.04	1		
China, People's Republic of	0.24*	0.07*	0.03	-0.01	-0.01	0.04	0.03	-0.07	1	
Singapore	0.38*	0.64*	0.26*	0.36	0.40*	0.35*	0.39*	0.10*	0.06	1

Table 4.1 (c) Equity Markets Synchronization in Asia Economies, 2002-2006

	Australia	Hong Kong, China	India	Indonesia	Korea, Republic of	Malaysia	New Zealand	Japan	The Philippines	China, People's Republic of	Singapore
Australia	1										
Hong Kong, China	0.46*	1									
India	0.30*	0.42*	1								
Indonesia	0.35*	0.43*	0.39*	1							
Korea, Republic of	0.45*	0.60*	0.37*	0.44*	1						
Malaysia	0.25*	0.37*	0.20*	0.36*	0.35*	1					
New Zealand	0.06*	0.04	-0.01	0.20*	0.07*	0.16*	1				
Japan	0.49*	0.54*	0.32*	0.38*	0.34*	0.34*	0.23*	1			
The Philippines	0.26*	0.23*	0.19*	0.28*	0.26*	0.24*	0.05	0.27*	1		
China, People's Republic of	0.04	0.08*	0.06*	0.05*	0.07*	0.08*	0.01	0.05*	0.01	1	
Singapore	0.47*	0.64*	0.41*	0.46*	0.55*	0.39*	0.04	0.5*	0.26*	0.06*	1

Table 4.1 (d) Equity Markets Synchronization in Asia Economies, 2007-2011

	Australia	Hong Kong, China	India	Indonesia	Korea, Republic of	Malaysia	New Zealand	Japan	The Philippines	China, People's Republic of	Singapore
Australia	1										
Hong Kong, China	0.68*	1									
India	0.47*	0.62*	1								
Indonesia	0.55*	0.64*	0.51*	1							
Korea, Republic of	0.67*	0.70*	0.48*	0.57*	1						
Malaysia	0.37*	0.38*	0.27*	0.42*	0.37*	1					
New Zealand	0.60*	0.39*	0.28*	0.38*	0.43*	0.27*	1				
Japan	0.71*	0.67*	0.40*	0.52*	0.71*	0.38*	0.53*	1			
The Philippines	0.50*	0.45*	0.28*	0.44*	0.42*	0.34*	0.49*	0.47*	1		
China, People's Republic of	0.22*	0.35*	0.20*	0.21*	0.25*	0.17*	0.16*	0.22*	0.16*	1	
Singapore	0.62*	0.77*	0.64*	0.64*	0.66*	0.38*	0.38*	0.60*	0.37*	0.24*	1

* means the correlation coefficient is statistically significant at 5% level.

1987-1997: Hong Kong (SAR) as a leader in the region's financial market

This period encompasses the economic miracle that occurred in the Asian economies in the 1990s and the Asian financial crisis in 1997. In effect, it encapsulates a complete business cycle. As shown in the first panel in Table 4.1, the financial synchronization in the 8 economies during the period is not significant. 50 percent of the economy pairs in our sample (14 of 28) demonstrate a significant correlation in terms of equity market synchronization. Many economies are rather financially independent: for instance, the equity market in Malaysia only correlates with that of Hong Kong (SAR) and Japan.

There is not universal evidence that equity markets in the same economic zone are not significantly correlated, which is inconsistent with the stylized facts documented in Kim and Kim (2007). For instance, there is no correlation of equity market returns between Singapore and Malaysia equity markets even though there is a significant positive output correlation between them.[1]

It is interesting to note that Hong Kong (SAR), as one of most important financial centers in the world, exerts a strong influence on many of the other Asian economies. Except for Republic of Korea and China, there is a significant financial synchronization between Hong Kong (SAR) and the rest of Asian economies in our sample. It is also surprising to note that Japan, although regarded as the third most important economy in the world, was not as financially important as Hong Kong (SAR) during the 1987-1997 period. In our sample, Japan only shows a modest degree of financial synchronization with three economies, namely Malaysia, Hong Kong (SAR), and Singapore.

Besides, during 1987-1997, China shows a significant synchronization with all the Asian economies except for Hong Kong (SAR). This may reflect the fact that China's equity market was still in its infancy at that time and as such was barely integrated with the more mature Hong Kong (SAR) equity market. India and Indonesia show a very high level of correlation (almost 1) which may reflect their economies high degree of connectedness during that period.

Overall, between 1987 and 1997, Hong Kong (SAR), as ostensibly the main financial center in the Asia-Pacific region, had the greatest influence on most of the equity markets in Asia. The financial synchronization in this region mostly reflected economic integration.

1998-2001: Increased synchronization in equity markets

During 1998-2001, the world, including Asia, was expected a low rate of economic growth due to the several crises around the world. The pattern of financial synchronization in Asia followed a completely different course from that observed in the previous period 1987-1997.

First, Hong Kong (SAR) continued to act as the main financial center in the region, as the equity markets of the rest of the Asian economies including Australia, Japan and China became increasingly synchronized with it. However, Japan also became increasingly important, as evidenced by its increasing synchronization with the other economies except for Indonesia, the Philippines and China. Singapore also grew in stature as a financial centre with only Indonesia and China showing no significant synchronization with its equity market. The degree of synchronization with the Asian economies was consistent with the relative importance of the competing financial centers in the region.

Second, the synchronization of China's equity market was limited to Australia and Hong Kong (SAR). The degree of correlation may be explained by the extent of China's trade with these economies. The other big economy, India, differed from China in that its equity market showed synchronization with all the Asian economies except the Philippines and China. This may also reflect the pattern of India's international trade.

Third, the degree of the financial synchronization in Asia increased as more than 60 percent of the economy pairs show some financial synchronization.

2002-2006: Japan's rise in importance

During this period, the world economy became more integrated. The degree of financial synchronization in Asia rose in tandem. More than 90 percent of economy pairs in our sample show financial synchronization. The one exception is New Zealand. Due to its pattern of international trade, the equity market in New Zealand only shows modest synchronization with Australia, Republic of Korea, Malaysia, Indonesia and Japan, but not with the other economies in the sample.

China becomes more financially integrated with

1 Kim and Kim (2007) reports that the correlation of the output between Singapore and Malaysia is 0.72.

the rest of Asia. It shows financial synchronization with many of the Asia economies.

Japan's financial influence continued to grow. During 2002-2006, it was the only economy in our sample to positively correlate with all other economies. Hong Kong (SAR), India and Singapore also showed significant synchronization with most of the other economies.

2007-2011: Increased regional interdependence

During this period, the sub-prime crisis occurred. The world experienced a severe economic downturn and economies tried to recover through expansionary fiscal and monetary policy initiatives. There is a further increase in the degree of financial synchronization in Asia. In our sample, all the economy pairs show significant correlation. Furthermore, the values of the correlation coefficients increase. For instance, the correlation coefficient between China and other economies rose from 0.1 during 2002-2006 to around 0.2 during 2007-2011. Therefore, both the extent of financial synchronization, as reflected in the number of economy pairs that are synchronized, and the degree of their interdependence, as reflected in the values of the correlations, increase after the sub-prime crisis.

4.1.3 Evolving Roles of the US, Japan and China

From the above analysis, we conclude that there is a trend of increasing equity market synchronization in Asia, i.e., financial integration is becoming deeper. Next, we will investigate the varying impacts that the three most important economies in the world, namely, the US, Japan and China, have had on other Asian economies over time. We start by providing the plots of economies correlation coefficients between Asian economies and each of the three economies mentioned above. The corrected correlation coefficients in relation to the US, Japan, and China are calculated annually for each pair in Figures 4.1(a), (b), and (c), respectively.

As shown in Figures 4.1(a), (b), (c), both the US and Japan become relatively less important over time in terms of financial influence, especially after the occurrence of the sub-prime crisis. By contrast, China becomes increasingly important. The annualized correlation coefficients increase between China on the one hand, and Hong Kong (SAR),

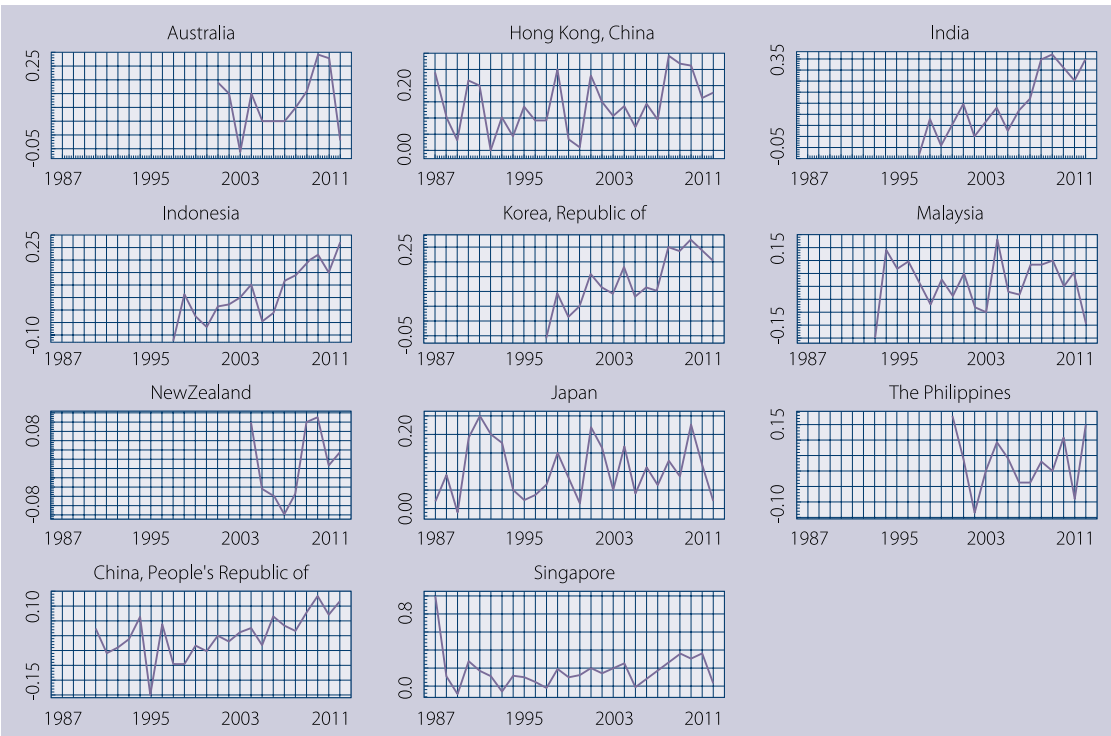

Figure 4.1 (a) Correlations of Asia Economies with the US, 1987-2011

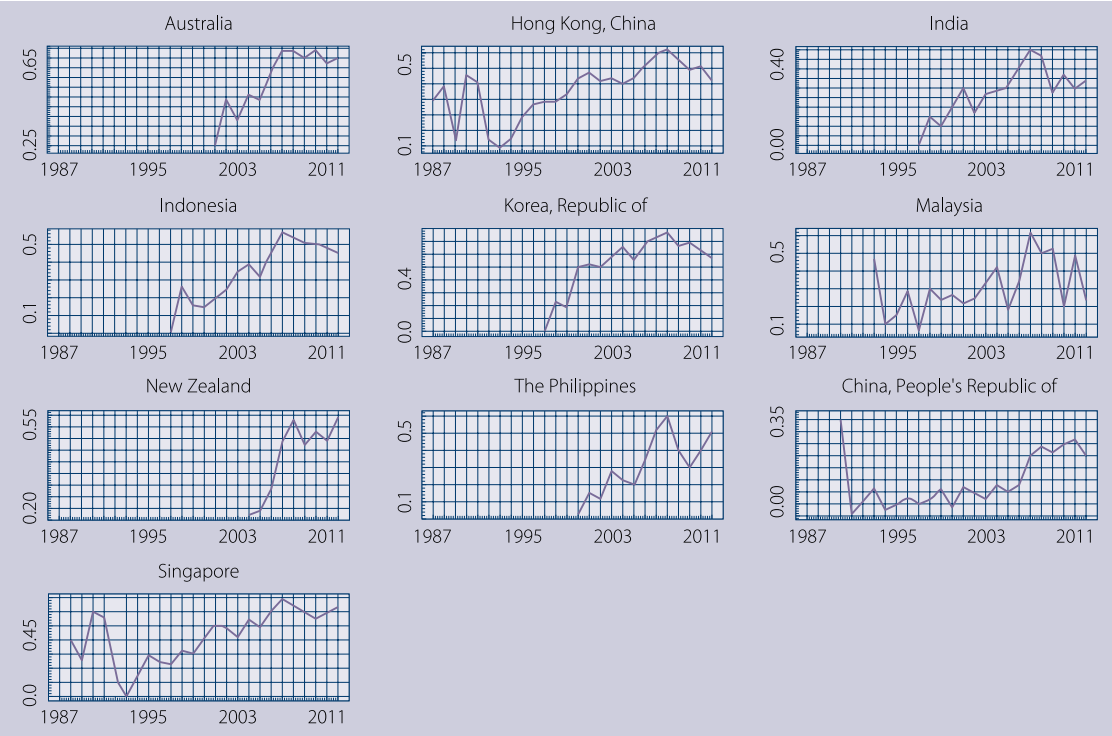

Figure 4.1 (b) Correlations of Asia Economies with Japan, 1987-2011

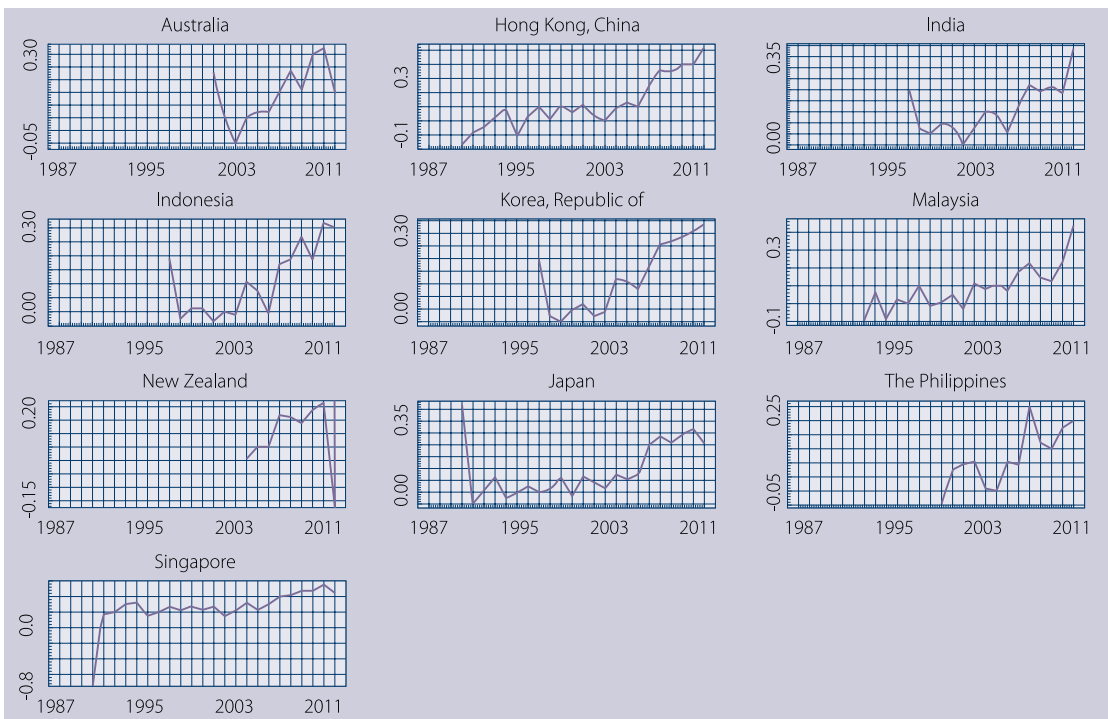

Figure 4.1 (c) Correlations of Asia Economies with China, 1987-2011

India, Republic of Korea, Malaysia, the Philippines, Singapore and Japan, on the other. This is a clear indication of China's growing financial importance in the wake of the sub-prime crisis.

Next, to understand the evolving roles played by the US, Japan and China in equity market synchronization, we examine the direction of Granger causality between the other Asian economies and these three economies. All Granger causalities in Table 4.2 are tested using bi-variate vector autoregressive regression (VAR) at a 5 percent significance level. "↔" indicates mutual causality. "No" means the causality is not statistically significant.

Table 4.2 (a) Leading Economies in the Equity Markets in Asia, 1987-1997

	US	Japan	China, People's Republic of
Hong Kong, China	↔	No	No
India	No	No	No
Indonesia	←	No	No
Korea, Republic of	No	No	No
Malaysia	←	←	No
Singapore	←	No	No

Table 4.2 (b) Leading Economies in the Equity Markets in Asia, 1998-2001

	US	Japan	China, People's Republic of
Australia	←	No	No
Hong Kong, China	←	↔	No
India	←	→	No
Indonesia	←	No	←
Korea, Republic of	←	↔	No
Malaysia	←	→	No
The Philippines	←	←	No
Singapore	←	→	→

Table 4.2 (c) Leading Economies in the Equity Markets in Asia, 2002-2006

	US	Japan	China, People's Republic of
Australia	↔	No	→
Hong Kong, China	↔	↔	No
India	←	→	No
Indonesia	←	No	No
Korea, Republic of	↔	No	No
Malaysia	←	→	No
New Zealand	←	No	←
The Philippines	←	No	←
Singapore	←	↔	No

Table 4.2 (d) Leading Economies in the Equity Markets in Asia, 2007-2011

	US	Japan	China, People's Republic of
Australia	↔	No	←
Hong Kong, China	↔	→	←
India	↔	↔	↔
Indonesia	↔	↔	↔
Korea, Republic of	↔	↔	←
Malaysia	↔	←	←
New Zealand	↔	←	←
The Philippines	↔	←	←
Singapore	↔	→	←

As shown in Table 4.2, during the 1987 to 1997 period, the equity markets of most economies in Asia follow the lead of the equity market in the US rather than those in Japan or China. During 1998-2001, the US continues to lead all the economies in Asia but Japan begins to exert some influence over the Asian economies. In particular, the equity market in Japan leads Hong Kong (SAR), Republic of Korea and the Philippines.

During 2002-2006, the US still leads all the Asian economies but feedback shocks become more and more important. In particular, the economic shocks experienced in Australia, Hong Kong

(SAR) and Republic of Korea influence the equity market in the US. It may be that the US economy is increasingly dependent on the Asian economies. It is interesting to note that Japan gradually loses its leading role in the Asian economies. Japan does not lead any Asian economies unilaterally. Moreover, India and Malaysia sometimes lead the equity market in Japan. The equity market in China influenced the equity markets in the Philippines and New Zealand, perhaps reflecting the influence of trade between these economies.

In the wake of the sub-prime crisis and the subsequent slowdown in the global economy, the US and all the Asian economies in our sample influence each other bilaterally. This suggests greater financial integration on a global scale. China now leads unilaterally almost all of the Asian economies except India and Indonesia.

Summary

This section analyzes the equity market synchronization and lead-lag relationship between the equity markets in the Asian economies and those in the US, Japan and China. The developments and trends over the past three decades (1987-2011) can be summarized as follows:

First, the degree of financial synchronization in Asia has increased over time. The equity markets in more and more Asian economies are closely correlated.

Second, the degree of financial interdependence in Asia is increasing. That is, more attention will have to be paid to the common risks facing Asia as opposed to country-specific risks. Therefore, a cooperative framework in financial integration is needed to better coordinate the Asian economies.

Third, the US has become more and more dependent on Asian economies after the sub-prime crisis. Concurrently, China has become more and more important in leading the equity markets in Asia. This is consistent with the growing importance of China's economy after the sub-prime crisis.

4.2 The Progress of the RMB toward an International Currency

4.2.1 Background

China's currency, the *renminbi* (RMB), is being more widely used in international transactions. This reflects the increasing competitiveness of Chinese exports in the global market, and its growing influence on international trade, investment and capital flows. This section briefly describes the recent progress that China has made in regards to making the RMB an international currency.

An international currency is used widely in trade invoicing and settlement, and for denominating internationally traded financial products. In recent years, Chinese government has taken steps to gradually transform the RMB into an international currency. The first step was establishing a successful offshore RMB market in Hong Kong (SAR). Starting in 2004, the Chinese government launched a series of policy reforms to allow international use of the RMB. These policy reforms allowed banks in Hong Kong (SAR) to take RMB deposits; encouraged the issuance of RMB denominated bonds in Hong Kong (SAR) bond market; and permitted international trade settlements in RMB.

4.2.2 RMB Deposits in Hong Kong (SAR)

In 2004, Chinese mainland first launched the RMB business in Hong Kong (SAR), which was designated as an offshore market for the RMB. The starting point for this internationalization effort was to allow the establishment of an offshore RMB deposit market in Hong Kong (SAR) and allowing individuals to convert up to RMB 20,000 *Yuan* a day in Hong Kong (SAR). To meet the growing demand for RMB related financial products, it has since developed a broad range of these products.

At the beginning of February 2004, total RMB deposits in Hong Kong (SAR) banks amounted to only RMB 895 million *Yuan*.[1] Licensed banks began to offer RMB deposit services on February 25, 2004. By the end of 2004, RMB deposits had risen more than ten-fold to 12.127 billion *Yuan*.

Figure 4.2 shows the total amount of the RMB deposits from February 2004 to October 2011 in Hong Kong (SAR). Before 2008, the growth in deposits was not significant. Deposits started to climb in 2008 before declining slightly in 2009. Significant growth only started in 2010. By the end of October 2011, the total RMB deposits in Hong Kong (SAR) had reached 618.546 billion *Yuan*.

Throughout the period, the number of authorized financial institutions in Hong Kong (SAR) engaged in RMB transactions had also increased. In February 2004, there were only 32 authorized institutions that were allowed to be engaged in

1 Include demand deposits and saving and time deposits

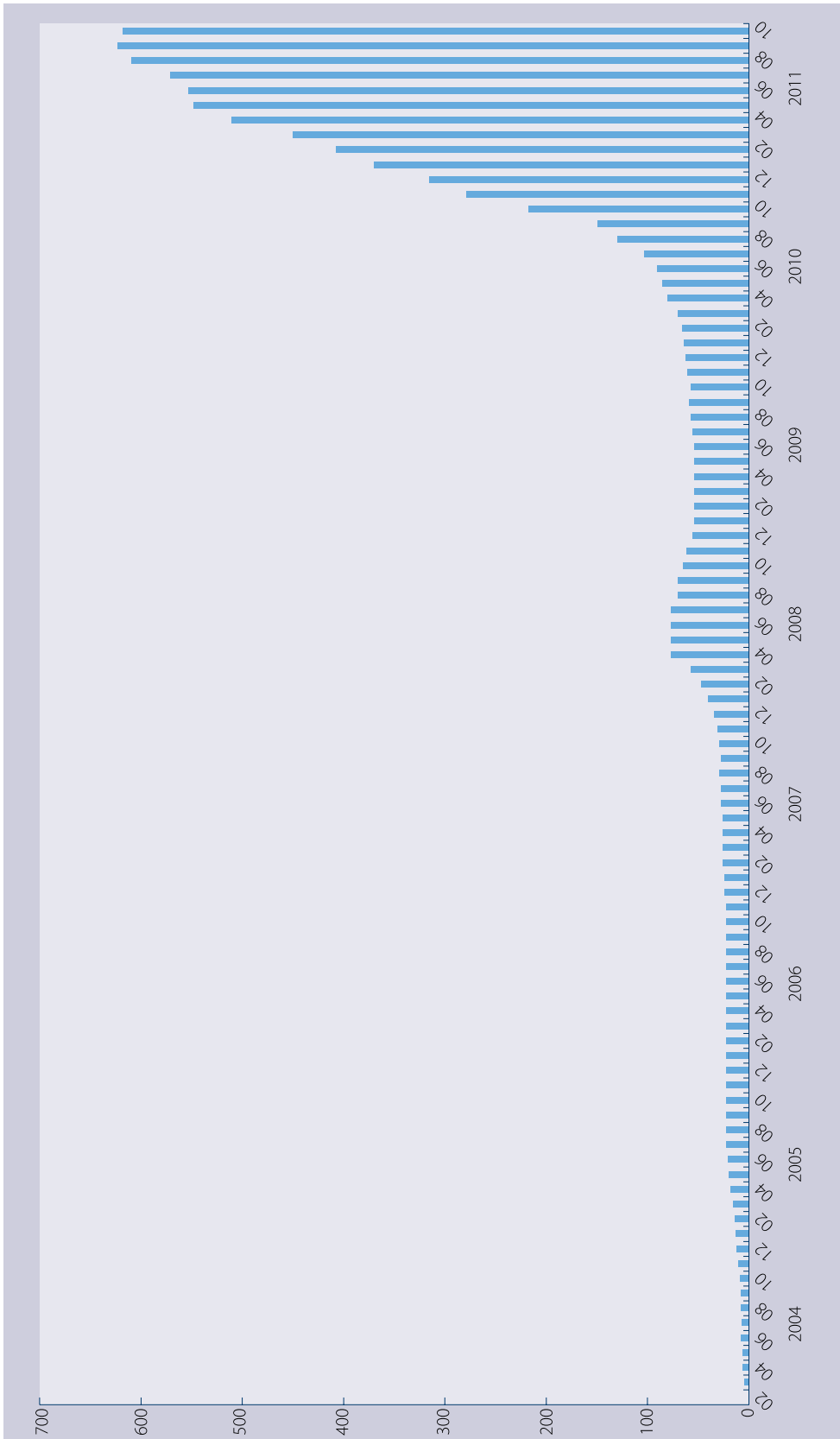

Figure 4.2 Total RMB Deposits (demand savings and time deposits) in Hong Kong (SAR) (RMB billion)

Source: Monthly Statistical Bulletin, Hong Kong Monetary Authority.

the RMB business. By the end of October 2011, the number had increased to 131.

4.2.3 "Dim Sum" Bonds

"Dim Sum" bonds are denominated in RMB and issued in the Hong Kong (SAR) market. "Dim Sum" bonds worth 5 billion *Yuan* in total were first issued in Hong Kong (SAR) in July 2007, by the China Development Bank, one of several policy banks in China. In 2010, RMB bonds with a total value of 36 billion *Yuan* were issued by 16 issuers in Hong Kong (SAR). In the first seven months of 2011, the total value of "Dim Sum" bonds issued had reached RMB 50 billion *Yuan* with 43 issuers involved in the activities. The major issuers included the Ministry of Finance of China, financial institutions in China[1], international financial institutions such as the Asian Development Bank, and financial institutions or companies incorporated outside the Chinese mainland.

Among the RMB bond issuances in Hong Kong (SAR) as of January 2011, 12 issuances were made by China's policy banks such as the China Development Bank and the Export-Import Bank of China. The Ministry of Finance of China initiated the two largest issuances (Chen and Cheung, 2011).

4.2.4 Trade Settlements in RMB

One of the functions of money is as a medium of exchange. To promote the internationalization of the RMB, an important goal is to have the currency widely used in international trade payments. Towards the end of the 1980s, the RMB began to be more and more widely used by private individuals for cross-border trade settlements. Today the RMB is accepted in many Asian economies such as Republic of Korea, Vietnam, Laos, Myanmar and Hong Kong (SAR). Cambodia and Nepal have announced that they welcome the official circulation of RMB in their markets (Ito, 2011).

In 2009, the Chinese government piloted a scheme that allowed Chinese importers and exporters to use the RMB to settle their trade transactions with foreign partners. The scheme initially covered only a few Chinese mainland cities and Hong Kong (SAR). Later on, it was expanded to twenty provinces and cities in China. Foreign partners could conduct their RMB business through their own banks outside China while banks dealing in the RMB outside China could transact with the clearing platform via their corresponding banks that have participated in the RMB dealings.

International trade settled in RMB through the banks in Hong Kong (SAR) averaged RMB 5 billion *Yuan* per month in the first half of 2010 while in the second half, the monthly average reached RMB 57 billion *Yuan*. In the first half of 2011, trade settlements using the RMB continued to increase to RMB 134 billion *Yuan* a month (HKMA, 2011).

The RMB has also been used in swaps between central banks. In March 2010, China participated in the arrangement for swaps under the *Chiang Mai Initiative* (CMI) among ASEAN+3 countries (China, Japan and Republic of Korea). The RMB was accepted by Japan, Republic of Korea and the Philippines in the currency swap arrangement under CMI. Other swap arrangements included the provision of crisis swap lines in 2009 by China's central bank, the People's Bank of China (PBoC), to: Argentina (70 billion *Yuan*), Belarus (20 billion *Yuan*), Hong Kong (SAR) (200 billion *Yuan*), Indonesia (100 billion *Yuan*), Republic of Korea(180 billion *Yuan*), and Malaysia (80 billion *Yuan*).

4.2.5 Role of Shanghai: the Next Global RMB Center

After successfully establishing an offshore RMB center in Hong Kong (SAR), the Chinese government has decided that Shanghai should be a global financial center. The State Council made this an official plan in early 2009. Accordingly, the National Development and Reform Commission of China unveiled a plan to make Shanghai a global center for RMB by 2015. Shanghai will become a center for RMB financial products innovation, trading, and settlements. A major market for RMB in Shanghai should facilitate the internationalization of the RMB. It will also help establish a market-based interest rate for RMB. The Shanghai Interbank Offered Rate (Shibor) is a wholesale interest rate calculated by arithmetically averaging all the interbank RMB lending rates of banks with a high credit rating. The Shibor can be seen as a risk-free interest rate to be used as a benchmark for pricing other RMB related financial products in China's capital market.

The internationalization of the RMB plays a pivotal role in determining whether Shanghai succeeds in becoming a global financial center. The inconvertibility of the RMB and heavy regulation of capital flows within China impede Shanghai's progress in this regard. As such, the pace at which Shanghai becomes an international financial center will largely depend on

1 Subject to the approval of relevant authorities in China.

the extent to which the Chinese government is willing to relax these constraints.

4.2.6 Conclusion

This section has briefly described three major policy reforms adopted by the Chinese government to permit the international use of the RMB. With its increasing importance in the global economy, China has started its drive to make the RMB as an international currency. While the policies to establish an offshore RMB market in Hong Kong (SAR) should be applauded, there is a need for further liberalization (such as relaxing the tight controls on capital account transactions within China) if the goal of internationalizing the RMB is to be achieved.

Table 4.3 Recent Development of Offshore RMB Business

January 2004	RMB business started in Hong Kong (SAR)
July 2007	First RMB bond issued in Hong Kong (SAR)
July 2009	The Pilot Scheme for RMB Trade Settlements
September 2009	The first RMB sovereign bond issued by the Ministry of Finance of China
June 2010	The Pilot Scheme for RMB Trade Settlements expanded to twenty provinces

Source: HKMA, 2011.

Chapter 5
Factory Asia Phenomenon

5.1 Development of the Asian Production Network

An integrated production network is the most important feature of the Asian economic integration. For example, the automobile production in Indonesia relied on the import of auto parts from Japan. A garment factory in Cambodia needed to import fabrics and yarns from China as the production inputs. The intensive trade among the economies in Northeast Asia and Southeast Asia demonstrates that the integration of production in Asia was thick and deep, which is often called the "Factory Asia Phenomenon".

Before the mid-1980s, the export-oriented processing trade was first popular in North America and Europe. Then, it moved to Asia, mainly taking the form of "export processing zones". In 1985, Factory Asia was very simple with the production network involving mainly Japan, Singapore, Malaysia and Indonesia. In the 1990s of the 21st century, Republic of Korea and Hong Kong (SAR) started to participate in the Asian production network. Thus, Factory Asia started to emerge (Ando 2006). In 2000, China and Thailand no longer engaged in simple processing exports, but started to supply large quantities of intermediate goods to other economies. Consequently, trade in intermediate inputs expanded rapidly in Asia. Today, Asia has developed a sophisticated production network and this network is called "Factory Asia".

Table 5.1 shows the change in the share of intermediate inputs in trade in the Asian economies in 1992 and 2006. In East Asia, the share of intermediate exports increased from 13 percent in 1992 to 22.7 percent in 2006 while the share of intermediate imports rose from 19.8 percent in 1992 to 36.5 percent in 2006. In Southeast Asia, the share of intermediate inputs also showed marked increase. In 1992, export of intermediate inputs from Southeast Asia accounted for 25.9 percent of the total and it rose to 40.2 percent in 2006 while the import of intermediate inputs increased from 31.9 percent in 1992 to 42.1 percent in 2006. From 1992 to 2006 China's trade in intermediate goods had increased five times. The evidence demonstrates the fast pace that the Asian economies participated in the global production network.

Table 5.2 shows that during the period from 1994 to 1995 Asia's trade in parts and components had concentrated largely in North America, Europe and Asia itself. Japan was important supplier of parts and components among the Asian economies. An important change during the period from 2005 to 2006 was that Asia's intra-regional trade in parts and components increased markedly, accounting for over 50 percent of its total trade in parts and components, while the share of North America and Europe in Asia's trade in parts and components declined to less than 20 percent, indicating that the formation of Asian production network was accelerating.

The above analysis has focused on a narrow range of products, mainly parts and components of mechanical and transport equipment (SITC7) or mechanical products (HS84-92) to illustrate the growth of Factory Asia. Figure 5.1 shows the share and growth rate of Asia's trade in all intermediate

Table 5.1 Share of Parts and Components in Manufacturing Trade (%)

	Export				Import			
	Total P&G[1]		ICT Products[2]		Total P&G		ICT Products	
	1992	2006	1992	2006	1992	2006	1992	2006
East Asia	13	22.7	9.1	17.6	19.8	36.5	11.8	28
China, People's Republic of	4.3	18.5	2.4	14.1	18.6	41.5	7.8	30.6
Hong Kong, China	17.3	24.1	12.9	19.6	17.3	36.5	9.9	29.2
Korea, Republic of	16.7	32.7	13.5	26.6	25.7	28.9	14.1	19.4
Southeast Asia	25.9	40.2	22.2	35.5	31.9	42.1	22.2	30.9
Indonesia	3	18.2	1.4	11.1	20.6	28.4	6.2	13.6
Malaysia	32.9	46.7	30.1	44.1	38.2	49.9	28.7	40.8
The Philippines	32.7	66.5	26.4	61.3	31.4	48.7	21.5	40.1
Singapore	31.3	42.3	26.8	38.1	35.8	43.5	27.6	32.4
Thailand	18.7	25.4	15	19	25.9	35.5	14	22.9
Vietnam	0.8	8.4	0.3	3.1	7.1	16.3	2.3	7.4
South Asia	2.3	5.5	0.5	1.3	15	17	4.3	6.8
India	3.3	7.1	0.6	1.6	17.2	18.6	5.2	7.7
Sri Lanka	2.7	4	1.4	1.6	9.3	10.1	2.7	3.9
Bangladesh	0.2	0.8	0.1	0.1	7.4	10.6	2.1	5.1
Pakistan	0.4	0.7	0.1	0.2	15.6	16	3.9	4.7
Nepal	1.2	1	0.2	0.1	13.2	8.9	4.1	2.7

Notes: 1. P&G: parts and components.
2. ICT: Information and Communications Technology (ICT, SITC75,76,772 and 776).

Source: Juthathip Jongwanich, William E. James, Peter J. Minor,and Alexander Greenbaum (2009). ADB Economics Working Paper Series No. 161.

Table 5.2 Direction of Developing Asia's Manufacturing Trade (%)

	NAFTA	EU-15	Japan	East Asia	China, People's Republic of	Southeast Asia	South Asia
East Asia							
Export to							
1994-1995	29.5	15.1	10.1	25	4.1	16.5	0.4
2005-2006	18.1	11.9	9.2	44	20.3	13.1	0.8
Import from							
1994-1995	18	12.6	32.8	31.2	3.7	10.5	0.1
2005-2006	9.7	9.1	19	51.8	12.4	16.1	0.1
China, People's Republic of							
Import from							
1994-1995	22.5	14.2	11.2	42.7		7.2	0.8
2005-2006	20.8	12.9	9.7	41.3		10.7	0.9
Export to							
1994-1995	9.4	16.1	16.6	53.7		2.6	0
2005-2006	6.3	10.1	16.1	62.1		10.5	0.1
Southeast Asia							
Export							
1994-1995	30.4	14.9	7.7	15.8	1.3	32.4	0.5
2005-2006	16.1	13.3	7.8	35.6	16.8	26.2	1
Import							
1994-1995	18.3	11.1	30.8	15.2	0.9	27	0.2
2005-2006	16	10.8	17.5	23.1	8.2	35.9	0.3
South Asia							
Export							
1994-1995	16.4	34.6	2.8	5.9	0.5	19.5	3.3
2005-2006	24	32.9	3.7	6.9	4.1	9.8	1.9
Import							
1994-1995	16.4	39.1	18	9.9	3.8	10.5	1.1
2005-2006	11.1	31	9.9	18.4	9	20.6	1.1

Source: Juthathip Jongwanich, William E. James, Peter J. Minor,and Alexander Greenbaum (2009). ADB Economics Working Paper Series No. 161.

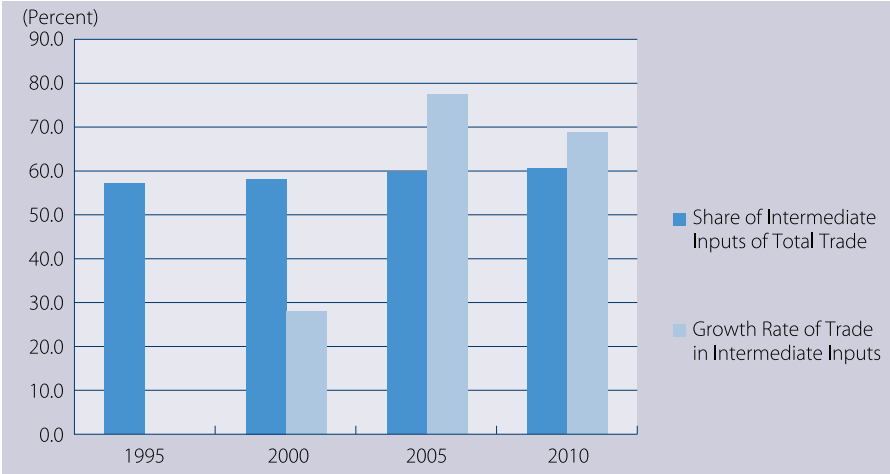

Figure 5.1 Asia's Trade in Intermediate Inputs—Share and Growth Rate, 1995-2010

Source: calculation based on data from UN ComTrade Database.

inputs based on the UN Classification by Broad Economic Categories (BEC).[1] It can be found in the figure that Asia's trade in intermediate goods accounted for 57.3 percent of its total trade in 1995. In 2005, the growth rate accelerated to over 70 percent. The share of intermediate good in Asia's trade had maintained around 60 percent.

5.2 The Evolving Role of Individual Economies and the Size of the Factory

5.2.1 The Evolving Role of Asian Economies in Factory Asia

Table 5.3 shows the trade in intermediate inputs by major Asian economies. In 2002, China started to overtake Japan as the region's largest trader in parts and components. In the year, China's total trade in parts and components reached USD158 billion as compared to Japan's USD147 billion, due to its slower speed of growth. ASEAN had been most important in the trade of intermediate goods. However, its position was replaced by China in 2006.

1 The intermediate inputs are based on the UN Classification by Broad Economic Categories (BEC). It is a three-digit classification and covered 7 categories of goods. The analysis here is based 5 categories and covered such intermediate goods as related to Food and beverages products (BEC-1), Industrial supplies not elsewhere specified (BEC-2), Fuels and lubricants(BEC-3), Capital goods (except transport equipment), and parts and accessories thereof (BEC-4), BEC-5: Transport equipment and parts and accessories thereof and Transport equipment and parts and accessories thereof (BEC-5).

China's trade in intermediate inputs was 3.6 times of that of Republic of Korea, 2.9 time of Japan and 1.5 times of ASEAN in 2010. Figure 5.2 shows that China accounted for over 30 percent of Asia's trade in intermediate inputs, thus, becoming a leading player in Factory Asia, if measured in terms of size.

5.2.2 Factory America, Factory Europe and Factory Asia, Which is the Largest

Factory Asia is the largest among the three factories in the world, as evidenced by the amount of trade of intermediate goods (Table 5.4). Facotry Europe ranks second while Factory America is the smallest among the three. Measured by the trade in intermediate inputs, Factory Asia and Factory Europe was similar in size in 2005, while Factory America already lagged behind at the time. After 2005, the gap between Asia and Europe widened. In 2008, Asia's export of intermediate goods peaked at the level of USD1.07 trillion. With the negative impact of the global financial crisis, Asia's export of intermediate goods droped to USD963.1 billion, but its global share rose to 46.6 percent. Europe had experienced several years of expansion in its export of intermediate inputs after 2005. But with the outbreak of the global financial crisis in 2008, Europe's trade in intermediate goods fell back to USD660.5 billion and its global share shrank from 36 percent in 2005 to 32 percent in 2009. Similar trends can be found on the import side for Europe. In 2005, Europe's import of intermediate goods was USD662.9 billion, accounting for 36 percent of the

Table 5.3 Asia's Trade in Parts and Components, 2000-2010 (USD billion)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
China, People's Republic of	109	122	158	217	295	371	471	556	608	553	721
Japan	179	146	147	169	200	206	218	232	241	195	247
Korea, Republic of	102	80	90	106	132	141	151	170	175	157	199
Hong Kong, China	125	120	133	159	199	231	268	299	315	294	373
India	10	11	12	15	19	24	28	34	36	42	50
ASEAN	285	242	263	297	352	387	439	465	451	396	485
Asia	815	726	809	970	1,205	1,370	1,588	1,766	1,836	1,646	2,086

Note: The components and parts were based on the classification of the UN SITC (Rev3) and intermediate goods covered include: Rubber tyres, textile yarn, fabrics and made-up materials, parts of structure in iron and steel, internal cumbustion engines, other engines and motors, construction machinery, office and adding machinery, telecommunication equipment, switchgear, electronic components, motor vehicles and accessories, lamps and lighting, fittings, and mattress supports and cushion for furniture. Together, they accounted for over 70 percent of Asia's total trade in parts and components.

Source: Based on the UN ComTrade Database.

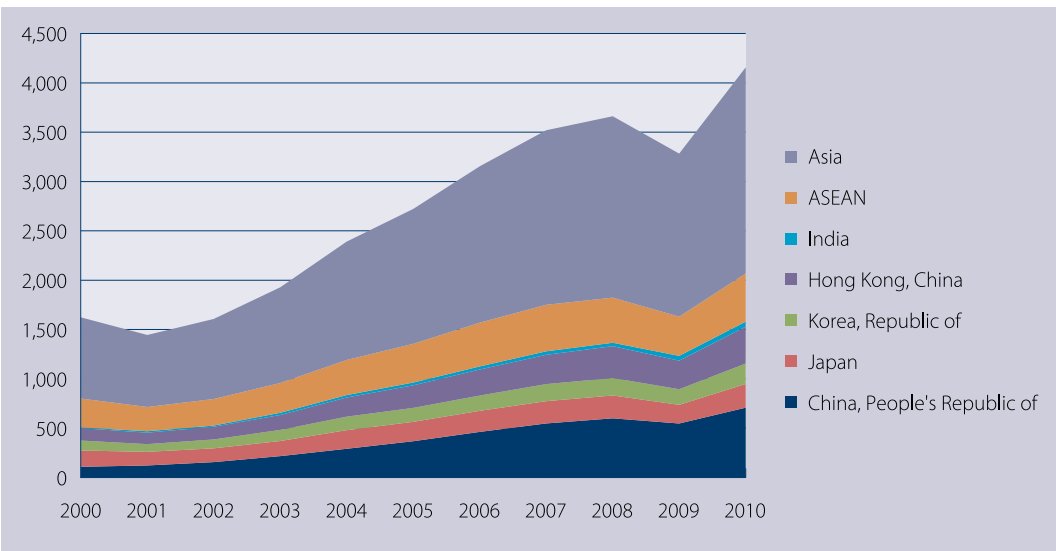

Figure 5.2 Distribution Trade in Intermediate Inputs in Asia, 2000-2010 (USD billion)

Source: Based on the UN ComTrade Database.

Table 5.4 Trade in Intermediate Goods in Asia, Europe and North America, 2005-2009 (USD billion)

	Trade	2005	2006	2007	2008	2009
Asia	Export	748.1	900.1	1015.5	1071.6	963.1
	Share of world(%)	38.4	40.5	42.0	42.2	46.6
	Import	665.9	770.5	858.0	883.1	807.6
	Share of world(%)	36.2	36.8	36.6	35.6	39.5
Europe	Export	693.4	783.9	840.8	878.6	660.5
	Share of world(%)	35.5	35.3	34.8	34.6	32.0
	Import	662.9	747.9	844.5	879.5	661.9
	Share of world(%)	36.0	35.7	36.1	35.5	32.4
North America	Export	260.8	281.0	292.0	296.3	212.3
	Share of world(%)	13.4	12.7	12.1	11.7	10.3
	Import	362.4	388.1	400.7	393.9	320.2
	Share of world(%)	19.7	18.5	17.1	15.9	15.7

Source: The UN ComTrade Database.

global import, a level that was similar to that of Asia. But after the global financial crisis in 2008, Europe's import of intermediate goods fell from its peak of USD879.5 billion in 2008 to USD661.9 billion in 2009 and the global share shrank to 32.4 percent as compared to Asia's 46.6 percent in 2009.

5.3 Interdependence of Factory Asia

Table 5.5 shows the interdependence (index) among the members of Factory Asia. In 2009 Factory Asia's dependence on its own was 0.635, suggesting that Factory Asia's internal dependence was already very high.[1] Figure 5.3 shows the rankings of Factory Asia's dependence on each individual economies. Apparently, Factory Asia has the highest dependence on China (0.197), followed, surprisingly, by Hong Kong (SAR) (0.114), Japan (0.068) and Singapore (0.065).

From Table 5.5, one can also see that Hong Kong (SAR) is most dependent on Factory Asia with an index of 0.82, followed by Singapore (0.708). Figure 5.4 shows the rankings of the economies that are most dependent on Factory Asia.

In general, the Asian economies' dependence on Factory Asia is high with the index of dependence all above 0.5. While Factory Asia's dependence on China is the highest among the Asian individual economies, China only has modest dependence on Factory Asia with the dependence index equal to 0.575, similar to that of Japan.

Table 5.5 also shows the relations between US and Factory Asia. The index of Factory Asia's dependence on US is 0.091, a value that is lower than that for China and even Hong Kong (SAR), but higher than Japan and Republic of Korea. Among individual economies, while Japan, with an index of 0.123, had the highest dependence on US among the Asian economies, it was actually more dependent on China (0.249) than on US. In fact, the dependence of the Asian economies on China all exceeded their dependence on US as demonstrated in Table 5.5.

1 As a reference, in this calculation the maximum dependence is 1.

Table 5.5 Index of Dependence in Factory Asia, 2009 (%)

Of X \ On Y	Japan	China, People's Republic of	Korea, Republic of	India	Indonesia	Thailand	Hong Kong, China	Malaysia	Singapore	The Philippines	Asia	US
Japan	0.000	0.249	0.064	0.008	0.017	0.052	0.077	0.035	0.051	0.022	0.575	0.123
China, People's Republic of	0.086	0.000	0.076	0.017	0.006	0.011	0.310	0.027	0.035	0.007	0.575	0.091
Korea, Republic of	0.079	0.272	0.000	0.017	0.012	0.010	0.082	0.015	0.085	0.015	0.588	0.135
India	0.036	0.220	0.062	0.000	0.014	0.020	0.050	0.020	0.078	0.005	0.504	0.095
Indonesia	0.141	0.152	0.082	0.025	0.000	0.049	0.018	0.021	0.090	0.011	0.587	0.047
Thailand	0.179	0.104	0.028	0.016	0.021	0.000	0.069	0.080	0.104	0.021	0.621	0.081
Hong Kong, China	0.050	0.580	0.043	0.007	0.006	0.013	0.000	0.035	0.072	0.013	0.820	0.046
Malaysia	0.075	0.168	0.025	0.009	0.011	0.050	0.116	0.000	0.234	0.011	0.699	0.119
Singapore	0.077	0.116	0.097	0.019	0.072	0.056	0.132	0.118	0.000	0.021	0.708	0.081
The Philippines	0.124	0.113	0.070	0.006	0.011	0.034	0.114	0.030	0.112	0.000	0.614	0.104
Asia	0.068	0.197	0.056	0.013	0.013	0.021	0.150	0.039	0.065	0.013	0.635	0.091
US	0.061	0.131	0.055	0.011	0.003	0.012	0.035	0.028	0.037	0.009	0.382	0.000

Source: Calculation was based on data from the UN ComTrade Database.

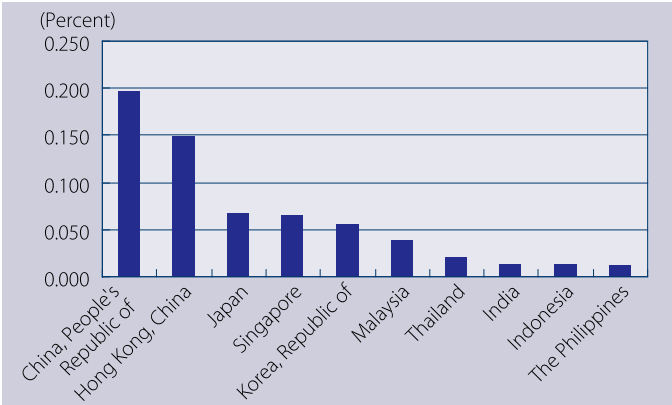

Figure 5.3 On Whom Factory Asia Depends Most—Ranking of Economies in order of Importance, 2009

Source: Same as Table 5.5.

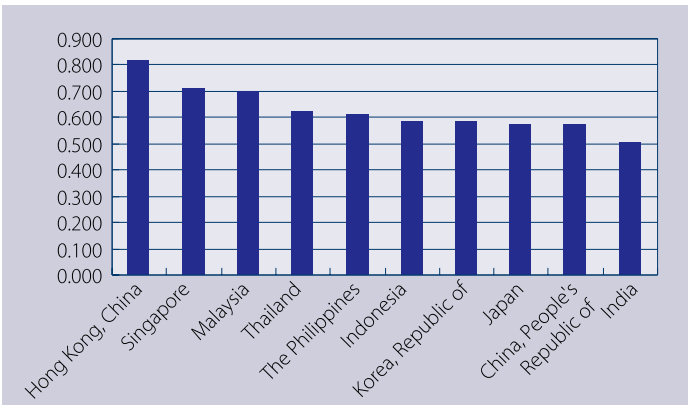

Figure 5.4 Who Depends on Factory Asia Most—Rankings of Economies in order of Degree of Dependence

Source: Same as Table 5.5.

Appendix

Chronological Dates of Economic Integration Agreements in Asia

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
Northeast Asia	China, people's Republic of	APTA	G	1975.7.31	1976.6.17		
		Hong Kong, China	G&S	2003.6.29	2004.1.1		
		ASEAN (G)	G	2004.11.29	2005.7.1		
		ASEAN (S)	S	2007.1.14	2007.1.1		
		Macao, China	G&S	2003.10.17	2004.1.1		
		Chile	G	2005.11.18	2006.10.1		
		Pakistan	G	2006.11.24	2007.7.1		
		New Zealand	G&S	2008.4.7	2008.10.1		
		Singapore	G&S	2008.10.23	2009.1.1		
		Peru	G&S	2009.4.28	2010.3.1		
		SACU	Na			2004.6.28	
		GCC	Na			2005.4.23	
		Australia	Na			2005.5.23	
		Iceland	Na			2006.4.12	
		Norway	Na			2009.5.31	
		Costa Rica	G&S	2010.4.8	2011.8.1		
		Korea-Japan	Na				2002.11.30
		India	Na				2003.6.23
		Korea, Republic of	Na				2006.3.22
		SCO	Na				2003.9.23
		South Africa	Na				2004.6.29
		ASEAN+3	Na	2004.11.29	2005.7.1		
		ASEAN+6	Na				2005.12.14
		Switzerland	Na			2011.4.7	

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
	Hong Kong, China	China, People's Republic of	G&S	2003.6.29	2004.1.1		
		New Zealand	G&S	2010.3.29	2011.1.1		
		EFTA	G	2011.6.21			
		Chile	Na				2009.3.20
	Korea, Republic of	APTA	G	1975.7.31	1976.6.17		
		Chile	G&S	2003.2.15	2004.4.1		
		Singapore	G&S	2005.8.4	2006.3.2		
		EFTA	G&S	2005.12.15	2006.9.1		
		ASEAN (G)	G	2006.8.24	2007.6.1		
		US	G&S	2007.6.30	2012.1.1		
		ASEAN (S)	S	2007.11.21	2009.5.1		
		India	G&S	2009.8.7	2010.1.1		
		EU	G&S	2009.10.15			
		Japan	Na				2008.11
		Canada	Na			2005.7.28	
		Mexico	Na			2006.1.31	
		New Zealand	Na			2008.9.29	
		Australia	Na			2008.10.1	
		GCC	Na			2009.3.9	
		Peru	G&S	2011.3.21	2011.8.1		
		Colombia	Na			2009.12.7	
		Japan-China	Na				2002.11.30
		Thailand	Na				2003.8.23
		Malaysia	Na				2004.7.31
		MERCOSUR	Na				2004.11.16
		ASEAN+3	Na				2004.11.29
		South Africa	Na				2005.6.29
		ASEAN+6	Na				2005.12.14
		China, People's Republic of	Na				2006.3.22
		Russia	Na				2007.10
		Turkey	Na				2008.6
	Japan	Singapore	G&S	2002.1.13	2002.11.30		
		Mexico	G&S	2004.9.17	2005.4.1		
		Malaysia	G&S	2005.12.13	2006.7.13		
		The Philippines	G&S	2006.9.9	2008.12.11		
		Chile	G&S	2007.3.27	2007.9.3		
		Thailand	G&S	2007.4.3	2007.11.1		
		Brunei Darussalam	G&S	2007.6.18	2008.7.31		

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		Indonesia	G&S	2007.8.20	2008.7.1		
		ASEAN	G	2008.4.14	2008.12.1		
		Vietnam	G&S	2008.12.25	2009.10.1		
		Switzerland	G&S	2009.2.19	2009.9.1		
		Korea, Republic of	Na				2008.11
		GCC	Na			2006.9.21	
		India	G&S	2011.2.15	2011.8.1		
		Australia	Na			2007.4.23	
		Peru	Na	2011.5.31			
		China-Korea	Na				2002.11.30
		ASEAN+3	Na				2004.11.29
		Canada	Na				2005.1.19
		ASEAN+6	Na				2005.12.14
		Mongolia	Na				2010.6.24
Southeast Asia	ASEAN	AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.3		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-Australia and New Zealand	G	2009.2.27	2010.1.1		
		ASEAN-EU	Na			2007.5.5	
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
	Brunei Darussalam	AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		TPP	Na			2010.3.15	
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		Japan	G&S	2007.6.18	2008.7.31		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-Australia and New Zealand	G	2009.2.27	2010.1.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		ASEAN-EU	Na			2007.5.5	
		ASEAN+3	Na				2004.11.29

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		ASEAN+6	Na				2005.12.14
		US	Na				2002.12.16
		Pakistan	Na				2007.8
	Cambodia	AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-Australia and New Zealand	G	2009.2.27	2010.1.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		ASEAN-EU	Na			2007.5.5	
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
	Indonesia	AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		Japan	G&S	2007.8.20	2008.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-Australia and New Zealand	G	2009.2.27	2010.1.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		D-8 PTA	Na	2006.5.13			
		GSTIP	G	1988.4.13	1989.4.19		
		Pakistan	Na			2005.11.24	
		ASEAN-EU	Na			2007.5.5	
		US	Na				1996.11.30
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
		India	Na				2005.8.8
		EFTA	Na				2005.11.29
		Australia	Na			2010.11.2	
	Lao PDR	APTA	G	1975.7.31	1976.6.17		
		Thailand	G	Na	1991.6.20		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		AFTA	G	1992.1.28	1993.1.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-Australia and New Zealand	G	2009.2.27	2010.1.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		ASEAN-EU	Na			2007.5.5	
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
	Malaysia	GSTP	G	1988.4.13	2989.4.19		
		AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		Japan	G&S	2005.12.13	2006.7.13		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		Pakistan	G&S	2007.11.8	2008.1.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-Australia and New Zealand	G	2009.2.27	2010.1.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		New Zealand	G&S	2009.10.26			
		D-8 PTA	Na	2006.5.13			
		TPS-OIC	Na			2004.3.31	
		ASEAN-EU	Na			2007.5.5	
		Australia	Na			2005.5.19	
		US	Na			2006.6.12	
		TPP	Na			2010.3.15	
		GCC	Na				2011.1.30
		Chile	Na	2010.11.13			
		India	G&S	2011.2.18	2011.7.1		
		Korea, Republic of	Na				2004.7.31
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
	Myanmar	GSTP	G	1988.4.13	1989.4.19		
		AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		ASEAN-Australia and New Zealand	G&S	2009.2.27	2010.1.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		ASEAN-EU	Na			2007.5.5	
		BIMSTEC	Na			2004.9.7	
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
	The Philippines	PTN	G	1971.12.8	1973.2.11		
		AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		Japan	G&S	2006.9.9	2008.12.11		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-Australia and New Zealand	G&S	2009.2.27	2010.1.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		US	Na				1988.11.30
		ASEAN-EU	Na			2007.5.5	
		Pakistan	Na				2004.4.1
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
	Singapore	AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Australia and New Zealand	G&S	2009.2.27	2010.1.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		New Zealand	G&S	2000.11.14	2001.1.1		
		Japan	G&S	2002.1.13	2002.11.30		
		EFTA	G&S	2002.2.26	2003.1.1		
		Australia	G&S	2003.2.17	2003.7.28		
		US	G&S	2003.5.6	2004.1.1		
		Jordan	G&S	2004.5.16	2005.8.22		
		India	G&S	2005.6.29	2005.8.22		
		Korea, Republic of	G&S	2005.8.4	2006.3.2		
		Panama	G&S	2006.3.1	2006.7.24		

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		Peru	G&S	2008.5.28	2009.8.1		
		China, People's Republic of	G&S	2008.10.23	2009.1.1		
		Bahrain	Na	2008.12.15			
		GCC	Na	2008.12.15			
		Mexico	Na			2000.6.30	
		Canada	Na			2001.10.21	
		Egypt	Na			2006.10.31	
		Qatar	Na			2004.12.22	
		Kuwait	Na			2005.1.17	
		Pakistan	Na			2005.8.24	
		ASEAN-EU	Na			2007.5.5	
		Ukraine	Na			2007.5.7	
		TPP	Na			2010.3.15	
		Costa Rica	Na	2010.4.6			
		Sri Lanka	Na				2003.8.29
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
		UAE	Na				2005.3.11
		EU	Na				2009.12.22
	Thailand	AFTA	G	1992.1.28	1993.1.1		
		Australia	G&S	2004.7.5	2005.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Australia and New Zealand	G&S	2009.2.27	2010.1.1		
		Japan	G&S	2007.4.3	2007.11.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		Lao PDR	G	Na	1991.6.20		
		Bahrain	Na			2002.12.29	
		India	Na			2003.11.30	
		BIMSTEC	Na			2004.9.7	
		Peru	Na			2004.1.29	
		US	Na			2004.5.31	
		EFTA	Na			2005.10.15	

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		ASEAN-EU	Na			2007.5.5	
		Korea, Republic of	Na				2003.8.23
		Pakistan	Na				2004.3.31
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
		Chile	Na				2006.3.10
		MERCOSUR	Na				2006.3.11
	Vietnam	AFTA	G	1992.1.28	1993.1.1		
		ASEAN-China (G)	G	2004.11.29	2005.7.1		
		ASEAN-Korea (G)	G	2006.8.24	2007.6.1		
		ASEAN-China (S)	S	2007.1.14	2007.7.1		
		ASEAN-Korea (S)	S	2007.11.21	2009.5.1		
		ASEAN-Australia and New Zealand	G&S	2009.2.27	2010.1.1		
		ASEAN-Japan	G	2008.4.14	2008.12.1		
		Japan	G&S	2008.12.15	2009.10.1		
		ASEAN-India	G	2009.8.13	2010.1.1		
		ASEAN-EU	Na			2007.5.5	
		Chile	Na			2008.1.24	
		TPP	Na			2010.3.15	
		ASEAN+3	Na				2004.11.29
		ASEAN+6	Na				2005.12.14
		EFTA	Na				2010.5.19
		Korea, Republic of	Na				2010.6.23
		CURBK	Na				2010.10.12
Oceania	Australia	SPAETECA	G	1980.7.14	1981.1.1		
		New Zealand	G	1982.12.14	1983.1.1		
		PNG (PATCRA I)	G	1976.11.6	1977.2.1		
		PNG (PATCRA II)	G&S	1991.2.21	1991.9.20		
		Singapore	G&S	2003.2.17	2003.7.28		
		US	G&S	2004.5.18	2005.1.1		
		Chile	G&S	2008.7.30	2009.3.6		
		Thailand	G&S	2004.7.5	2005.1.1		
		ASEAN-New Zealand	G	2009.2.27	2010.1.1		
		UAE	Na			2005.3.16	
		Malaysia	Na			2005.5.19	
		China, People's Republic of	Na			2005.5.23	

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		Japan	Na			2007.4.23	
		GCC	Na			2007.7.30	
		Korea, Republic of	Na			2008.10.1	
		Mexico	Na				2006.1.1
		ASEAN+6	Na				2005.12.14
		TPP	Na			2010.3.15	
		India	Na			2011.7.28	
		Indonesia	Na			2010.11.2	
		PACER Plus	Na			2009.8	
		Colombia	Na				2009.12.7
	New Zealand	SPAETECA	G	1980.7.14	1981.1.1		
		Australia	G	1982.12.14	1983.1.1		
		Australia	S	1988.8.18	1989.1.1		
		Singapore	G&S	2000.11.14	2001.1.1		
		Thailand	G&S	2005.4.19	2005.7.1		
		TPP				2010.3.15	
		China, People's Republic of	G&S	2008.4.7	2008.10.1		
		ASEAN-Australia-New Zealand	G&S	2009.2.27	2010.1.1		
		Malaysia	Na	2009.10.26			
		Hong Kong, China	G&S	2010.3.29	2011.1.1		
		GCC	Na			2007.6.30	
		Korea, Republic of	Na			2008.9.29	
		Mexico	Na				2002.10.23
		ASEAN+6	Na				2005.12.14
		India	Na			2010.4.7	
		PACER Plus	Na			2009.8	
	Papua New Guinea (PNG)	SPAETECA	G	1980.7.14	1981.1.1		
		Australia (PATCRA I)	G	1976.11.6	1977.2.1		
		Australia (PATCRA II)	G&S	1991.2.21	1991.9.20		
		MSG	G	1993.7.22	1994.1.1		
		PICTA	G	2001.8.18	2003.4.13		
		Pacific ACPEC	Na			2004.9.10	
		PACER Plus					2009.6.17
South Asia	Afghanistan	SAFTA	G	2004.1.6	2006.1.1		

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		ECO	Na	2003.7.17			
		India	G	2003.3.6	2003.5.13		
		TPS-OIC	Na			2004.4	
		Pakistan	Na				2005.1.31
	India	APTA	G	1975.7.31	1976.6.17		
		GSTP	G	1988.4.13	1989.4.19		
		Nepal	G	1991.12.6	2002.3.6		
		SAPTA	G	1993.4.11	1995.12.7		
		Sri Lanka	G	1998.12.28	2001.12.15		
		Afghanistan	G	2003.3.6	2003.5.13		
		SAFTA	G	2004.1.6	2006.1.1		
		MERCOSUR	Na	2004.1.25	2009.6.1		
		Singapore	G&S	2005.6.29	2007.9.11		
		Bhutan	G	2006.7.28	2006.7.29		
		Chile	G	2006.3.8	2007.9.11		
		Korea, Republic of	G&S	2009.8.7	2010.1.1		
		ASEAN	Na	2009.8.13	2010.1.1		
		Egypt	Na			2002.9.30	
		Thailand	Na			2003.11.30	
		SACU	Na			2004.9.7	
		BIMSTEC	Na			2004.9.7	
		Mauritius	Na			2005.8.8	
		GCC	Na			2006.3.22	
		Japan	G&S	2011.2.15	2011.8.1		
		EU	Na			2007.6.28	
		Malaysia	G&S	2011.2.18	2011.7.1		
		EFTA	Na			2008.1.26	
		EC	Na			2007.6.8	
		China, People's Republic of	Na				2003.6.23
		Colombia	Na				2003.11.30
		Uruguay	Na				2003.11.30
		Venezuela	Na				2003.11.30
		Israel	Na			2006.1.1	
		Pakistan	Na				2005.2
		Indonesia	Na				2005.8.8
		ASEAN+6	Na				2005.12.14
		Russia	Na				2006.2.6
		New Zealand	Na			2010.4.7	

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		Australia	Na			2011.7.28	
		Turkey	Na				2009.9.8
		Canada	Na			2010.11.16	
	Jordan	PAFTA	G	1997.2.19	1998.1.1		
		EU	G	1997.11.24	2002.5.1		
		US	G&S	2000.10.24	2001.12.17		
		EFTA	G	2001.6.21	2002.1.1		
		Singapore	G&S	2004.5.16	2005.8.2		
		Canada	Na	2009.6.28			
	Nepal	Indo-Nepal	G	1991.12.6	2002.3.6		
		SAPTA	G	1993.4.11	1995.12.7		
		SAFTA	G	2004.1.6	2006.1.1		
		BIMSTEC				2004.9.7	
		Pakistan					2009.6.29
	Pakistan	PTN	G	1971.12.8	1973.2.11		
		GSTP	G	1988.4.13	1989.4.19		
		SAPTA	G	1993.4.11	1995.12.7		
		Malaysia	G&S	2007.11.8	2008.1.1		
		Iran	G	2004.3.4	2006.9.1		
		Mauritius	Na	2007.7.30	2007.11.30		
		Sri Lanka	G	2002.8.1	2005.6.12		
		China, People's Republic of	G	2005.4.5	2007.7.1		
		SAFTA	G	2004.1.6	2006.1.1		
		ECO	G	Na	1992.2.17		
		D-8 PTA	Na	2006.5.13			
		TPS-OIC	Na			2004.3.31	
		Turkey	Na			2004.5.25	
		GCC	Na			2004.8.24	
		Indonesia	Na			2005.11.24	
		MERCOSUR	Na			2005.7.11	
		Bangladesh	Na			2003.11.16	
		Morocco	Na			2004.11.30	
		Singapore	Na			2005.8.24	
		Afghanistan	Na				2005.1.31
		Brunei Darussalam	Na				2007.8
		EU	Na				2009.6.17

continued

		With	Coverage	Dates Signed	Dates Enforced	Under Negotiation	Proposed/ Under Consultation and Study
		Jordan	Na				2006.6.26
		Kazakhstan	Na				2003.11.30
		Nepal	Na				2009.6.29
		The Philippines	Na				2004.4.1
		Tajikistan	Na				2004.5.6
		Thailand	Na				2004.3.31
		US	Na				2002.11.30

Notes:

1. The dates are based on ADB's Asia Regional Integration Center (http://aric.adb.org), unless otherwise stated.
2. Coverage (Goods vs. Services) is based on WTO's Regional Trade Agreements Information System (http://rtais.wto.org). G=Goods, S=Services, Na=not available.
3. Data for the item "under negotiation" are based on ADB's Asia Regional Integration Center and country-specific sources, as follows:
   Australian Department of Foreign Affairs and Trade
   China FTA
   Foreign Affairs and International Trade Canada
   Ministry of Commerce and Industry of India
   Japan Ministry of Foreign Affairs
   Korea Ministry of Foreign Affairs and Trade
   Singapore FTA Network
4. Members of various regional blocks:
   AFTA (ASEAN Free Trade Area): Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand, Vietnam, Laos, Myanmar and Cambodia.
   APTA (Asia-Pacific Trade Agreement): Bangladesh, China, India, Republic of Korea, Laos, Sri Lanka, Nepal and the Philippines.
   BIMSTEC (Bay of Bengal Initiative for Multi-Sectorial Technical and Economic Cooperation): Bangladesh, India, Myanmar, Sri Lanka, Thailand, Bhutan and Nepal.
   D-8 PTA (Preferential Tariff Arrangement-Group of Eight Developing Countries): Bangladesh, Malaysia, Pakistan, Egypt, Iran, Nigeria and Turkey.
   ECO (Economic Cooperation Organization): Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, Iran, Pakistan and Turkey.
   EFTA (European Free Trade Association): Switzerland, Norway, Liechtenstein and Iceland.
   GSTP (Global System of Trade Preferences among Developing countries): Algeria, Argentina, Bangladesh, Benin, Bolivia, Brazil, Cameroon, Chile, Colombia, Cuba, Democratic People's Republic of Korea, Ecuador, Egypt, Ghana, Guinea, Guyana, India, Indonesia, Iran, Iraq, Libya, Malaysia, Mexico, Morocco, Mozambique, Myanmar, Nicaragua, Nigeria, Pakistan, Peru, the Philippines, Republic of Korea, Romania, Singapore, Sri Lanka, Sudan, Thailand, Trinidad and Tobago, Tunisia, Tanzania, Venezuela, Vietnam and Zimbabwe.
   MERCOSUR (Southern Common Market): Brazil, Argentina, Uruguay and Paraguay.
   MSG (Melanesian Spearhead Group): Fiji, Papua New Guinea, Solomon Islands and Vanuatu.
   PACER (Pacific Agreement on Closer Economic Relations): Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu
   PAFTA (Pan Arab Free Trade Area): Egypt, United Arab Emirates (UAE), Bahrain, Jordan, Tunisia, Saudi Arabia, Sudan, Syria, Iraq, Oman, Palestine, Qatar, Kuwait, Lebanon, Libya, Morocco and Yemen.
   PICTA (Pacific Islands Countries Trade Agreement): Cook Islands, Fiji, Federal States of Micronesia, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.
   PTN (Protocol on Trade Negotiations): Bangladesh, Brazil, Chile, Egypt, Israel, Republic of Korea, Mexico, Pakistan, Paraguay, Peru, the Philippines, Serbia, Tunisia, Turkey and Uruguay.
   SACU (Southern Africa Customs Union): Botswana, Lesotho, Namibia, South Africa, and Swaziland.
   SAFTA (South Asian Free Trade Area): Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Afghanistan and Sri Lanka.
   SAPTA (SAARC Preferential Trading Arrangement): Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

SCO (Shanghai Cooperation Organization): China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan.
SPARTECA (South Pacific Regional Trade and Economic Co-operation Agreement):
Cook Islands, Australia, Fiji, Republic of Marshall Islands, Federated States of Micronesia, Nauru, New Zealand, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, Kiribati and Niue.
TPP (Trans-Pacific Strategic Economic Partnership): Brunei, Chile, New Zealand and Singapore.
TPS-OIC (Trade Preferences System of the Organization of the Islamic Conference): Bahrain, Cameron, Guinea, Jordan, Libya, Pakistan, Syria, Turkey, United Arab Emirates, Bangladesh, Egypt, Iran, Lebanon, Senegal, Tunisia and Uganda.

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