

Trade Patterns of East Asia: Before and After the Currency Crisis*

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Trade data of the one year following the crisis suggests that Japan, by far the region's largest economy and trading nation, is struggling from its long-running recession, unable to provide the needed stimulus through trade. Instead, East Asia's export loss went to markets of North America and EU. This paper identified the need for region-wide policy coordination and highlighted the role of China in maintaining stability of the region is highlighted. In addition, this paper found a trend toward increasing regional concentration in all major trading blocs into the late 1990s. Increasing gravity coefficients of the three large regions observed suggest that within each region, preference for the region's products in place of imports from outside is increasing. Too much gravity may result in interregional trade conflict placing a strain on the spirit of multilateral trading system embodied in the World Trading Organization (WTO) regime. WTO should review the consequences of the recent trend of increasing regional concentration. This paper also emphasizes the role of international investment in enhancing trade between economies and regions. The economies of ASEAN-4 achieved a remarkable growth following this strategy and were able to increase their trade. Foreign direct investment that highlights an economy's comparative advantage induces more intraindustry trade and specialization. FDI and trade are not substitute, but increasingly becoming more complementary. In this regard, East Asian economies, particularly those hit by the current crisis should promote inflow of FDI by establishing more transparent and liberal investment regimes

1. INTRODUCTION

The phenomenal economic performances of the East Asian economies¹ in the post war period is one of the most extensively documented subject among trade and development economists. Over the past three decades, economies in this region recorded an astonishing growth performance by any standards, which, in a well-known study by the World Bank indicated, is largely attributable to the outward-looking, export-oriented growth strategy path taken².

Prior to the Asian Financial Crisis in 1997, East Asian region as a whole exported

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¹ The region referred to as "East Asia" in this paper will consist of People's Republic of China, Japan, four Asian Newly Industrializing Economies (ANIEs) – Republic of Korea; Hong Kong SAR, China; Singapore; Taipei, China – and four economies of Association of Southeast Asian Nations (ASEAN-4) – Indonesia, Malaysia, Philippines, and Thailand.

² See World Bank, 1993.

\$1,392 billion to rest of the world, accounting for 25.6% of the total world export³. Compared to the 14.29% share of total world export in 1978, the relative importance of the East Asian region in the world economy has increased substantially. The growth of East Asian economy can be seen from another perspective. The growth of East Asian economies is accompanied by the similarly astonishing expansion of the region's intra-regional trade. Between 1988 and 1998, trade among East Asian economies grew from \$218 billion to \$580 billion, from nearly the one-third to the one-half of the region's total exports.

In 1997, a severe economic crisis erupted in much of East Asian economies. Countries such as Indonesia, Thailand, and Korea which suffered the most, have been working jointly with international financial community and organizations such as the International Monetary Fund (IMF) and the World Bank to coordinate policies to overcome the foreign exchange crisis and implement required reforms. These reform efforts cover wide range of areas including financial, corporate, labor, and the public sectors, aimed at restoring a stable foreign exchanges market and recovering economies' growth. In this regard, foreign trade is becoming a contentious issue, as it is both seen as a potential solution, at least partially, as well as a potential threat that can destabilize the world economy.

The short-term trade surpluses of economies whose currencies have gone through dramatic depreciation were seen as an unavoidable temporary phenomenon to set things back into equilibrium.⁴ However, the continuation of terms of trade advantage enjoyed by East Asian economies will possibly bring about rapid escalation of protective barriers from both within and outside the region.⁵ Malaysia took steps in October 1997 to raise import duties on construction machinery and materials, as well as durable consumer goods, in an effort to curb imports and improve the trade deficit. Thailand hiked import duties on intermediate goods to protect domestic manufacturers in certain industries, like iron and steel, to offset the effects of the crisis. And the Philippines has raised import tariffs 3% to 5% on, among other things, textiles.⁶ On the other side of the Pacific, protectionist sentiments run high in the U.S. as well, as its trade deficit has been increasing since the crisis, \$110 billion in 1997 and \$170 billion in 1998⁷. Naturally, criticism and pressure for Japan to liberalize its domestic market to absorb more imports from Asia's ailing economy are rising in Washington.

The purpose of this paper is to analyze whether the continued dependence on export-led strategy provides an adequate solution to overcome the current crisis in Asia. Through surveying the trade pattern of East Asian economies from various perspectives, basic structure of this region's trade is identified and possible causes behind the existing pattern are discussed. This paper takes the form of an interpretive survey with illustrative data and examples. By identifying questions within the analysis of trade patterns, it is intended to be a future research agenda, and it is offered in the hope that its shortcomings will provide better direction for further comprehensive examination of the issues raised. The next section of the paper places the East Asian economy in a historic perspective. The global

³ Figures for 1996.

⁴ See Corden, 1998.

⁵ This paper does not attempt to systematically analyze trade effects of these trade barriers.

⁶ See Sowinski, 1999.

⁷ Economic Report of the President, 1999.

changes in trade pattern taken place in the past two decades are observed. Section 3 looks at the relationship between East Asia and other regions in the world. Section 4 analyzes various trade patterns within the East Asian region, followed by Section 5, which looks into changes that occurred in the aftermath of the financial crisis in 1997. In section 6, several policy recommendations and issues in international economic cooperation are raised in addition to suggestions for future research.

2. OVERVIEW OF REGIONAL TRADE PATTERNS : 1978-1998

One of the outstanding features of East Asian trade pattern is the rapid growth of the region's economy, as measured in gross domestic product and the even faster growth of external trade (Table 1). Over the period from 1976 to 1996 the average annual GDP growth of East Asia was 6.75%. The rapid growth of GDP was mainly fueled by growth of external trade, both export and import. Covering the same period, average annual export and import growth recorded 13.56% and 13.87%, respectively. Table 1 clearly shows the high degree of trade dependency in East Asian economies. In 1996, total export of East Asia was \$1,392 billion, accounting for 25.6% of the world's total export. Figures for import is similarly impressive, as the region absorbed \$1,296 billion worth of goods, or 25.0% of the world's total import during the same year.

2.1. Measure of Trade Linkage

To measure the degree of trade linkage between economies, various methods have been applied leading to different, sometimes conflicting conclusions. In an excellent survey and application of these methods, Petri (1993) noted three ways of measuring regional trade relationships: through their absolute terms, relative terms, and the index called gravity coefficient. Each measure highlights a different aspect of trade relationship, yielding different insights and conclusions about the trade linkages. In the expressions that follow, let x_{ij} represent exports from country i to country j , and the subscript $*$ in place of i or j represent the summation across all i or j . Accordingly, x_{i*} represents the total exports of country i , x_{*j} the total imports of country j .

Table 1. Economic Performance of East Asia⁸

(Unit: %)

| | Avg annual GDP growth | | Avg annual Exp. growth | | Avg Annual Imp. Growth | | Ratio of Export to GDP | | | | | Ratio of Import to GDP | | | | |
|-------------|--------------------------|-------|---------------------------|-------|---------------------------|-------|------------------------|------|------|------|------|------------------------|------|------|------|------|
| | 76-86 | 86-96 | 76-86 | 86-96 | 76-86 | 86-96 | 1976 | 1983 | 1988 | 1993 | 1998 | 1976 | 1983 | 1988 | 1993 | 1998 |
| China | 7.70 | 9.99 | 16.12 | 17.19 | 20.48 | 12.47 | 0.05 | 0.05 | 0.07 | 0.12 | 0.15 | 0.05 | 0.05 | 0.07 | 0.14 | 0.17 |
| Japan | 4.05 | 3.08 | 12.09 | 6.90 | 6.99 | 10.59 | 0.14 | 0.15 | 0.11 | 0.10 | 0.10 | 0.13 | 0.14 | 0.07 | 0.09 | 0.09 |
| ANIEs | 7.81 | 7.60 | 14.65 | 14.71 | 13.09 | 15.96 | - | - | - | - | - | - | - | - | - | - |
| Korea | 7.82 | 8.26 | 16.23 | 14.09 | 13.67 | 16.89 | 0.32 | 0.37 | 0.38 | 0.28 | 0.32 | 0.33 | 0.42 | 0.32 | 0.31 | 0.36 |
| Hong Kong | 8.17 | 5.78 | 15.37 | 17.70 | 14.88 | 18.83 | 1.15 | 1.13 | 1.11 | 1.39 | 1.42 | 0.80 | 0.94 | 1.03 | 1.32 | 1.44 |
| Singapore | 6.84 | 9.07 | 13.08 | 18.68 | 10.89 | 17.81 | 0.97 | 1.29 | 1.26 | 1.40 | 1.34 | 1.44 | 1.67 | 1.61 | 1.71 | 1.46 |
| Taiwan* | 8.42 | 7.29 | 13.94 | 8.38 | 12.93 | 10.32 | 0.48 | 0.52 | 0.57 | 0.46 | 0.48 | 0.46 | 0.5 | 0.37 | 0.42 | 0.44 |
| ASEAN-4 | 5.02 | 7.12 | 8.41 | 16.93 | 7.65 | 19.99 | - | - | - | - | - | - | - | - | - | - |
| Indonesia | 6.21 | 6.88 | 5.65 | 12.90 | 6.57 | 14.88 | 0.22 | 0.28 | 0.19 | 0.27 | 0.26 | 0.21 | 0.24 | 0.2 | 0.27 | 0.26 |
| Malaysia | 5.77 | 8.50 | 10.01 | 19.00 | 10.95 | 21.90 | 0.52 | 0.52 | 0.56 | 0.79 | 0.92 | 0.42 | 0.59 | 0.5 | 0.83 | 0.91 |
| Philippines | 1.81 | 3.68 | 6.44 | 15.65 | 3.19 | 20.26 | 0.17 | 0.24 | 0.26 | 0.30 | 0.41 | 0.24 | 0.27 | 0.22 | 0.33 | 0.49 |
| Thailand | 6.30 | 9.43 | 11.53 | 20.17 | 9.89 | 22.94 | 0.20 | 0.24 | 0.26 | 0.36 | 0.39 | 0.23 | 0.3 | 0.24 | 0.43 | 0.44 |

Source: *International Financial Statistics*, IMF. * *National Statistics*, Taipei, PRC.

x_{**} represents the total world trade. The absolute measure of trade linkage measures the share of bilateral trade flow in the world trade. It measures the absolute scale of the particular bilateral trade relationship in the context of the world trade:

$$a_{ij} = x_{ij} / x_{**}$$

The relative measure of trade linkage expresses the bilateral trade flow as a share of a trade partner's total trade. It measures the relative importance of the particular trade linkage to one or the other of the two partners participating in the trade:

$$r_{ij} = x_{ij} / x_{i*} \text{ OR } x_{ij} / x_{*j}$$

Finally, the gravity coefficient, or the double-relative measure of trade linkage compares the share of the region in its own market to its share in worldwide by deflating a_{ij} by both worldwide export share of the exporting country and the worldwide import share of the importing country:

$$g_{ij} = (x_{ij} / x_{**}) / \{(x_{i*} / x_{**}) (x_{*j} / x_{**})\} \text{ OR } (x_{ij} / x_{i*}) / (x_{*j} / x_{**})$$

In this paper, all three measures are applied to analyze trade relationships at different layers of economic groupings.

Interregional Trade Pattern

The composition of trade partners of East Asian economies indicates that aside from

⁸ Figures for 1998 are IMF estimates.

Table 2. Relative Measure of Regional Interdependence

| | | 1978 | 1983 | 1988 | 1993 | 1996 | 1997 | 1998 |
|-------------------------------------|----------------|------|------|------|------|------|------|------|
| Interregional Calculations: | | | | | | | | |
| East Asia | North America | 0.27 | 0.25 | 0.31 | 0.26 | 0.23 | 0.23 | 0.26 |
| | Western Europe | 0.15 | 0.13 | 0.17 | 0.15 | 0.14 | 0.14 | 0.16 |
| North America | East Asia | 0.15 | 0.19 | 0.22 | 0.21 | 0.22 | 0.20 | 0.17 |
| | Western Europe | 0.21 | 0.20 | 0.20 | 0.17 | 0.15 | 0.15 | 0.16 |
| Western Europe | East Asia | 0.03 | 0.04 | 0.05 | 0.07 | 0.08 | 0.08 | 0.06 |
| | North America | 0.07 | 0.09 | 0.09 | 0.09 | 0.08 | 0.09 | 0.10 |
| Intra-regional Calculations: | | | | | | | | |
| East Asia | | 0.31 | 0.34 | 0.36 | 0.43 | 0.49 | 0.48 | 0.43 |
| North America | | 0.36 | 0.38 | 0.41 | 0.46 | 0.48 | 0.49 | 0.51 |
| Western Europe | | 0.57 | 0.57 | 0.62 | 0.60 | 0.59 | 0.54 | 0.55 |

Note: Author's calculations from *Direction of Trade Statistics*, IMF.

Table 3. Regional Gravity Coefficients

| | | 1978 | 1983 | 1988 | 1993 | 1996 | 1997 | 1998 |
|-------------------------------------|----------------|-------|-------|-------|-------|-------|-------|-------|
| Interregional Calculations: | | | | | | | | |
| East Asia | North America | 1.409 | 1.284 | 1.454 | 1.190 | 1.088 | 1.029 | 1.080 |
| | Western Europe | 0.351 | 0.342 | 0.399 | 0.408 | 0.380 | 0.391 | 0.415 |
| North America | East Asia | 1.139 | 1.120 | 1.179 | 0.896 | 0.874 | 0.833 | 0.800 |
| | Western Europe | 0.502 | 0.522 | 0.474 | 0.456 | 0.414 | 0.419 | 0.426 |
| Western Europe | East Asia | 0.609 | 0.702 | 0.725 | 0.562 | 0.548 | 0.517 | 0.451 |
| | North America | 1.059 | 1.065 | 1.184 | 0.935 | 0.824 | 0.705 | 0.736 |
| Intra-regional Calculations: | | | | | | | | |
| East Asia | | 2.376 | 2.042 | 1.987 | 1.846 | 1.971 | 1.970 | 1.990 |
| North America | | 1.898 | 1.942 | 1.888 | 2.069 | 2.264 | 2.158 | 2.129 |
| Western Europe | | 1.344 | 1.460 | 1.469 | 1.585 | 1.588 | 1.458 | 1.415 |

Note: Author's calculations from *Direction of Trade Statistics*, IMF.

Intra-regional trade, trade with North America –consisting of Canada, Mexico and the United States –provided the largest extraregional market for East Asian goods. The relative measure of trade linkage between East Asia and North America reached over 30% at the end of 1980s and then slowly declined. But it still remains as a substantial trade partner, accounting for 23% of the region's total export in 1996. From the North American perspective, East Asia is an increasingly significant market for North American exports despite the ongoing trade imbalance. Since the 1980s, around 20% of total North American exports have been absorbed by East Asia.

2.2. Intra-regional Trade Pattern

For East Asia, intra-regional trade is an important element in the total composition of trade. Petri (1993) concludes that intra-regional trade has always been a substantial part of

the region's trade composition. In fact, he estimates that in 1938, 67% of East Asia's trade was intra-regional. Although this figure has been brought down over time, the share of intra-regional trade remains well over 40% today. (Table 2) Some scholars even attribute intra-regional trade as a source of steady East Asian growth throughout the 1990s despite a worldwide recession during the period between 1990 and 1992.⁹

The growth of East Asian intra-regional trade, the relative measure of which grew from 31% to 49% can be placed under a different context. Coupled with the near two-fold growth of the absolute share of world trade, it may be inferred that East Asia's rapid growth led to enough diversification of its industrial structure to create a complementary trade structure. Intra-regional exports of North America grew from 36% to 48% as well, particularly between 1988 and 1993. This spurt of increased relative measure coincides with the launch of free trade area between Canada and the U.S. and the conclusion of the North American Free Trade Agreement (NAFTA) in 1994. Finally, intra-regional trade among member countries of European Union has been historically high, accounting for more than half of their total international trade. During the two decades observed, the relative measure remained stable at around 60%.

Gravity coefficients, an index which measure the extent of trade growth beyond that is associated with a region's output growth, lead to yet another interpretation. Gravity coefficient of North America shows the steadily integrating economic bloc in formation. The same can be said for Western European economies of EU. However, for East Asia, this index echoes the earlier findings (Petri 1993) that this region actually had been more highly integrated than North America or the EU, and the recent trend has been one of decline. This phenomenon can be explained by the relatively faster increase of total imports of East Asia in the world trade compared to the intra-regional export. Since the mid-1990s however, the index for East Asia began to increase again.

3. INTERREGIONAL TRADE PATTERNS OF EAST ASIAN ECONOMIES

The most widely accepted explanation of trade pattern posits that trade is determined by factor endowments. Even the simplest form of this theory is said to explain a high proportion of world's trade flows. The trade pattern of East Asia reflects the vast diversity that the region encompasses. Thus, the factor endowment argument is made stronger in the case of East Asia. When taking per capita income as a rough indicator of a nation's resources, the large variance among economies of East Asia is easily seen. (Table 1) With Japan leading the region as the most developed economy, the newly industrializing economies of Asia (ANIEs) of Korea, Hong Kong, Singapore, and Taiwan, have entered the upper-middle tier of income distribution, and the resource rich economies of the Association of South East Asian Nations (ASEAN-4), along with China have entered the race of rapid industrialization.

Taking this diversity into account, trade patterns of economies of East Asia are analyzed in order to better explain the regional pattern as described in the previous section. Individual economies are sometimes grouped together according to their income level. Export markets of individual East Asian economies also vary. In the case of China, exports to almost all regional partners grew in absolute terms. East Asia has always been the major

⁹ See Barfield. (1997)

market for Chinese exports, accounting for over half of its total export. In 1996, China exported \$103 billion to East Asia, 54.88% of its total export. However, since the 1970s, North America is the fastest growing trade partner of China. For example, Chinese exports to the U.S. in 1976 was mere \$270 million. By 1996, the amount grew by nearly ten times to \$26.7 billion. North America, as a group, accounted for only 3.75% of China's export in 1978. By 1996, 18.75% of all Chinese exports went to North America, becoming the second largest regional market, ahead of the EU. Considering China's export through Hong Kong, these figures probably underestimate China's real expansion.¹⁰

In the case of Japan, the absolute share of world export peaked in 1993 and decreased since then. The decline is most visible from North America and EU markets since the late 1980s. The relative share of Japan's export markets in 1996 were composed of East Asia, North America, and EU, reflecting the substantial restructuring toward East Asia since the 1980s. (Table 4)

Similar to the export pattern of Japan, exports of ANIEs are heavily oriented to East Asia. Taking Korea as an example, in 1996, of the total \$130 billion export, \$61 billion was from exports to East Asian neighbors. In absolute terms, exports from ANIEs to the rest of East Asia grew from 1.09% of world total in 1978 to 5.29% in 1996. In contrast, exports destined to

Table 4. East Asia's Relative Trade Interdependence

| | | (Unit: %) | | | | | | |
|---------|----------------|-----------|-------|-------|-------|-------|-------|-------|
| | | 1978 | 1983 | 1988 | 1993 | 1996 | 1997 | 1998 |
| China | East Asia | 49.46 | 51.53 | 61.06 | 51.09 | 54.88 | 54.16 | 47.54 |
| | North America | 3.75 | 8.86 | 7.95 | 19.82 | 18.75 | 18.94 | 24.00 |
| | Western Europe | 12.74 | 10.38 | 10.44 | 13.37 | 13.14 | 13.05 | 15.03 |
| Japan | East Asia | 25.00 | 23.21 | 27.30 | 36.16 | 42.41 | 40.59 | 33.74 |
| | North America | 27.71 | 28.46 | 36.49 | 31.23 | 28.76 | 29.57 | 32.04 |
| | Western Europe | 13.87 | 14.15 | 19.68 | 16.61 | 15.35 | 15.62 | 18.39 |
| ANIEs | East Asia | 29.65 | 32.22 | 37.70 | 45.67 | 50.22 | 49.53 | 45.28 |
| | North America | 32.54 | 29.52 | 33.50 | 24.90 | 20.94 | 21.36 | 23.05 |
| | Western Europe | 16.81 | 13.70 | 15.35 | 14.49 | 13.22 | 13.54 | 14.68 |
| ASEAN-4 | East Asia | 49.72 | 59.69 | 51.67 | 50.35 | 53.02 | 51.32 | 46.56 |
| | North America | 22.91 | 16.37 | 20.76 | 21.62 | 19.45 | 20.60 | 23.51 |
| | Western Europe | 15.57 | 11.35 | 15.88 | 15.87 | 14.99 | 15.15 | 15.98 |

Note: Author's calculations from *Direction of Trade Statistics*, IMF.

North America and EU, again as a share of worldwide export, have been declining since 1988. The rapid expansion of ASEAN-4 economies' export over the past two decades is confirmed by the increasing share of ASEAN-4 exports to virtually all regional markets.

¹⁰ Hong Kong's entrepot trade with China has been identified as a key factor in the divergent analysis of trade statistics. The U.S. Department of Commerce now records reexport of goods of Chinese origin from Hong Kong SAR as U.S. imports from China, for example. The accuracy of export accounting by their final destination is, therefore, not completely accurate. In this paper, Hong Kong's trade relations with China are treated separately from the other ANIEs trading nations.

Similar to China, East Asia has always been an important market for ASEAN-4 exports, and the growth of exports to East Asia has increased most rapidly, along with exports to North America and EU. In 1996, East Asia accounted for 53.02% of total ASEAN-4 export, followed by North America and EU.

The high portion of intra-regional trade among East Asian economies is thus confirmed by country-level observation. Among them, China, with 55% of its total export destined for East Asia, is the most heavily dependent country.¹¹ ASEAN-4 economies exported 53.02%, ANIEs exported 50.22%, and Japan exported 42.41% to East Asia in 1996. Outside the East Asian region, North America accounted for 28.76% of Japan's total export, 20.94% of ANIEs' total export, 19.45% of ASEAN-4 economies' export, and 18.75% of China's total export, indicating a sharp structural division among economies of different endowment condition.

Table 5. Gravity Coefficients of East Asian Economies

| | | 1978 | 1983 | 1988 | 1993 | 1996 | 1997 | 1998 |
|---------|----------------|------|------|------|------|------|------|------|
| China | East Asia | 3.77 | 3.12 | 3.33 | 2.18 | 2.22 | 2.24 | 2.22 |
| | North America | 0.20 | 0.45 | 0.37 | 0.89 | 0.89 | 0.83 | 1.00 |
| | Western Europe | 0.30 | 0.27 | 0.25 | 0.36 | 0.35 | 0.35 | 0.39 |
| Japan | East Asia | 1.91 | 1.40 | 1.49 | 1.54 | 1.71 | 1.68 | 1.58 |
| | North America | 1.45 | 1.44 | 1.69 | 1.41 | 1.37 | 1.30 | 1.34 |
| | Western Europe | 0.33 | 0.36 | 0.46 | 0.44 | 0.41 | 0.42 | 0.48 |
| ANIEs | East Asia | 2.26 | 1.95 | 2.06 | 1.95 | 2.03 | 2.04 | 2.12 |
| | North America | 1.70 | 1.49 | 1.55 | 1.12 | 1.00 | 0.94 | 0.96 |
| | Western Europe | 0.40 | 0.35 | 0.36 | 0.38 | 0.35 | 0.37 | 0.38 |
| ASEAN-4 | East Asia | 3.79 | 3.61 | 2.82 | 2.15 | 2.14 | 2.12 | 2.18 |
| | North America | 1.20 | 0.83 | 0.96 | 0.98 | 0.92 | 0.91 | 0.98 |
| | Western Europe | 0.37 | 0.29 | 0.37 | 0.42 | 0.40 | 0.41 | 0.41 |

Note: Author's calculations from *Direction of Trade Statistics*, IMF.

The measure of export bias as expressed in terms of gravity coefficient shows that China's export bias to East Asia has been steadily declining since the 1970s but remains relatively high today. The rapid increase of China's exports destined for North American market have had the effect of "leveling the field" slightly, but the index indicates that China's export to North America is less than the world average, leaving room for further growth in the future. (Table 5)

Japan's exports are moderately biased in favor of East Asia and North America. However, recent trends indicate that while Japan's bias toward East Asia increasing and its link to North America is weakening. Similarly, ANIEs' export bias show strengthening ties to East Asia since 1983. ANIEs linkage to North America has also been on a rapidly declining trend. ASEAN-4 economies' inclination for East Asia for their exports was very high in 1978. Indonesia shows index of 4.32, when the regional average was 2.37. However, among ASEAN-4 economies, slowly weakening links to rest of East Asia are not

¹¹ By country, Indonesia exported 57.43% and Malaysia exported 56.22% of their total exports to East Asia in 1996 which are the highest.

necessarily being replaced by the closer ties to the North American market.

4. INTRA-REGIONAL TRADE PATTERNS OF EAST ASIAN ECONOMIES¹²

China's export to neighboring East Asian economies grew at a slightly faster rate than its export to rest of the world. Between 1978 and 1996, China's export to Japan increased from \$1.7 billion to \$30.8 billion, growing, on the average, 17.41% per annum. Export to ANIEs increased from \$2.8 billion to \$47 billion, at a growth rate of 17.01% per annum. Export to ASEAN-4 economies increased from \$320 million to \$5 billion, at growth rate of 16.59% per annum. By their relative share of China's total export, ANIEs accounted for 31%, Japan for 20%, and ASEAN-4 for slightly more than 3%. Although ANIEs' export share in China includes China's export to Hong Kong, of which a considerable share is destined for elsewhere, exports to Korea, Singapore, and Taiwan are all growing rapidly since 1980s.

Table 6. Intra-regional Relative Trade Interdependence of East Asian Economies

| | | (Unit: %) | | | | | | |
|---------|---------|-----------|-------|-------|-------|-------|-------|-------|
| | | 1978 | 1983 | 1988 | 1993 | 1996 | 1997 | 1998 |
| China | Japan | 17.64 | 21.98 | 16.88 | 17.21 | 20.43 | 17.40 | 14.11 |
| | ANIEs | 28.53 | 26.66 | 41.40 | 31.23 | 31.08 | 33.16 | 30.66 |
| | ASEAN-4 | 3.29 | 2.89 | 2.78 | 2.65 | 3.36 | 3.61 | 2.77 |
| Japan | China | 3.13 | 2.53 | 3.58 | 4.79 | 5.31 | 5.15 | 5.26 |
| | ANIEs | 15.39 | 13.13 | 18.80 | 22.30 | 24.68 | 24.03 | 20.22 |
| | ASEAN-4 | 6.49 | 7.55 | 4.91 | 9.07 | 12.42 | 11.41 | 8.27 |
| ANIEs | China | 0.26 | 2.55 | 8.15 | 13.51 | 14.03 | 14.69 | 15.02 |
| | Japan | 12.95 | 10.49 | 12.46 | 8.79 | 9.37 | 8.19 | 6.92 |
| | ANIEs | 8.40 | 9.40 | 10.77 | 14.74 | 15.89 | 16.12 | 13.41 |
| | ASEAN-4 | 8.04 | 9.78 | 6.33 | 8.63 | 10.93 | 10.53 | 9.93 |
| ASEAN-4 | China | 0.88 | 1.16 | 2.28 | 2.30 | 3.00 | 2.86 | 3.12 |
| | Japan | 29.47 | 338 | 24.64 | 19.18 | 17.82 | 16.37 | 13.15 |
| | ANIEs | 16.16 | 20 | 21.09 | 24.42 | 25.86 | 25.51 | 23.79 |
| | ASEAN-4 | 3.21 | 3.90 | 3.65 | 4.44 | 6.33 | 6.58 | 6.50 |

Note: Author's calculations from *Direction of Trade Statistics*, IMF.

Japan's export linkage with East Asian economies show quite a contrasting pattern compared to that of China's. The fastest growing area for Japan's exports is ASEAN -4 economies, export to which grew from \$6.3 billion to \$51 billion between 1978 and 1996, at the rate of 12.25% per annum. Next is ANIEs, which by absolute volume absorbs the most of Japan's exports in the region. In 1978, Japan's export to ANIEs amounted to \$15.1 billion, which increased to \$101.5 billion in 1996. Japan's export to China also increased

¹² The figures and analyses in this section, particularly for individual ANIEs countries are based on *Direction of Trade Statistics* of IMF.

significantly, from \$3 billion to \$21.8 billion. In 1996, the largest share of Japan's export is destined for ANIEs, which accounted for 24.7% of total export from Japan. ASEAN-4 economies accounted for 12.4% and China took 5.3%.

Second only to the U.S., Japan remains the largest trading partner of Korea. In 1996, Korea exported \$16 billion worth of goods and services to Japan, 12.26% of its total export. This figure, however, is substantially lower than over 20% that Japan accounted for, back in 1978. Nonetheless, Japan still remains the single most significant trading partner of Korea in the region. While Japan's share of Korea's export is steadily decreasing, exports to other ANIEs are increasing. Korea's export to Taiwan, for example, increased from \$12 million in 1978 to over \$4 billion in 1996. ANIEs, as a group, accounted for 16.6% of Korea's total export in 1996, replacing Japan as the primary export market for Korean goods in East Asia.

Taiwan's export linkage with Japan has been stable over the past two decades. From \$1.5 billion in 1978 to \$13.7 billion in 1996, Taiwan exported roughly constant share to Japan. Similar to Korea, Japan is a significant trading partner of Taiwan in the region. However, largest single exporting partner of Taiwan is Hong Kong, accounting for 23.12% of Taiwan's total export in 1996. Most of this export is probably destined for China for final consumption.

Rapid export expansion of ASEAN-4 economies increased their exports to rest of the East Asia in absolute terms. As a share of world's total export, ASEAN-4's exports to Japan increased from 0.62% to 0.69%, exports to China increased from 0.02% to 0.12%, exports to ANIEs increased from 0.34% to 1.01%, and exports among themselves increased from 0.07% to 0.25%. With exception of Japan, exports have been growing rapidly over the past two decades. Between 1978 to 1996, ASEAN-4 exports to China recorded a near 20% average annual growth, exports to ANIEs grew at a 15%, and to ASEAN-4 at a 16%. ASEAN-4 exports to Japan grew only at near 9% mark. During that time, ANIEs, combined grew to be the larger export market than Japan. In 1978, ASEAN-4 exports to Japan stood at \$7.8 billion and to ANIEs, \$4.2 billion. However, in 1996, ASEAN-4 exports to ANIEs recorded \$52.8 billion and to Japan, \$36.4 billion. In relative terms, these figures accentuate this striking feature. Japan's share in ASEAN-4 exports declined from 29.47% in 1978 to 17.82% in 1996. ANIEs' share of ASEAN-4 exports shows a reversed trend, increasing from 16.16% in 1978 to 25.86% in 1996.

The index of gravity coefficient indicates that despite China's continuing use of Hong Kong as the trade port to the world, the intensity of China-Hong Kong export link is quickly diluted as China itself is opening up to the world. However, more and more of Hong Kong's exports are gravitating towards China, as it is becoming infused with the mainland economy. Following Hong Kong, China maintains an increasingly strong export ties with Japan and Korea. On the whole, however, China's export bias with similarly industrializing ASEAN-4 economies and other East Asian economies are on a weakening path. (Table 7)

Japan shows high degree of export bias to all East Asian economies. Gravity coefficients indicate that Japanese exports to East Asian economies are, on the average, two to sometimes three times intense as that of the world's average. Particularly strong preferences are observed in ASEAN-4 markets, where the intensity is nearly three-fold. In addition, Japan continues to maintain strong ties to Korea and Taiwan albeit at a slightly reduced level since the 1970s.

ANIEs' exports are also skewed to the direction of East Asia, as was seen in the previous section. Although the intensity is not as high as that of Japan, the basic structure

seems to be emulating Japan's path. Korea's high export linkage to Japan has been decreasing steadily. Noting a few special relationships in the region; between China and the two Chinese economies of Hong Kong and Taiwan, between and Taiwan and Hong Kong, and between Malaysia and Singapore, the overall picture of ANIEs' export structure seem to be focused on China and ASEAN-4 economies. Korea's export link to China, for example, has increased to greater than 3 within relatively short period of time. An interesting observation is made regarding Korea. Although there are no strikingly close ties among ANIEs, export linkages to Korea are far below average for all three potential ANIEs exporters –Hong Kong (0.59), Singapore (1.36), and Taiwan (0.83).

ASEAN-4 economies' export linkages in East Asia are generally below the regional gravity coefficient of 1.97 in 1996. ASEAN-4's exports to Japan is still biased, although the intensity is weakening. Singapore, a member of ASEAN-4, but grouped as ANIEs for the purpose of this paper, retains highly biased linkages with its ASEAN-4 neighbors. Again, what is interesting to note here is the lack of intensity. ASEAN-4 economies' export linkage to China is quite low (1.13), even lower than the linkage between North America and China (1.53).

Table 7. Intra-regional Gravity Coefficients of East Asian Economies

| | | 1978 | 1983 | 1988 | 1993 | 1996 | 1997 | 1998 |
|---------|---------|------|------|------|------|------|------|------|
| China | Japan | 2.80 | 2.94 | 2.51 | 2.64 | 3.06 | 2.79 | 2.66 |
| | ANIEs | 6.90 | 4.96 | 5.51 | 3.01 | 2.80 | 3.00 | 3.24 |
| | ASEAN-4 | 1.81 | 1.10 | 1.31 | 0.73 | 0.78 | 0.84 | 0.76 |
| Japan | China | 3.64 | 2.36 | 1.80 | 1.71 | 2.00 | 1.97 | 1.78 |
| | ANIEs | 3.72 | 2.44 | 2.50 | 2.15 | 2.22 | 2.18 | 2.14 |
| | ASEAN-4 | 3.57 | 2.89 | 2.32 | 2.50 | 2.88 | 2.64 | 2.26 |
| ANIEs | China | 0.30 | 2.37 | 4.10 | 4.83 | 5.30 | 5.61 | 5.09 |
| | Japan | 2.06 | 1.40 | 1.85 | 1.35 | 1.41 | 1.31 | 1.30 |
| | ANIEs | 2.03 | 1.75 | 1.43 | 1.42 | 1.43 | 1.46 | 1.42 |
| ASEAN-4 | ASEAN-4 | 4.42 | 3.74 | 2.99 | 2.32 | 2.53 | 2.44 | 2.71 |
| | China | 1.03 | 1.08 | 1.15 | 0.82 | 1.13 | 1.09 | 1.06 |
| | Japan | 4.68 | 4.55 | 3.66 | 2.94 | 2.67 | 2.62 | 2.48 |
| | ANIEs | 3.91 | 3.84 | 2.81 | 2.35 | 2.33 | 2.31 | 2.52 |
| | ASEAN-4 | 1.76 | 1.49 | 1.72 | 1.19 | 1.47 | 1.52 | 1.77 |

Note: Author's calculations from *Direction of Trade Statistics*, IMF.

5. EFFECTS OF THE ASIAN CRISIS ON EAST ASIAN TRADE PATTERN

The financial crisis in Asia began in mid-1997 as the capital and foreign exchange markets of Southeast Asian economies crumbled. The loss of confidence among investors spread the crisis to neighboring economies such as Korea, which stood vulnerable to the external shock due to its weak foreign debt structure. Towards the end of 1997, a series of currency depreciation took place among countries hit by the crisis –namely, Thailand, Indonesia, Malaysia, Philippines, and Korea. Combination of depreciated currencies and crippled domestic production in East Asian economies not only affected the trade patterns within the region, but around the world as well.

The world trade contracted only for the second time in this decade. In 1998, world's total export diminished from \$5.43 trillion to \$5.35 trillion, recording a -1.48% growth. World import diminished as well, from \$5.36 trillion to \$5.31 trillion, a -1.11% growth. East Asia was the hardest hit, with the region's total export to the world reduced from \$1.39 trillion to \$1.36 trillion. However, exports of EU and North America were reduced as well, by \$16.47 billion and \$12.56 billion, respectively. The contraction of world trade, nonetheless, retained much of its overall structure. Between 1997 and 1998, East Asia's economic turmoil began to be reflected in its share of world trade, as the region's share of world's total export decreasing by more than one percentage point. At the same time, East Asia's import share fell from 24.50% to 21.55%.

A large share of East Asia's export reduction is stemming from its own depressed markets. A mirror image phenomenon of the early 1990s is unfolding in Asia as the region's heavy dependence on intra-regional trade is working to spread the contagion. Exports from other regions to East Asia have gone down dramatically. North America's export to East Asia decreased by \$33.2 billion and EU's export to East Asia decreased by \$20.5 billion. However, the greatest reduction was the intra-regional trade among East Asian economies, which decreased by \$84.2 billion.

All three regions have increased exports to other parts of the world. East Asian economies' exports are surging into North American and EU markets. North American and EU's share of East Asian export increased to 26% and 16%, respectively. Of the East Asian economies, exports to China stand out as the sole economy absorbing an increased amount of exports from abroad after the crisis. At the same time, East Asia's share in all three regions diminished, accounting for 17% of North American export and 6% of EU's export.

East Asia's preference for East Asian goods seems unaffected by the crisis, however. The gravity coefficient of East Asia remains relatively constant from 1996 to 1998, ending with even a small increase in 1998. (Tables 2, 3) This is an indication that degree of reduction in intra-regional export in East Asia is, relatively speaking, at the same magnitude of reduction occurred by East Asia's other trading partners in the world. The ratio of East Asia's intra-regional trade to East Asia's import share of world's total import remains essentially the same before and after the crisis.

Despite East Asia's reduction of trade at the regional level, China's export continues to grow, albeit at a slower rate. China's export to rest of the East Asia is lagging, but it is more than made up by the increases taking place in other markets of the world. Alternatively, China is also absorbing a significant share of East Asia's exports. With exception of Japan, all other economies of East Asia increased exports to China between 1997 and 1998. Japan's export and import are down across the board, not absorbing a significant amount of East Asia's exports.

6. POLICY IMPLICATIONS

East Asia's past economic performance depended heavily on the external sector as trade became the main source of growth. Over the past two decades, East Asia also achieved high level of interregional trade network, depending on each other for production inputs and final consumption markets. The increasing measure of relative interdependence can be said to express this region's increasing specialization as each group of economies move up the technology ladder to produce higher value-added goods and transfer old technologies to its resource-rich neighbor. However, a different conclusion is made with the gravity

coefficients, which isolates the increasing output of rapidly growing economies of East Asian region. By this measure, East Asia's preference for the region's exported goods declined until the 1990s and then reversed the trend into a steady increase, which continues through the Asian crisis in 1997.

East Asia's high level of intra-regional trade is a double-edged sword. In the earlier part of this decade, this intra-regional trade became the source of growth for East Asian economies despite the worldwide recession. However, in 1997, with the curse of Asian financial crisis looming over much of region's economies, the high concentration of trade in this region is, at worst, spreading the recessionary forces to parts of region left relatively unaffected, and at best, slowing down the region's recovery. Trade data of the one year following the crisis suggests that Japan, by far the region's largest economy and trading nation, is struggling from its long-running recession, unable to provide the needed stimulus through trade. Instead, East Asia's export loss went to markets of North America and EU.

Two policy implications arise from this observation. First, the need for region-wide policy coordination is identified. East Asian governments' fiscal stimulus measures to spark the domestic demand should be coordinated region wide so that intra-regional trade among economies may increase. Policy coordination should focus on economies of ANIEs and ASEAN-4. Trade intensities among economies belonging to these two sub-regions grew in a reaction to the crisis. Along with continuously expanding China, regional recovery will better proceed with increased intra-regional trade among them. To an extent, international bodies such as the IMF and the World Bank are responsible for this line of coordination. Second, the role of China in maintaining stability of the region is highlighted. China is the only East Asian economy that sustained trade growth through the crisis. China's role as the market for East Asian goods is as important as ever, and as such, the stable Renmenbi must be maintained in order to hold the existing trade structure together. At this delicate moment, any instability of Renmenbi will have distortionary consequences beyond just China's trade, but in East Asia's regional trade as well, particularly with ANIEs and ASEAN-4 economies with relatively close ties to China.

In addition, there seem to be a trend toward increasing regional concentration in all major trading blocs into the late 1990s. Increasing gravity coefficients of the three large regions observed suggest that within each region, preference for the region's products in place of imports from outside is increasing. First, without delving into the discussion of pros and cons of regionalism and the divergent effect on trade efficiency, a possible trade conflict should be mentioned. Too much gravity may result in interregional trade conflict placing a strain on the spirit of multilateral trading system embodied in the World Trading Organization (WTO) regime. Therefore, in the new round of trade negotiations, WTO should review the consequences of the recent trend of increasing regional concentration. Second, international investment can play an important role in enhancing trade between economies and regions. The economies of ASEAN-4 achieved a remarkable growth following this strategy and were able to increase their trade. Foreign direct investment that highlights an economy's comparative advantage induces more intraindustry trade and specialization. FDI and trade are not substitutes, but increasingly becoming more complementary. In this regard, East Asian economies, particularly those hit by the current crisis should promote inflow of FDI by establishing more transparent and liberal investment regimes.¹³

¹³ This issue of FDI and trade will be further examined in this ongoing research.

So long as the demand from East Asian economies are down, East Asian exports will surge into North American and EU markets in addition to decreased exports from North America and EU to East Asia. However, it is unrealistic to expect this trend to continue long into the future without the reactionary protests from North American and European exporters. Countries on both sides of this issue should monitor industries' sentiment closely, in order to avoid unnecessary and harmful trade conflicts. Short-term trade imbalance vis-a-vis East Asia is to be expected, and efforts should be made to mitigate the negative effect on domestic industries of North America and Europe. Furthermore, the market share gains of East Asian exports in these markets results from the price competitiveness through depreciated currencies. This is probably a temporary phenomenon. East Asian exporters should build a stronger foundation through advanced technology and upgrading quality of goods so that a more stable trade pattern may result.

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