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Abstract: This paper updates our earlier work (Ahearne, Fernald, Loungani and Schindler, 2003) on whether China, with its huge pool of labor and an allegedly undervalued exchange rate, is hurting the export performance of other emerging market economies in Asia. We continue to find that while exchange rates matter for export performance, the income growth of trading partners matters far more. This suggests the potential for exports of all Asian economies to grow in harmony as long as global growth is strong. We also examine changes in export shares of Asian economies to the U.S. market and find evidence that dramatic changes in shares are taking place. Many of these changes are consistent with a 'flying geese' pattern in which China moves into the product space vacated by the Asian NIEs or with greater integration of trade across Asia in the production of final goods. Nevertheless, China's dramatic gains in recent years do increase the pressure on Asian economies, particularly in ASEAN and South Asia, to seek areas of comparative advantage.

Keywords: exports, trade links, exchange rates, trade equations.

JEL Codes: F10, F31, O53

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1. Introduction

Discussions of trade linkages among the emerging markets of Asia often include polar views. Under one view, China and other Asian economies can grow in harmony, as exemplified in the 'flying geese' paradigm [Akamatsu (1961, 1962)].[1] Okita (1985) noted that the great diversity among the Asian nations in their stages of development and resource endowments "works to facilitate the flying geese pattern of shared development as each is able to take advantage of its distinctiveness to develop with a supportive division of labor." Some recent analyses [e.g. Kwan (2002)] also take the view that economies in Asia share mutual benefits from the potential of greater integration of product lines across the region and the increased incomes of Chinese consumers, both of which are reflected in expanding intra-regional trade in Asia [see also Zebregs (2004)].

The other view sees China and other Asian economies largely as competitors: They specialize in the production of export goods that are relatively close substitutes and compete for market share in major export markets. A 2001 *White Paper on International Trade* by Japan's Ministry of Economy, Trade and Industry captures this view well. It suggests that:

> "… owing to the emergence of China in East Asia, there has been some disruption in the conventional orderly catch-up process of the flying-geese pattern led by Japan, followed by the NIEs, ASEAN members, and China. It argues that, through receiving direct foreign investment, China has been gaining competitiveness not only in labor-intensive products, but also IT and other technology-intensive products. As a result, the complementary international division of labor according to the level of economic development has given way to stiffer competition, including in high-tech industries. In the long-term, such increased competition could bring overall benefits to the regional economy by improving productivity. In the short-term, however, increasing competition between China and ASEAN members could have negative repercussions on the latter, as illustrated by the 1997-98 Asian financial crisis." [quoted in Kwan (2002)]

In one provocative but popular rendition of this view, Asian economies are 'sitting ducks' being picked off by a China armed with a huge pool of cheap labor and an allegedly undervalued

[1] See also Diwan and Hoekman (1999), Kojima (2000) and Loungani (2000).

exchange rate (Bhalla (1998)). Calls for an appreciation of the renminbi are a staple in policy circles (see Bergsten (2006) for a recent example).

The evidence in this paper suggests that the polar views do not do justice to the rapidly evolving trade relationships among Asian economies.[2] In Section 2, we present evidence that at the aggregate level, Chinese export growth and that of other Asian economies move in tandem, suggesting that both depend on common shocks. We verify this evidence on the relative importance of foreign income and exchange rates in the determination of Asian export growth using a three-variable VAR model. An important finding is that, while exchange rates do matter for export performance, the income growth of trading partners matters even more. In this sense, China and emerging Asia are on the same side, with the export performance of both still heavily dependent on income growth in common major trading partners, viz., the United States, the European Union and Japan.

Turning from the aggregate to sectoral data, we find, nevertheless, that there is clearly considerable shifting of trade patterns taking place. In Section 3, we present evidence from industry-level data on the extent of export competition between China and other Asian economies in the U.S. market, where competition is likely to have been most intense. We find that China has gained market share in the U.S. market as a whole and in almost every industry, while the share of other Asian economies has declined. However, many other Asian economies, particularly the ASEAN-4 economies, have also experienced gains in market shares in a number of industries at the expense of the Asian NIEs. In many industries, therefore, the results are suggestive of a 'flying geese' pattern in which China and the ASEAN-4 move into the product space vacated by the NIEs. In addition, as China continues its rapid development, other economies in the region have an incentive to try to move up the value chain as their comparative

[2] This paper updates our previous work by extending the data to 2005 and—in section 3 of the paper—including three economies in South Asia (Bangladesh, India and Pakistan) among the group of emerging Asian economies.

advantage shifts to higher-value added, less labor intensive industries. We also summarize the evidence on the beneficial effects of China's growth on the rest of Asia through the channel of rising Chinese imports from the rest of Asia.

That said, the other view is also right in claiming that China's increased integration into the global economy has meant that sectoral transitions in other Asian economies are likely occurring at a faster pace than would otherwise have been the case. Asian economies therefore need to take steps to ease the transition of their labor force into other sectors, including through the provision of social safety nets to lower the costs of adjustment.

2. Aggregate Evidence on Trade Linkages between China and other Asian Economies

Figure 1 shows the striking comovement between China's export growth and that of other Asian economies. The figure shows export growth (measured in dollar values) to the world from China (including Hong Kong SAR)[3] and from the 'rest of Asia'[4], using trading partner statistics.

The co-movement in export growth between China and other Asian economies suggests that common factors—such as growth in advanced economies, movements in the world prices of key exports such as semiconductors, and movements in the yen-dollar rate—were probably more important determinants of Asian exports than was competition with China.

In addition, the vertical integration of many product markets in Asia would likely add to this similarity in growth rates. As an example of how vertical integration might make export growth rates similar, take the example of a small electronic device like a DVD player. The manufacturing of some components—e.g., motherboards, memory, etc.—might be handled in

[3] Fernald, Edison, and Loungani (1999) argue that it makes economic sense to combine data for China and Hong Kong even in the period preceding formal unification, since many goods use Chinese labor and Hong Kong management and distribution skills. It makes statistical sense to use trading-partner statistics, to avoid double-counting Chinese and Hong Kong exports.

[4] 'Rest of Asia' consists of Korea, Singapore, Taiwan, Indonesia, Malaysia, Philippines, Thailand, Bangladesh, India, and Pakistan.

one or several of the ASEAN economies or the NIEs. Those components are then exported to, say, China, where they are assembled into the DVD player. The DVD player is then shipped out to its final destination. Several economies in the region might thus provide value-added to a single device. Hence, as demand for DVD players fluctuates, one would expect export growth to be positively correlated across economies.

Discussions of China's export performance tend to emphasize factors peculiar to China, such as economic reform initiatives, rapid investment, tax incentives, or its WTO accession.[5] Some observers focus almost solely on the perceived undervaluation of the renminbi exchange rate to explain China's export performance. There have been, of course, times when China-specific factors have had a large impact on China's exports (e.g., China's WTO accession almost certainly had a larger effect on China than on its trading partners/competitors). However, these discussions tend to miss the prevalence of common shocks, which Figure 1 suggest are of equal or greater importance.

Table 1 and 2 provide some further evidence on the comovement by controlling for the obvious common factors: Growth in industrial country GDP and real exchange rates. (For example, for much of the period emerging Asia pegged implicitly or explicitly to the dollar, so that changes in the yen/dollar rate would be a common shock for these economies.) In particular, we show results from fixed-effects panel regressions of the real volume of non-China Asian export growth on Chinese real export growth as well as control variables. For these purposes, we include Hong Kong in the NIEs, rather than with China.

[5] Chinese export growth has also been helped by structural reforms of the exchange and trade system, as detailed in Cerra and Dayal-Gulati (1999). Examples include allowing local governments and exporting enterprises to retain a proportion of foreign exchange receipts, eliminating mandatory export and import planning, and opening up the economy to foreign direct investment. Despite occasional reversals, the overall trend has been to reduce the role of central planning in China's foreign trade.

The first three columns of Table 1 do not include controls other than fixed effects and an (insignificant) lagged dependent variable. These columns show the main implication of Figure 1 that when China's exports rise, exports of other economies also tend to rise.

The next three columns include controls. We measure foreign GDP as a weighted average of export-partner GDP, where the weights are country-specific export weights. The real effective exchange rate for each economy uses trade weights with major trading partners, and corresponds to the methodology used by staff at the Board of Governors of the Federal Reserve System in calculating their published U.S. real exchange rate indices (see Loretan (2005) for details).

We note that in the case of China's exchange rate, we do not use the "official" exchange rate between 1987 and 1994. For that period, China had a dual exchange rate system with an official rate and a parallel floating rate (the so-called swap market rate). Following Fernald, Edison, and Loungani (1999), we use a trade-weighted average of the official and swap rates for this period. This correction substantially changes China's real exchange rate around the 1994 unification of the two rates, but does not qualitatively change the results that follow.

Even with the foreign-GDP and real-exchange-rate controls, the conditional correlation remains positive: When China's exports rise, other economies' exports also tend to rise. This is true even when we allow lags of the explanatory variables in the last three columns.

Table 2 allows the coefficient on China's exports to change in 2001, when China entered WTO. The coefficient on China's exports tends to be higher and more significant for the pre-2001 period. But even after 2001, the conditional correlation remains positive (though insignificant).

As noted in the introduction, in recent years commentary has often focused on real exchange rates as a channel for competition among Asian economies. At the onset of the Asian financial crisis in 1997, for example, many observers suggested that China had undergone a large

depreciation at the beginning of 1994, which ultimately brought pressure to bear on other Asian economies to devalue their own currencies. This view was challenged in IMF (1997) and Fernald, Edison and Loungani (1999) on two grounds. First, there was little effective nominal depreciation of the renminbi at the time, because the apparent devaluation of the official rate simply unified it with the unofficial rate at which most trade transactions already took place. Second, the moderate real depreciation was rapidly reversed by China's quite high inflation in 1994 and 1995. As a result, China's real exchange rate appreciated rather than depreciated over the 1993-1997 period. Nevertheless, many Asian economies did have sharp real depreciations whereas China did not.

If China and emerging Asia were important competitors, such exchange rate movements should lead to corresponding changes in real export growth. Hence, a particular focus of the results in this section is whether movements in real exchange rates explain a large share of the variance in exports across Asian economies. In order to quantify the importance of various shocks on Asian exports, we estimate a simple model for Asian export growth. The data used in the estimation are annual, and extend from 1981 to 2005. To obtain sufficient degrees of freedom, we pool the data for eight Asian economies, China, the Asian NIEs (Korea, Singapore, Taiwan) and the 'ASEAN-4' (Indonesia, Malaysia, Philippines, Thailand).

We then run a panel vector autoregression (VAR) with three variables: (1) real income growth among major trading partners, (2) real exchange rate growth, and (3) real export growth. In estimating the VAR, we order the variables as listed; other orderings of the variables have little effect on results. We include two lags of each variable in the estimation, along with country fixed effects.

Figure 2 presents the estimated impulse responses from the VAR showing the response of export growth to standard-sized (i.e., one standard deviation) increases in each of the three sources of shocks. Focusing on the last column, it is evident that the contemporaneous responses

of exports to foreign income and real exchange rate movements have the expected signs and are statistically significant.

The most interesting impulse responses are reproduced in Figure 3, which shows only the point estimates going out four years after the shock. An increase in income growth among trading partners leads to an increase in a "representative" Asian economy's export growth: there is a strong--and statistically significant--contemporaneous impact. Over the next few years, the impact dissipates and is not statistically significantly different from zero. A depreciation in the currencies of major trading partners has the predicted adverse impact on export growth in the representative economy. Here, too, it is only the contemporaneous impact that is significantly different from zero.

Table 3 presents the variance decomposition of real export growth. As shown, income effects account for a much larger percentage of the variance than relative price effects. For instance, at the one-year horizon, income growth accounts for 25 percent of the variance, compared with 8 percent for real exchange rate changes. Not surprisingly, shocks to exports themselves show the largest dynamic response (as shown earlier in Figure 2) and also account for the largest share of the variance.

These results suggest that, over the last twenty five years, changes in real exchange rates have not been the primary determinant of export growth for the major Asian exporters. A more important determinant has been income growth in the major trading partners (which, over the bulk of our sample period, reflects growth in the industrialized economies, particularly the United States). Industrial country demand and the effects of structural changes are likely to have outweighed exchange rate fluctuations as determinants of China's export growth.

These findings can explain why, for instance, China's export growth remained strong during the Asian crisis in 1997-98. Overall demand remained high (with strength in the United States and Europe countering weakness among Asian trading partners). As a result, export

growth remained quite robust despite the drag from the depreciations of many Asian currencies. Prasad and Rumbaugh (2003) make a similar point about the more recent period. While acknowledging that "the recent depreciation of the U.S. dollar, to which the renminbi is linked, has no doubt added temporarily to China's competitiveness," they suggest that it is unlikely that exchange rates are the primary determinant of China export growth because "China's exports continued to grow rapidly virtually across the board even when the U.S. dollar was appreciating against other major currencies."

3. Sectoral Evidence on Export Competition Among Asian Economies in the U.S. Market

This section describes how the market shares of exports of the various Asian economies have changed over time. We focus on exports to the United States, which is likely to have been the market where competition has been most intense. In addition to looking at changes in the overall market share (i.e. exports across all industries combined), we present evidence on changes in two high-profile industries that were identified in our previous work as being ones that displayed large changes in trade shares and accounted for a sizable fraction of total U.S. imports from these Asian economies.

By focusing on relative export performance in a single geographic region and for specific industries, we hope to obtain product-level evidence on "export competition." For these purposes, we define export competition as "shifts in market share" across four groups of Asian economies, China, the Asian NIEs, ASEAN-4, and a South Asia bloc (Bangladesh, India, Pakistan). In particular, we want to see if China's market share has increased markedly within a particular industry.

Note that by focusing on shares in particular markets we are strongly stacking the deck in favor of the export-competition view. After all, since shares sum to 100 percent, it is arithmetically impossible for all shares to move in the same direction. So a country may have its

share in a particular market decline without necessarily experiencing a decline in the level of its exports to that market. It may be losing market share in one market but gaining it in another. Moreover, some changes in shares may be deliberate, as in the case of industries that have shifted to a more vertically integrated approach to manufacturing.

Nevertheless, the changing shares give some sense of how trade patterns are evolving in the various economies. Also, from the perspective of a producer within a narrow industry, these figures give some sense of who they are competing against. Thus, the changing trade patterns discussed here provide indirect evidence on whether China and emerging Asia bettter fit the "flying geese" or "sitting ducks" paradigm.

Trade shares were computed for the period 1989 to 2005, thus providing a long-term perspective on changes. The data are at the three-digit industry level (on an end-use basis) and are published by the U.S. Department of Commerce's Bureau of Economic Analysis (BEA). Tables 4 and 5 present data for 1989 and 2005 for the four country groups and for each of the 47 industries that make up the aggregate.[6] The tables contain a huge amount of data but some salient features emerge.

First, looking at Table 4, there is no doubt that China has emerged as a significant exporter across virtually the entire spectrum of industries: its share has increased in 41 industries. In contrast, there are only four industries in which the NIE share is higher in 2005 than in 1989 and these are all in the industrial supplies and materials category (1-digit code '1', i.e., 3-digit codes that begin with a '1'). In addition, there is one industry, 300 (new and used passenger cars), in which the NIEs have nearly maintained a 100 percent share of U.S. imports from emerging Asia since 1989, although with foreign direct investment in China's auto sector growing rapidly it may not be too long before that dominance is challenged as well.

[6] In fact, there are 48 industries in the aggregate, but there is not trade between the United States and Asia in electric energy, industry 104.

Second, increases in the shares of ASEAN-4 are also quite prevalent, increasing in 17 of the 47 industries. This means that cases in which the shares of both China and ASEAN-4 have increased are almost as likely as cases in which their shares have moved in the opposite direction.

Third, an interesting finding is that South Asia shows an increase in 30 of the 47 industries. Though this region's overall share of the U.S. market still remains small, the increases at the sectoral level suggest that that the region may start to be a contender in future.

Overall, the message from Table 4 is that China and ASEAN-4 appear to have been moving into the product space vacated by the NIEs. The evidence is only reinforced if one takes into account the amount of imports from Asia in each industry, which is shown in Table 5. In five of the seven largest industries, the shares of China and ASEAN-4 have moved in the same direction (these are industries 213, 400, 412, 214 and 211); in the other two (industries 410 and 411) the shares have moved in opposite directions but the declines in the ASEAN-4 share are small.

We now turn to a closer look at the changes over time in trade shares. Table 6.A. shows export shares for the four groups for the U.S. market as a whole. As shown, in 1989 China and Hong Kong together accounted for about a quarter of total exports to the United States from the four groups. By 1993, China's share had increased to a third. Mainland China alone nearly doubled its share of the U.S. market, helped perhaps by the real depreciation of the renminbi over this period. The ASEAN-4 group also increased its market share, but by a smaller magnitude than the increase in mainland China's share. Correspondingly, the share of the NIEs fell from 56 percent to 42 percent. There is, therefore, some evidence of "competition"—shifts in market share—among these three groups over the period 1989 to 1993. South Asia's share did not change over this period.

By contrast to the 1989-93 period, the period between 1993 and 1997 is far more tranquil. The shares of China and ASEAN-4 inch up over this period at the expense of the NIEs. The Asian crisis, and the associated sharp real depreciations in the currencies of many Asian economies, did not lead to any dramatic changes in market shares: The relative stability that characterized the period 1993 to 1997 continued through 2001. During the most recent period, however, China's share jumped dramatically from 42 percent to 57 percent, at the expense of both the NIEs and the ASEAN-4. Thus, the period 2001 to 2005 again shows strong signs of competition.

The story is much the same when we examine the country groups' shares of world exports to the United States. As shown in Figure 4, China's share of world exports to the United States has risen steadily since 1989, with a sharp increase since 2000. The share of the ASEAN-4 also rose through much of the 1990s, but has fallen a little over the most recent period. The NIEs have experienced a steady decline in their share. The share of the South Asia bloc has trended up but remains small.

A similar perspective is offered in Figure 5, where we plot the dollar value of the country groups' exports to the United States. Again, we only see strong signs of competition in the most recent period, from 2001 onwards, during which China's exports to the United States have soared, while exports of the NIEs and the ASEAN-4 have stagnated. During the 1990s, the dollar value of each groups' exports actually rose, providing evidence that—as we noted above—that focusing on shares can overstate the extent of competition.

We now turn to a more detailed analysis of the two largest industries based on U.S. imports from Asia in 2005, namely, industry 213 (computers, peripherals and semi-conductors) and industry 400 (apparel, footwear and household products). First consider the changes in industry 213 (Table 6.B). China's market share rose from 7 percent in 1989 to 19 percent in 2001, while the share of ASEAN-4 rose from 21 percent to 34 percent. There is a corresponding

fall in the share of the NIEs. In the period since 2001, China's gains in this industry have been dramatic and have come at the expense of both the NIEs and ASEAN-4.

The story in the case of industry 400 is a bit different (Table 6.C). Here too, China does experience a big increase in market share between 1989 and 2001, from 34 percent to 56 percent, but the bulk of this increase occurs between 1989 and 1993. The share of the ASEAN-4 also increased over the 1989 to 2001 period, with the change again being more substantial in the earlier part of the period. Since 2001, ASEAN-4 has lost market share to China, while South Asia has held its own over this period.

In sum, contrary to some popular perceptions, China's gains in market share have not come about primarily at the expense of the labor-intensive ASEAN-4 or South Asian economies. Instead, China displaced the NIEs in industries that these more advanced economies were relinquishing. This is a healthy development. It mimics an earlier period, when the NIEs moved into the industries relinquished by a more advanced Japan. In the most recent period, however, from 2001 to 2005, we do see that China's share has risen considerably, still primarily at the expense of the NIEs, but also at the expense of the ASEAN-4.[7]

The Destination of Asian NIE Exports

An interesting fact that emerges from the data is that the NIEs are losing import shares in the U.S. market in almost all categories of goods at the same time that their overall exports are growing. This raises an obvious question: "Where are exports from the NIEs going?" In Table 7, we attempt to answer this using data from the IMF's Direction of Trade Statistics (DOTS).[8] The table shows the average annual growth rate of exports from China, the NIEs, the ASEAN-4 and

[7] For more on the impact of China on ASEAN-4 see Gochoco-Bautista (1995) and Tambunan (2006).

[8] The data is augmented with data from the CEIC database as needed. In particular, data for Taiwan are not up to date in the DOTS database.

South Asia (as we have defined them in this paper) to the world, the G-3 (United States, Japan, and European Union, which we use as a proxy for industrial economies), China, the NIEs, the ASEAN-4 and South Asia.[9] The growth rates are broken down into the time periods we identified earlier: the first period of China's increasing shares from 1989-1993, the relatively stable shares period from 1993-2001, and the recent period in which China's shares have risen rapidly from 2001-2005.

In the early period, it is obvious that China's share of the G-3 import market was growing at the expense of the NIEs. The average growth in Chinese exports to the G-3 was almost 20 percent during that period, while NIE export growth to the G-3 was just 2 percent. However, NIE exports to China were growing at almost a 30 percent annual rate at that time. In the stable share period from 1993-2001, the export growth rates of all three groups were fairly similar. The NIEs experienced a more rapid period of export growth to the G-3, perhaps due to the U.S. high-tech boom, and the NIEs exports to China continued to rise, albeit at a slower rate.

In the period 2001 to 2005, however, the differences are striking. In this period, both the NIEs and ASEAN-4 have experienced export growth to China at a rate that far outstrips their export growth to other regions.[10] We offer two explanations for the rise in NIE exports to China and the relative weakness of exports to the G-3. First, demand in China remained strong throughout the period we examined, despite several episodes of global weakness. Most noticeably, during the 2000-2002 period, the U.S. high-tech bubble burst, global demand fell,

[9] So, for example, exports from the ASEAN-4 to the ASEAN-4 represent total exports from each of the ASEAN-4 economies to the other three economies in the ASEAN-4–in essence, an intra-subregional trade measure. Similarly, exports from China to China capture mainland China's exports to Hong Kong and Hong Kong's exports to the mainland.

[10] Prasad and Rumbaugh (2004) present complementary evidence by looking at how important China has become to various economies as a destination for their exports. In the case of some of the Asian NIEs the increase in the importance of China as an export destination has been quite dramatic. For example, China has gone from accounting from under 0.1 percent of Korea's exports in 1990 to over 10 percent in 2000 and nearly 15 percent in 2002.

and yet China continued to grow at a robust pace. Thus, it is not surprising that exports to China rose significantly in that period. Second, the shifting of production facilities to China from the NIEs likely has boosted NIE exports of intermediate products to China for processing and export of the finished product.[11] The data presented here do not shed light on the relative importance of these two explanations, but it is likely that both are partly responsible.

4. Conclusions

We have examined trade linkages among China and other economies in emerging Asia at both the aggregate and sectoral level. At an aggregate level their relationship appears complementary, with export growth driven by common factors such as global growth. Moreover, China's rapid growth itself represents a significant opportunity for emerging Asia—China's imports have grown in lock step with its exports, and China is thus an important source of demand for goods from emerging Asia. For example, Korean exports of steel products to China have surged, reflecting robust spending on infrastructure and other construction projects in China.

When one looks at the sectoral data on U.S. imports from Asia, there is no doubt that China is displacing other Asian economies across a wide spectrum of markets. Not all of this displacement is symptomatic of competition. First, a significant portion of the final assembly of Asian-made products takes place in China. In that sense, as McKinnon and Schnab (2006) state, "China is merely the face of a worldwide export surge into American consumer markets".

[11] For a detailed discussion of the rise in intraregional trade in Asia, see Zebregs (2003). He concludes that "the rise in intraregional trade is largely driven by rapidly growing intra-industry trade, which is a reflection of greater vertical specialization and the dispersion of production processes across borders. This has led to a sharp rise in trade in intermediate goods ... but the EU, Japan and the United States remain the main export markets for final goods."

Second, to some extent the changes in trade shares reflect a longer-term trend of China moving into the product space vacated by the Asian NIEs as they move to higher value-added products.

Nevertheless, it seems likely that the shifts in trade shares require actual shifts in resource allocations, which can often be painful for those who lose out. The appropriate policy response would be to take steps to smooth the flow of resources across sectors.

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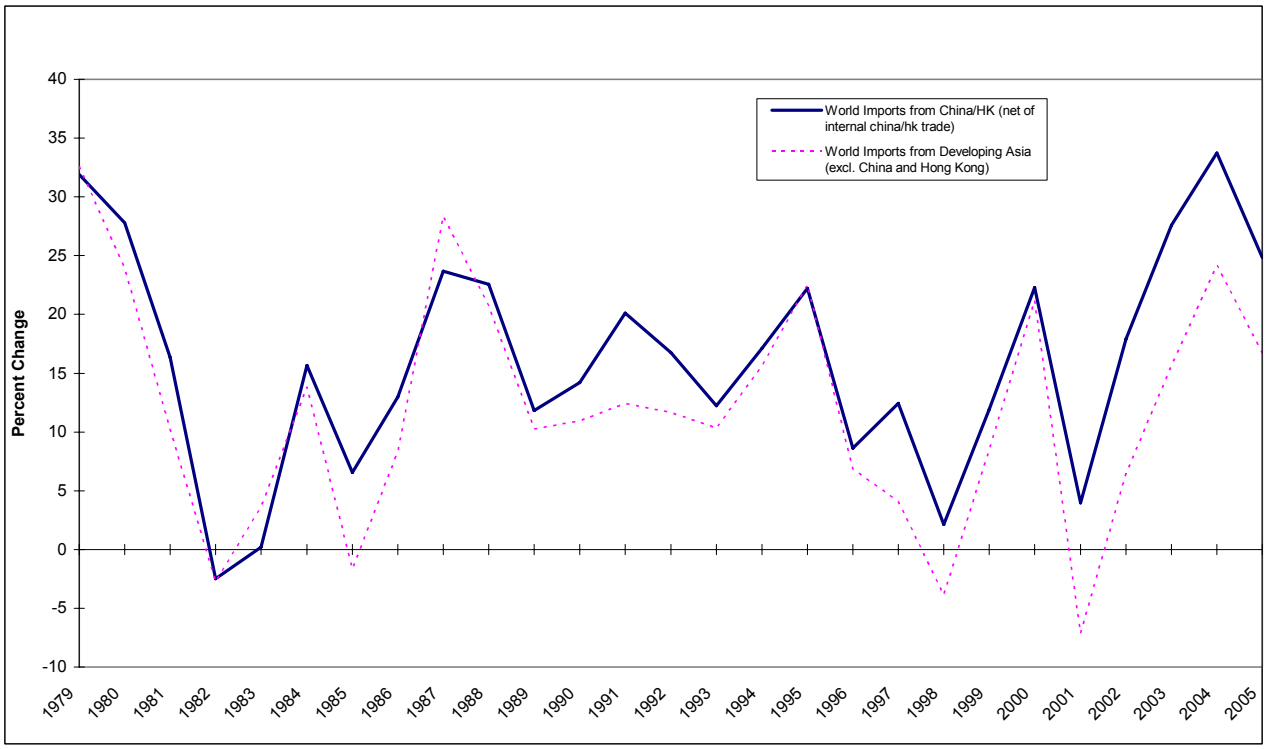
Figure 1
Exports and China and Emerging Asia
(percent change)



Source: IFS. Figure shows annual growth in nominal value of exports of China and Hong Kong (excluding trade between China and Hong Kong), and exports of other developing Asian economies. As noted in the text, we use trading-partner data on imports from these regions.

Figure 2
Impulse responses from trivariate VAR system

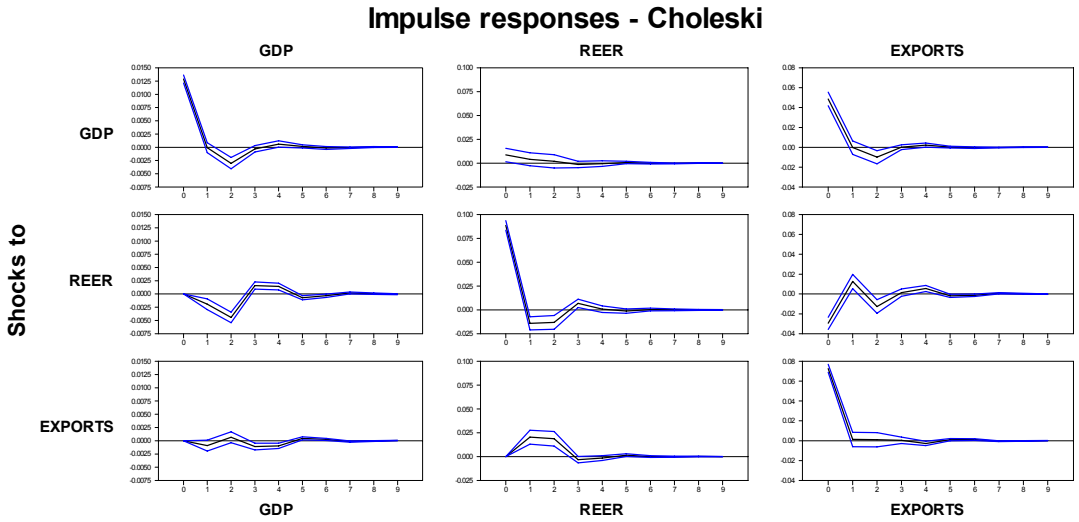


Figure 3

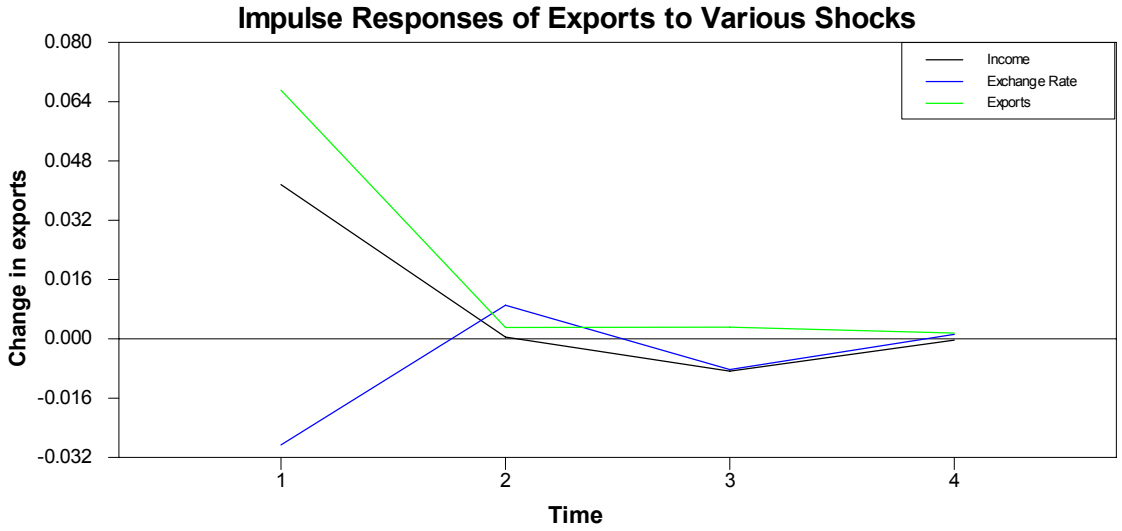


Figure 4

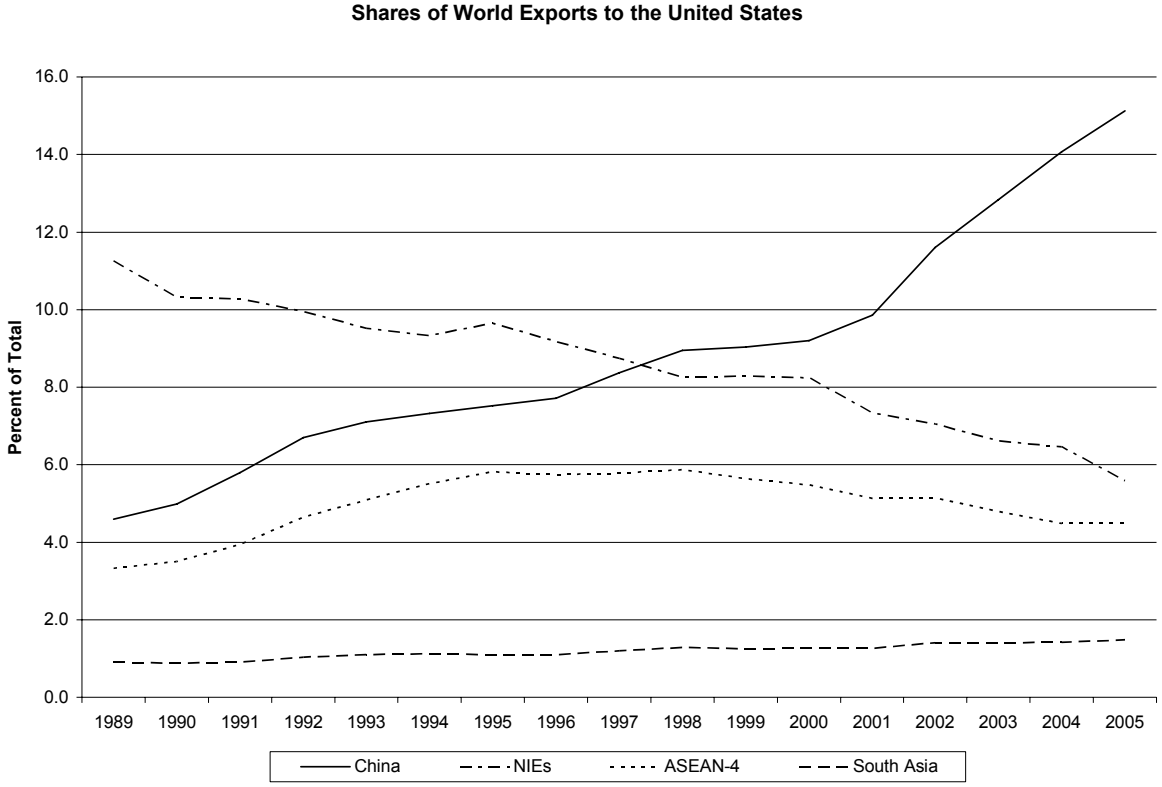


Figure 5

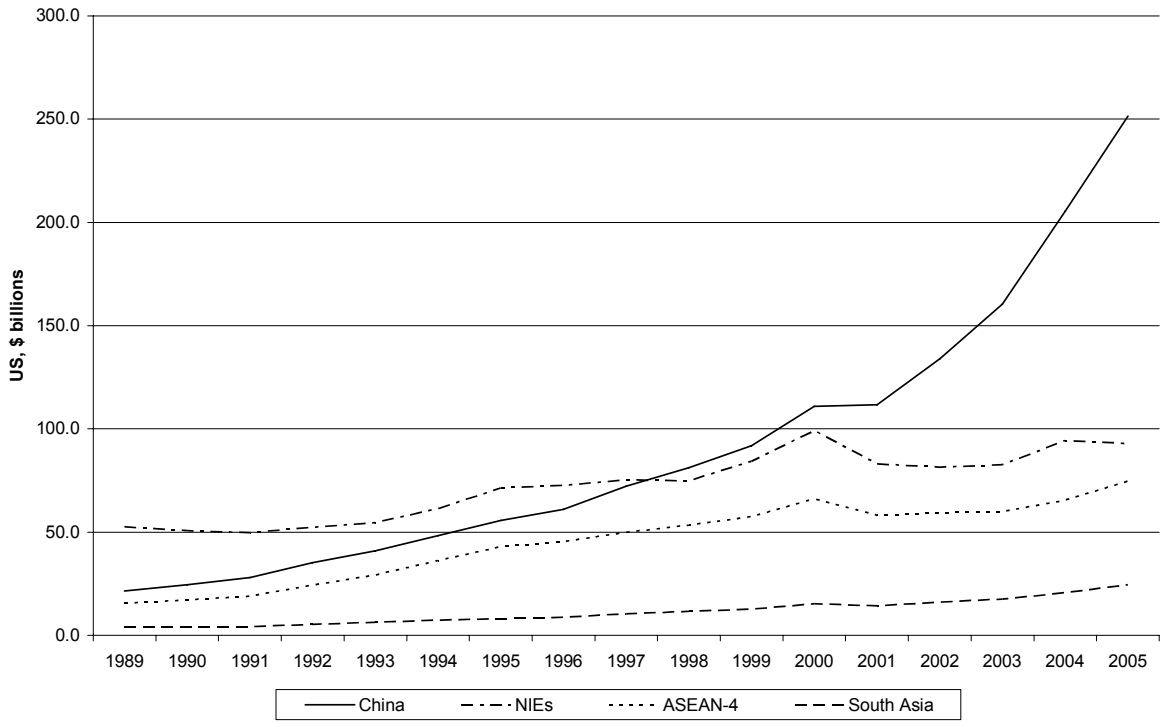


Table 1
Conditional Correlations between China's Real Export Growth and Real Export Growth in other Asian Economies

	NIEs	ASEAN-4	All countries	NIEs	ASEAN-4	All countries	NIEs	ASEAN-4	All countries
Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
China's Real Exports	0.29	0.36	0.32	0.10	0.19	0.14	0.13	0.20	0.20
	(0.09)	(0.12)	(0.07)	(0.08)	(0.11)	(0.07)	(0.09)	(0.12)	(0.08)
Lag 1	.	.	.	.	.	.	-0.00	-0.01	-0.00
							(0.09)	(0.12)	(0.08)
Lag 2	.	.	.	.	.	.	-0.05	-0.03	-0.05
							(0.09)	(0.13)	(0.08)
Foreign Demand	.	.	.	2.75	3.24	3.06	3.44	4.14	3.78
				(0.51)	(0.61)	(0.40)	(0.66)	(0.79)	(0.55)
Lag 1	.	.	.	.	.	.	-1.57	-0.02	-0.90
							(0.58)	(0.75)	(0.50)
Lag 2	.	.	.	.	.	.	1.11	0.85	0.76
							(0.52)	(0.66)	(0.44)
Real Exchange Rate	.	.	.	-0.34	-0.34	-0.33	-0.31	-0.32	-0.37
				(0.10)	(0.07)	(0.05)	(0.10)	(0.07)	(0.06)
Lag 1	.	.	.	.	.	.	-0.30	0.29	0.17
							(0.10)	(0.07)	(0.06)
Lag 2	.	.	.	.	.	.	-0.00	0.06	-0.03
							(0.10)	(0.08)	(0.06)
Lagged Dependent Variable	0.12	-0.06	0.00	0.10	-0.07	-0.01	0.20	0.01	0.11
	(0.10)	(0.10)	(0.07)	(0.09)	(0.08)	(0.06)	(0.11)	(0.11)	(0.08)
Adjusted R^2	0.09	0.12	0.13	0.35	0.42	0.40	0.48	0.50	0.43

Note: Standard errors are in parenthesis. Dependent variable is growth in exports in local-currency units. Regressions estimated as a panel from 1981-2005. NIEs comprise of Korea, Singapore, Taiwan, and Hong Kong. ASEAN-4 comprise Indonesia, Malaysia, Philippines, and Thailand. All regressions include country fixed effects (not shown).

Table 2
Regressions with Break in Coefficient on China's Exports

	NIEs	ASEAN-4	All countries
	(1)	(2)	(3)
China's Real Exports (Pre-2001)	0.13	0.27	0.19
	(0.10)	(0.13)	(0.08)
China's Real Exports (Beginning in 2001)	0.10	0.16	0.12
	(0.09)	(0.11)	(0.07)
Foreign Demand	2.68	2.96	2.89
	(0.54)	(0.66)	(0.42)
Real Exchange Rate	-0.35	-0.33	-0.33
	(0.10)	(0.07)	(0.05)
Lagged Dependent Variable	0.10	-0.07	-0.01
	(0.09)	(0.08)	(0.06)
Adjusted R^2	0.34	0.42	0.40

Note: Standard errors are in parenthesis. Dependent variable is growth in exports in local-currency units. Regressions estimated as a panel from 1981-2005. NIEs comprise of Korea, Singapore, Taiwan, and Hong Kong. ASEAN-4 comprise of Indonesia, Malaysia, Philippines, and Thailand. All regressions include country fixed effects (not shown).

Table 3

Variance Decompositions

Decomposition of Variance for Export Growth (EXPORTS)

Step	GDP	REER	EXPORTS
1	25.4	8.3	66.4
2	24.7	10.5	64.7
3	25.2	11.1	63.8
4	25.1	11.1	63.8

GDP = GDP growth of major trading partners
REER = growth in real effective exchange rate

Table 4
Shares of U.S. Imports from Asia by Sub-Region
(all figures are percent, and sum to 100 for a given year)

End Use Code	Industry Description	1989				2005			
		China	NIEs	ASEAN	S. Asia	China	NIEs	ASEAN	S. Asia
000	Green coffee, cocoa beans, and cane sugar	0	3	89	8	0	2	97	1
001	Other agricultural foods	19	15	55	11	35	10	41	14
002	Feedstuff and foodgrains	2	4	82	13	27	2	54	17
010	Nonagricultural products	20	27	45	8	31	5	53	11
100	Petroleum and products, excluding gas	18	8	62	12	15	51	20	15
101	Fuels, n.e.s.-coal and gas	71	1	29	0	75	0	23	2
103	Nuclear Fuel Materials and Fuels	100	0	0	0	100	0	0	0
110	Paper base stocks	15	41	43	0	12	0	85	3
111	Newsprint and other paper products	19	76	5	0	43	45	11	1
120	Agricultural products	12	5	77	6	19	3	66	13
121	Textile supplies and related materials	25	47	13	15	37	35	10	18
123	Other materials, except chemicals	16	37	45	2	16	74	9	1
125	Chemicals, excluding medicinals and food additives	19	62	8	11	45	31	13	11
130	Lumber and other unfinished building materials	2	27	68	3	59	9	21	11
131	Building materials, finished	8	75	17	0	73	10	17	1
140	Steelmaking and ferroalloying materials-unmanufact.	60	5	24	11	92	6	2	0
141	Iron and steel mill products-semifinished	1	90	3	6	26	51	9	14
142	Major nonferrous metals-crude and semifinished	52	14	33	1	67	12	15	6
150	Iron and steel products, except advanced manufact.	9	76	10	5	49	33	9	9
151	Iron and steel manufactures-advanced	12	84	3	2	46	48	2	3
152	Other finished metal shapes and advanced manufact.	16	72	4	8	63	23	6	7
160	Unfinished	51	16	14	19	54	31	7	9
161	Finished	23	66	10	1	52	37	8	3
200	Electric and electric generating equipment	22	70	8	0	62	23	12	3
210	Oil drilling, mining and construction machinery	4	74	21	1	38	51	5	6
211	Industrial and service machinery, n.e.c.	15	81	2	2	57	33	6	4
212	Agricultural machinery and equipment	10	83	3	4	45	30	1	24
213	Computers, peripherals and semiconductors	7	72	21	0	48	25	27	0
214	Telecommunications equipment	21	66	13	0	38	13	49	0
215	Other business machinery and equipment	28	66	6	0	86	9	5	0
216	Scientific, hospital and medical machinery	22	61	6	12	42	26	27	4
220	Civilian aircraft, engines and parts	12	83	4	0	24	68	6	1
221	Railway transportation equipment	16	81	2	1	71	12	2	15
222	Vessels, except military and pleasure craft	11	83	6	0	59	37	3	1
223	Spacecraft, engines and parts, except military	0	100	0	0	0	30	67	3
300	Passenger cars, new and used	0	100	0	0	1	99	0	0
301	Trucks, buses, and special-purpose vehicles	0	99	0	1	98	2	0	0
302	Parts, engines, bodies, and chassis	11	74	13	2	44	38	14	4
400	Apparel, footwear, and household goods	34	49	12	5	68	5	13	14
401	Other consumer nondurables	45	46	8	1	64	25	4	7
410	Household goods	23	64	10	3	72	17	9	2
411	Recreational equipment and materials	38	57	5	0	88	9	3	0
412	Home entertainment equipment	19	63	18	0	67	15	18	0
413	Coins, gems, jewelry, and collectibles	46	22	28	4	50	2	21	27
420	Nondurables-unmanufactured	14	34	38	14	29	33	21	17
421	Durables-unmanufactured	12	13	10	65	28	2	6	64
500	Imports, N.E.S.	28	55	15	2	44	38	15	3

Table 5
Dollar value and Import Share from Asia, by product

End Use Code	Description	Total Imports from Asia 1989 (US $ billions)	Total Imports from Asia 2005 (US $ billions)	Asia's Share of U.S. Imports 1989 (percent)	Asia's Share of U.S. Imports 2005 (percent)
000	Green coffee, cocoa beans, and cane sugar	0.3	0.4	9	11
001	Other agricultural foods	1.4	3.9	11	9
002	Feedstuff and foodgrains	0.1	0.4	14	21
010	Nonagricultural products	1.6	4.9	23	30
100	Petroleum and products, excluding gas	2.5	4.0	5	2
101	Fuels, n.e.s.-coal and gas	0.0	0.5	0	1
103	Nuclear Fuel Materials and Fuels	0.0	0.1	0	2
110	Paper base stocks	0.0	0.0	0	1
111	Newsprint and other paper products	0.1	0.9	1	9
120	Agricultural products	1.2	2.6	30	37
121	Textile supplies and related materials	1.6	4.8	30	37
123	Other materials, except chemicals	0.0	0.1	2	9
125	Chemicals, excluding medicinals and food additives	0.7	7.1	5	13
130	Lumber and other unfinished building materials	0.5	3.0	11	17
131	Building materials, finished	0.5	2.8	19	17
140	Steelmaking and ferroalloying materials-unmanufactured	0.1	0.4	5	7
141	Iron and steel mill products-semifinished	0.4	2.6	5	16
142	Major nonferrous metals-crude and semifinished	0.3	1.2	2	4
150	Iron and steel products, except advanced manufactures	0.6	2.2	20	30
151	Iron and steel manufactures-advanced	0.8	3.5	33	50
152	Other finished metal shapes and advanced manufactures	0.4	3.4	16	27
160	Unfinished	0.1	0.6	8	14
161	Finished	1.1	8.1	21	33
200	Electric and electric generating equipment	2.4	12.9	19	30
210	Oil drilling, mining and construction machinery	0.3	3.0	6	19
211	Industrial and service machinery, n.e.c.	2.7	17.5	9	18
212	Agricultural machinery and equipment	0.1	0.8	3	12
213	Computers, peripherals and semiconductors	14.8	88.7	44	75
214	Telecommunications equipment	2.6	19.6	28	53
215	Other business machinery and equipment	0.8	4.1	18	48
216	Scientific, hospital and medical machinery	0.3	4.2	8	17
220	Civilian aircraft, engines and parts	0.1	0.8	2	3
221	Railway transportation equipment	0.0	0.2	2	14
222	Vessels, except military and pleasure craft	0.0	0.1	13	11
223	Spacecraft, engines and parts, except military	0.0	0.0	0	0
300	Passenger cars, new and used	1.6	9.2	3	7
301	Trucks, buses, and special-purpose vehicles	0.0	0.3	0	1
302	Parts, engines, bodies, and chassis	1.9	12.2	7	13
400	Apparel, footwear, and household goods	24.6	65.6	69	61
401	Other consumer nondurables	2.0	9.7	19	13
410	Household goods	9.4	64.2	51	66
411	Recreational equipment and materials	6.0	24.9	48	67
412	Home entertainment equipment	5.1	27.5	43	59
413	Coins, gems, jewelry, and collectibles	1.6	6.9	23	36
420	Nondurables-unmanufactured	0.0	0.1	3	4
421	Durables-unmanufactured	1.8	5.1	32	27
500	Imports, N.E.S.	1.4	8.3	10	15

Table 6
Shares of U.S. Imports from Asia from Selected Sub-Regions
(percent; all shares sum to 100 for a given year)

A. All Industries

	1989	1993	1997	2001	2005
China	23	31	35	42	57
NIEs	56	42	36	31	21
ASEAN-4	17	22	24	22	17
South Asia	5	5	5	5	6

B. Industry 213: Computers, peripherals and semiconductors

	1989	1993	1997	2001	2005
China	7	7	10	19	48
NIEs	72	68	61	47	25
ASEAN-4	21	25	29	34	27
South Asia	0	0	0	0	0

C.Industry 400: Apparel, footwear, and household goods

	1989	1993	1997	2001	2005
China	34	51	55	56	68
NIEs	49	23	13	11	5
ASEAN-4	12	18	21	20	13
South Asia	5	8	11	14	14

Table 7
Average Annual Growth of Exports from Emerging Asia by Destination

		World	G-3	Greater China	NIEs	ASEAN-4	South Asia
1989-1993	China/HK	15.8	18.4	12.7	17.6	13.2	13.0
	NIE's	9.3	2.5	27.7	15.6	16.9	14.3
	ASEAN-4	15.3	12.9	19.8	20.7	17.3	8.1
	South Asia	8.3	3.4	7.9	12.5	18.4	18.3
1993-2001	China/HK	9.1	9.9	7.4	10.2	12.2	12.8
	NIE's	6.2	5.0	8.8	8.7	7.0	6.1
	ASEAN-4	7.8	6.8	11.4	7.0	14.8	15.1
	South Asia	9.1	8.2	11.2	7.0	10.1	11.0
2001-2005	China/HK	23.2	21.7	21.6	25.6	25.4	36.3
	NIE's	14.5	7.3	26.8	14.8	13.1	18.9
	ASEAN-4	14.6	9.1	34.0	10.7	20.5	24.2
	South Asia	19.5	15.5	34.0	18.1	19.4	17.0

Source: IMF Direction of Trade Statistics, CEIC, and National Sources