

# FEATURE ARTICLE

**HOW RELIANT ARE EAST ASIAN ECONOMIES  
ON FINAL DEMAND IN CHINA AND THE G-3?**

## HOW RELIANT ARE EAST ASIAN ECONOMIES ON FINAL DEMAND IN CHINA AND THE G-3?

The views expressed in this paper are solely those of the author and do not necessarily reflect those of the Ministry of Trade and Industry or the Government of Singapore.

### BACKGROUND

After thirty years of economic transformation, China has become one of the largest economies in the world, accounting for an estimated 11 per cent of the world's economic output (in purchasing power parity terms) and contributing nearly 27 per cent to global growth in 2007 (IMF, 2008). Expanding at an average rate of 9.6 per cent per annum over the past decade, China's economy was driven by a rapid buildup in physical capital, robust growth in export-oriented industrial production and a steady rise in consumption. In particular, supported by rising income levels, total consumption expenditure in China grew significantly by an average of 7.4 per cent per annum between 1997 and 2007, contributing an average of 4.1 percentage points to annual GDP growth over this period.

Leveraging on China's rapid economic growth, many East Asian economies have intensified their efforts to reach China's consumers or plug themselves into China's production processes through supplying raw materials and intermediate goods. These efforts have strengthened trade flows between China and East Asian economies in recent years. As a result, the export exposure of many East Asian economies to China has increased significantly ([Exhibit 1](#)).

**Exhibit 1: Direct Exports to China, EU and US as a Percentage of Total Exports (2003 and 2007)**

	China		EU		US	
	2003	2007	2003	2007	2003	2007
Singapore	6.3	9.7	12.8	10.7	12.0	8.8
Malaysia	6.5	8.8	12.6	12.8	19.6	15.6
South Korea	18.1	22.1	14.0	15.1	17.7	12.3
Taiwan	15.2	25.3	13.2	10.9	17.6	13.0
Hong Kong	42.6	48.7	13.8	13.5	18.6	13.7
Indonesia	6.2	8.5	13.7	11.7	12.1	10.2
Philippines	6.1	11.4	16.7	17.0	19.6	17.0
Thailand	7.1	9.7	15.3	14.0	17.0	12.6

Source: Various official sources

The rising importance of China as a key export destination for East Asian economies has led to some conclusions that China had become a new engine of growth for Asia. Pointing to the continued resilience of Asian economies in the second half of 2007 when the US economy started to cool, proponents of this "decoupling" view argued that Asia had reduced its reliance on the US and other developed economies and could weather adverse external conditions more effectively compared to the past.

However, this "decoupling" thesis has unraveled. The recession in the US evolved in 2008 into a full blown global crisis which has led to a severe deterioration in consumption demand and trade in most parts of the world, including China. Many recent studies now provide compelling evidence that suggests that the G-3 economies (i.e., US, EU and Japan), rather than China, are still the dominant force driving economic growth in Asia, even in the face of China's apparent economic ascendance.

For example, the Asian Development Bank (ADB) (2007) estimated that a significant 61 per cent of Asia's total exports were eventually consumed in the G-3, while only 6.4 per cent of Asia's exports went to meet final demand in China. A study by the Hong Kong Monetary Authority (HKMA) (2007) estimated that a 10 per cent decline in the US' imports could lead to a 2.9 per cent decline in NIE-4's total exports and a 3.0 per cent decline in ASEAN's total exports, reflecting the vulnerability of emerging Asia to demand shocks from the US notwithstanding their greater exposure to China. A more recent study by the European Central Bank (2009) found that final demand in China only accounted for 7.2 per cent of the value-added in the NIE-3 (Korea, Singapore and Taiwan) and ASEAN-4 (Indonesia, Malaysia, the Philippines and Thailand).

This article deepens the existing analysis by examining:

- a. China's final demand for different categories of imported goods originating from East Asian economies; and
- b. the extent of reliance individual East Asian economies have on final demand within China and the G-3.

## ANALYSIS OF CHINA'S IMPORTS

Data on China's imports can be generally disaggregated into two broad categories:

- a. Imports for processing trade. These refer to imports that are intended to be assembled or transformed, and subsequently re-exported. These imports are generally exempted from import duties and taxes.
- b. Imports for ordinary trade. These refer to imports that are geared towards meeting domestic consumption and which are subjected to general tariff rates. A small portion of such imports could be used in the production of export goods which are based mostly on local Chinese content<sup>1</sup>.

An analysis of the data for 2006/2007 is given below.

### **Breakdown by Type of Trade and Product Category**

Imports for processing trade<sup>2</sup> in China accounted for a significant 46 per cent of the economy's total imports in 2007. In other words, China's imports of intermediate goods and equipment used in its export-oriented manufacturing activities make up nearly half of the economy's total imports. The other 54 per cent of China's imports were classified under ordinary trade which we assume to be generally geared towards meeting domestic demand within China.

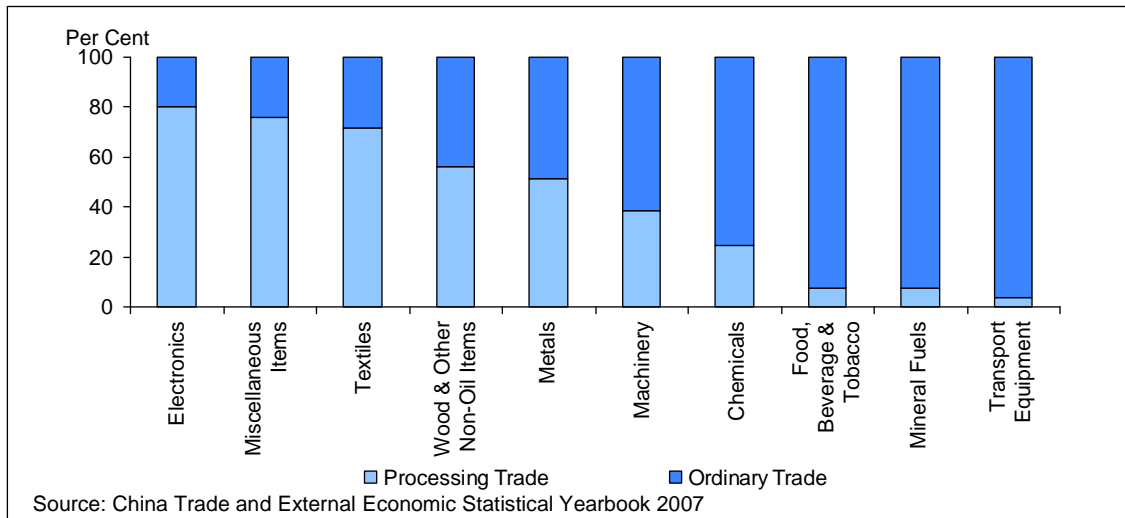
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<sup>1</sup> For example, it is possible that some oil imports or capital equipment that are classified as imports under ordinary trade may be used in the production of goods destined for export markets. This means that there could be some overlaps between imports for processing and ordinary trade. Hence, the distinction between the two types of imports may not be so clear.

<sup>2</sup> This refers mainly to imports of goods that are intended to be assembled or transformed in China, and subsequently re-exported. It also includes imports of equipment used predominantly for export-oriented manufacturing activities. In comparison, ordinary trade refers primarily to imports intended for China's domestic market and may include some exports that are mostly based on local Chinese input. Apart from processing and ordinary trade, there are other less significant components of trade classified under China's custom regime (e.g. custom warehousing trade, goods on lease or consignment, aids and donations) which are not considered in our analysis due to their relatively small share in China's imports and lack of detailed statistics on such trade components.

Key imports which were intended primarily for processing trade included Electronics (80 per cent), Miscellaneous Items (e.g., optical, photographic equipment and parts) (76 per cent) and Textile goods (71 per cent) (Exhibit 2). Those that were geared towards meeting domestic demand included Transport Equipment, Mineral Fuels as well as Food, Beverage and Tobacco. Falling in the middle of the range were Metals and Wood & Other Non-oil Items. Details on the composition of each product category are provided in Annex 1.

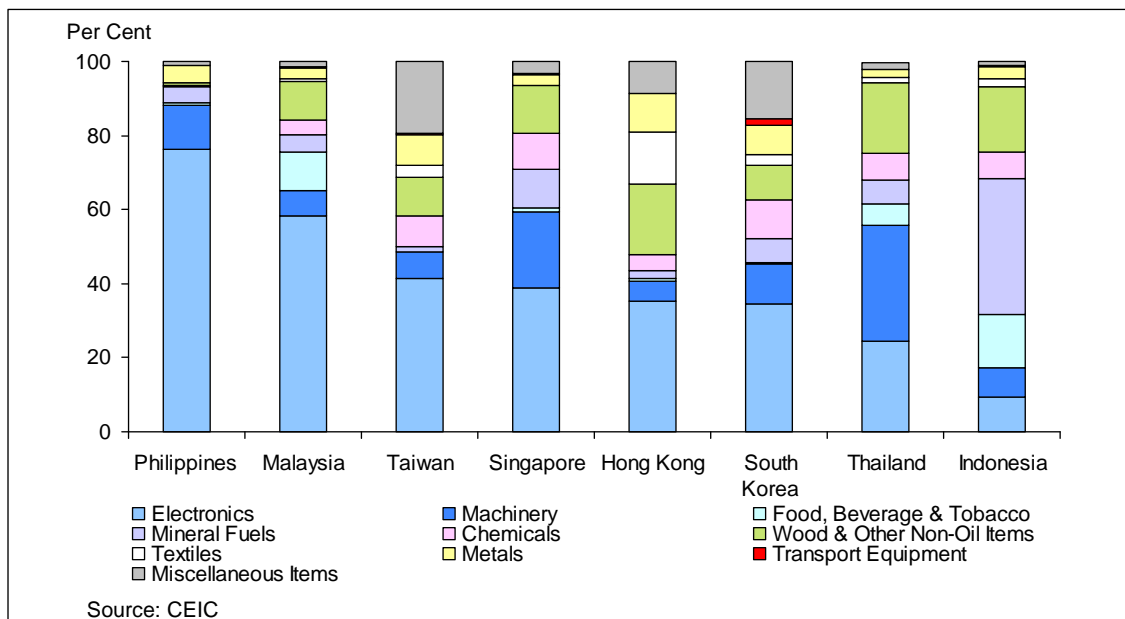
**Exhibit 2: Breakdown in China's Imports by Product Category & Type of Trade, 2006**



**Breakdown by Product Category and Source**

Electronics products dominated China's imports from the Philippines and Malaysia (76 per cent and 58 per cent respectively). It also accounted for a significant share of China's imports from the NIE-4 (ranging from 34 per cent to 41 per cent for individual economies). In contrast, such products accounted for a relatively smaller share of China's imports from Thailand (25 per cent) and Indonesia (9.2 per cent) (Exhibit 3).

**Exhibit 3: Breakdown in China's Imports from Various Economies by Product Categories, 2007**



At the other extreme, Mineral Fuels accounted for 36 per cent of China's imports from Indonesia, while Machinery accounted for around 31 per cent and 20 per cent of China's imports from Thailand and Singapore respectively. Miscellaneous Items accounted for close to 20 per cent of China's imports from Taiwan. The other product categories – Food, Beverage and Tobacco, Chemicals, Textiles, Metals, Transport Equipment, Wood & Other Non-oil Items – separately accounted for less than 20 per cent of China's imports from individual East Asian economies, reflecting their limited penetration into the Chinese market.

### **Exposure of East Asian Economies to Final Demand in China**

We can now make the argument that economies which had large exposures to electronics exports were, on balance, less plugged into China's final domestic demand. For example, after taking into account the Philippines' and Taiwan's significant exposure to electronics exports, we found that only about 30 per cent and 35 per cent of their exports to China catered to China's domestic demand (Exhibit 4). As a result, these economies are likely to be more vulnerable to weak external demand conditions outside China.

On the other hand, economies such as Indonesia, which is more geared towards supplying China's domestic demand, could be better shielded from the sharp contraction in global demand. As shown in Exhibit 4, a significant 70 per cent of Indonesia's exports to China were oriented towards meeting domestic demand in China.

Singapore falls somewhere in the middle of the range in terms of the extent of exposure to China's domestic demand. Singapore's large exposure to Electronics (39 per cent) was balanced out by its exposures to products geared towards meeting China's domestic demand, most notably Mineral Fuels. Consequently, about 46 per cent of Singapore's exports to China catered to China's domestic demand. However, if Mineral Fuels, comprising mainly oil and related products, were excluded, then only about 41 per cent of Singapore's exports to China catered to the economy's domestic demand. If we further consider Singapore's total exports to the world, then only 3.9 per cent to 4.5 per cent<sup>3</sup> of such exports were estimated to be consumed in China.

**Exhibit 4: Share of Exports that Catered to China's Domestic Demand (2007)**

	Per Cent	
	As a percentage of total exports to China	As a percentage of total exports to the world
Philippines	30.2	3.4
Taiwan	34.7	8.8
Hong Kong	35.9	17.5
Malaysia	39.5	3.5
South Korea	42.1	9.3
Singapore	46.5*	4.5*
Thailand	51.2	5.0
Indonesia	70.1	5.9

\* Excluding Mineral Fuels, an estimated 41.2 per cent of Singapore's exports to China and 3.9 per cent of Singapore's total exports to the world were oriented towards meeting consumption demand in China.

<sup>3</sup> In comparison, Citigroup (2008) estimated that Singapore's exports catering to China's domestic demand accounted for at most 4.2 per cent of Singapore's total domestic exports. The HKMA (2008), on the other hand, estimated that Singapore's exports catering to China's domestic demand (including Singapore's exports to China through Hong Kong) accounted for 10 per cent of Singapore's total exports.

## EXPOSURE TO FINAL DEMAND IN THE G-3 VIA PROCESSING TRADE IN CHINA

A significant portion of East Asia's exports to China is likely to be used as intermediate inputs to be assembled into final goods in China and subsequently shipped to the G-3. Hence, in estimating the export exposure among East Asian economies to final demand in the G-3, we need to account for their indirect exposures to the G-3 via processing trade in China.

One key challenge in making such estimations was that data on the exact flow of goods from individual economies through China to the other parts of the world was not available. To overcome this, we assumed that China's imports for processing trade were pooled and assembled into homogenous final products and then distributed to China's export markets (e.g., US, EU and Japan) in proportion to the relative size of these markets. While simplistic, this method does provide some rough indications of the extent of exposure to final demand in various economies. A summary of the estimates is provided in [Exhibit 5](#) below.

**Exhibit 5: Bilateral Export Exposures for Selected East Asian Economies in 2007**

				Per Cent
Source Economy	Export market	Share of total exports going directly to respective markets (a)	Share of total exports used as intermediate inputs for China's exports to respective markets (b)	Total export exposure (c) = (a) + (b)
Singapore	G-3	24.3	2.5	26.8
	China	9.7	-5.2*	4.5
Hong Kong	G-3	31.7	15.3	47.0
	China	48.7	-31.2*	17.5
Taiwan	G-3	30.4	8.1	38.5
	China	25.3	-16.5*	8.8
South Korea	G-3	34.5	6.2	40.7
	China	22.1	-12.8*	9.3
Philippines	G-3	48.5	3.9	52.4
	China	11.4	-8.0*	3.4
Malaysia	G-3	37.5	2.6	40.1
	China	8.8	-5.3*	3.5
Thailand	G-3	38.4	2.3	40.7
	China	9.7	-4.7*	5.0
Indonesia	G-3	42.6	1.2	43.8
	China	8.5	-2.5*	6.0

\* Refers to the share of exports to China (out of total exports) that was used for processing trade. This portion should be stripped out from the direct export exposure to China to derive the actual exposure to China's domestic demand.

As shown, the indirect export exposure to the G-3 via China was significant for most economies, with a difference of as much as 15 percentage points in the case of Hong Kong<sup>4</sup>. If we account for such indirect export exposures, the export patterns for Hong Kong, Taiwan and South Korea would be significantly altered.

<sup>4</sup> In other words, 15 per cent of Hong Kong's total exports to the world were exported to China and used as intermediate inputs for the manufacture of final goods that China subsequently exported to the G-3.

Hong Kong provides a useful case in point. If we considered only direct export exposure, China would be Hong Kong's largest export market, accounting for 49 per cent of Hong Kong's total exports, while the G-3 collectively accounted for 32 per cent of Hong Kong's total exports. But after adjusting for Hong Kong's indirect export exposure to the G-3 via processing trade in China, the situation becomes reversed. The G-3 has become Hong Kong's largest export market, accounting for 47 per cent of Hong Kong's exports, while China only accounted for about 18 per cent. This finding should not come as a surprise given the importance of outward processing activities in the Hong Kong-China trade, with finished products destined for export markets in the US and other advanced economies. More importantly, this finding suggests that conventional measures for trade linkages based on bilateral trade statistics could be misleading in the light of how fragmented global production chains have become.

Most of the selected East Asian economies' export exposures to the G-3 (after including indirect exposures via China) were around 40 per cent or higher. This lends weight to the argument that East Asian economies generally remain reliant on and susceptible to demand conditions in the G-3. Singapore appears to be an exception, with 27 per cent of total exports going to the G-3 (even after accounting for indirect exposures via China). However, the large volume of re-export trade through Singapore probably distorts the figure, especially given that a significant part of such trade are in oil and electronic component products which are likely to be used in outward processing activities in other parts of Asia. When we remove re-exports and consider only Singapore's non-oil domestic exports, our export exposure to the G-3 would be significantly higher at about 42 per cent, comparable to other East Asian economies.

## CONCLUSION

Our findings are generally in line with those of recent studies by ADB (2007), HKMA (2007) and ECB (2009). They consistently point towards the conclusion that China has not become a key source of final demand for the exports of many East Asian economies. Instead, China appears to be serving as the final node of global supply chains, assembling and re-exporting a significant portion of its imports to other parts of the world. The advanced economies, on the other hand, are probably still the biggest consumer markets in the world and continue to play a key role in driving the business cycles of most Asian economies.

Based on these findings, it can be concluded that external demand remains an important source of economic growth for the region and that Asia is unlikely to weather a significant slowdown in the US economy, even with China's rise as an economic powerhouse.

Recent trade data lends further support to these arguments. In the first quarter of 2009, China's exports to the US, EU and Japan fell sharply by 15 per cent, 22 per cent and 16 per cent year-on-year respectively, in tandem with the sharp contraction in demand in these economies. At the same time, China's imports from the eight selected East Asian economies fell by between 25 per cent (Singapore) and 61 per cent (the Philippines) year-on-year, suggesting that the demand shock from the G-3 to China had transmitted to the rest of Asia. Put together, the evidence from various sources implies that Asia's exports are still very much reliant on demand from external economies like the G-3 and less so on China.

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## ANNEX 1: CLASSIFICATION OF CHINA'S IMPORTS BY BROAD PRODUCT CATEGORIES

Broad Product Category	Specific Products (classified based on the Harmonised System - HS)
Food, Beverage & Tobacco	Live animals, animal products; vegetable products; animal or vegetable fats and oils; prepared foodstuffs, beverage and tobacco
Mineral Fuels	Mineral fuels, mineral oils and other mineral products
Chemicals	Products of chemical or allied industries (including pharmaceutical products, fertilizers, organic and inorganic chemicals)
Wood and Other Non-oil Items	Plastics, rubber and articles thereof; raw hides and skins, leather and articles; wood and articles charcoal, pulp of wood; paper and paperboard; articles of stone, cement, glass
Textiles	Textiles and textile articles; footwear, headgear, umbrellas
Metals	Precious stone and metals; base metals and articles
Electronics	Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers
Machinery	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
Transport Equipment	Vehicles, aircraft, vessels and transport equipment
Miscellaneous Items	Optical, photographic, musical instruments; arms and ammunition, parts & accessories; miscellaneous manufacturing articles; works of art, collectors' pieces, antiques; items not classified according to kind