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China's Exports in ICT and its Impact on Asian Countries

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Abstract

This paper analyses China's ICT exports growth in its two major markets Japan and the US from 1992 to 2004. It focuses on ICT products classified in SITC 75, 76 and 77. The empirical results show that Chinese exports had maintained two-digit annual growth during the period. The growth was much higher than the corresponding growth of the overall markets. By 2004, Chinese ICT exports accounted for 26 per cent of the total Japanese imports and 19 per cent of the total imports of the US in ICT products. In addition, the paper investigates whether the rapid growth of Chinese ICT exports crowded out that of other Asian countries: Indonesia, Malaysia, Philippines, Singapore, South Korea and Thailand. The empirical analysis shows that the crowding out effect differs across countries and products. The exports of Singapore and Philippines have been negatively affected by the growth of Chinese exports, but no crowding effect existed at all with Indonesia's exports

Keywords: China, exports, ICT, Asia

JEL classification: F1, O5

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Acronyms

FDI foreign direct investment

ICT information and communication technology

MOC Ministry of Commerce (Beijing)

n.e.s. not elsewhere specified

OECD Organization for Economic Cooperation and Development

SITC standard international trade classification

WTO World Trade Organization

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1 Introduction

In the last two and half decades, exports have been one of the engines driving the Chinese economy to rapid growth. The abundant labour endowment offers China a comparative advantage in labour-intensive products that have been dominating its exports. On the other hand, technology progress, inflows of FDI and the externality associated with international trade have greatly enhanced the production capacity and competitiveness of Chinese industries in relatively high value added products such as high-tech products. This led to dynamic changes in China's comparative advantage and export structure, and as a result, the share of high-tech products in its exports rose substantially. According to reports from China's Ministry of Commerce (2005, 2003), China in 2002 exported high-tech goods valued at US$67 billion, ranging from computers, mobile phones, biotech products, to aerospace equipment. In 2004, high-tech exports more than doubled the 2002 level and jumped to US$166 billion, about 28 per cent of total Chinese exports, representing a significant achievement in high-tech exports. A study by OECD (2006) on the global trade of information and communication technology (ICT) products outlined an even more striking picture. It concluded that China has been not only one of the largest ITC importing countries, but also the largest ICT exporter, exporting in 2004 products valued at US$180 billion, thus exceeding Japan, European Union and the United States, and become the number one exporter of ICT products in the world.

The drastic expansion of Chinese high-tech exports is largely attributed to the global fragmentation of production in high-tech goods. More and more multinational enterprises firms in high-tech industries have optimally allocated their production chains around the world. As a country with a huge potential market, a fast growing economy and almost unlimited labour supply, China has benefited the most from the international production fragmentation. According to statistics, about 88 per cent of the high-tech exports were produced by foreign invested firms in China, suggesting that China has merged as an export platform not only for traditional labour intensive products, but also high-tech goods.

China has been recognized as the world factory of labour intensive-products such as toys, shoes, clothes, etc., and is now emerging as a leading exporter of high-tech goods. High-tech industries are the sources of high-value added jobs. Industrialized countries work to maintain these jobs at home while the developing countries are trying to create more these of employment opportunities in order to improve their income. As more and more Chinese ICT products flow into the world market, an interesting question is whether the rapid growth of Chinese exports in high-tech products have substituted the exports of other countries, in other words, whether these high-tech exports have generated a crowding-out effect on other countries, in particular developing countries.

After China joined the WTO, the impact of its exports on other countries has been a focal point of academic research. Samuelson (2004) argues that the Chinese technology progress in an industry where it initially had no comparative advantage would undermine the welfare of its trading partners, such as the US. Freund and Ozden (2006) examine the impact of China's exports on that of Latin America and Caribbean countries in the US market and note that the growth of Sino exports has led to 2 percentage point drop in the expansion of Mexican exports. Eichengreen, Rhee and Tong (2007) analyse the relationship between exports from China and other Asian countries, and concludes that the crowding-out effect is only evident in consumer goods,

not capital goods. However, Ahearne et al. (2003) note that there exists a positive correlation between the growth of China and other Asian economies. Haddad (2007) argues that the production network centred in China actually promoted intra-regional trade in Asia, and stimulated the economic growth of East Asia.

This paper gives a detailed discussion of the expansion of Chinese ICT exports in two markets—Japan and the US—and examines the impact of Chinese ICT exports on six Asian countries—Indonesia, Malaysia, Philippines, Thailand, Singapore and Korea. It investigates whether the rapid growth of Chinese high-tech crowded out, or enhanced the high-tech exports of other Asian countries. As ICT covers thousands of commodities, for simplicity and consistency, we adopt standard international trade classification (SITC) and concentrate on three product categories: SITC 75 (office machines and automatic data-processing machines), SITC 76 (telecommunications and sound-recording and reproducing apparatus and equipment), and SITC 77 (electrical machinery, apparatus and appliances).

2 Some stylized facts of Chinese ICT exports

In the early 1990s, the availability of China-made ICT products in the US market was very limited, and China's market share was negligible. For instance, in 1992 Sino exports to the US in office machines and automatic data-processing machines, telecommunication equipment and electrical machinery together amounted to US$359 million, or less than 0.5 per cent of the total US imports in these products. However, Chinese exports have maintained a two-digit growth since 1994 with the annual rate of increase far exceeding the overall growth of the US market and that of the other Asian countries also targeting the North American markets.

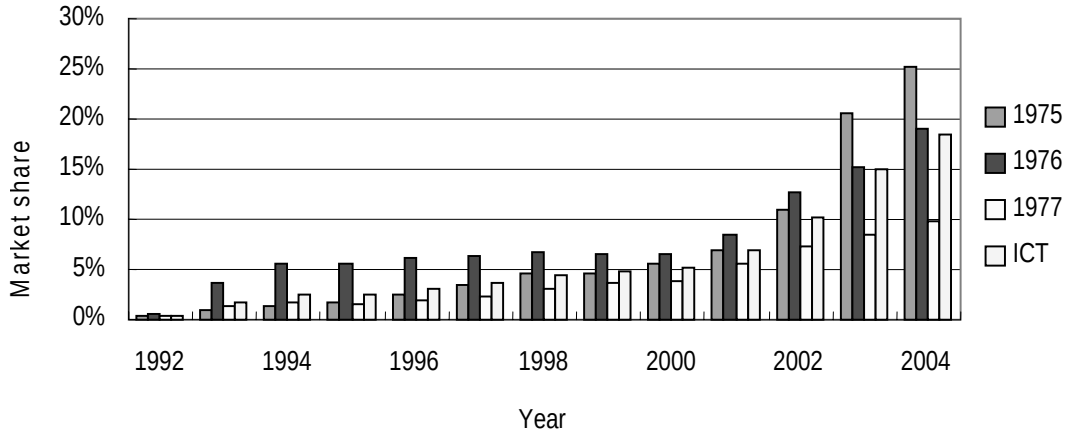
Table 1 summarizes the growth rates of the ITC exports to the US. With the exception of the year 2001, total foreign ICT exports to the US grew every year during the period 1994-2004. In 2000, the total exports rose 25 per cent, the highest increase of the period. In the same year, Sino exports jumped 36 per cent, 11 percentage points higher than the overall growth. In fact, China has been the only country to maintain a higher than the overall market growth each year during the period. The bursting tech-bubble caused domestic ICT demand in the United States to plunge significantly in 2001, reducing total foreign ICT exports to the US by 15.7 per cent. ICT exports to the US from Indonesian, Korea Malaysia, Philippines, Singapore and Thailand also declined substantially, and ICT exports from Korea shrank 28.7 per cent, the biggest drop among the six Asian countries; Indonesian exports dropped 8.7 per cent. The growth momentum of China's ICT exports to the US, however, continued. Even when the overall market demand fell sharply, Sino ICT exports still rose 15 per cent in that year, and as a result, the share of Chinese ICT exports in the US market expanded significantly during the period. By 2004, China's share of total ICT exports, valued at US$54.9 billion, accounted for 18 per cent of total foreign exports to the US. In particular, Chinese exports in office machines and automatic data-processing machines totalled US$26.2 billion, about 25 per cent of the total exports to the US in the category. In telecommunication equipment, China's share reached US$18.5 billion, accounting for 19 per cent, while its share in electrical machinery grew from less than one per cent in 1992 to 10 per cent.

Table 1
Growth of ICT exports to the US in selected Asian countries (%)

	From all countries to US	China	Indonesia	Malaysia	Philippines	Thailand	Singapore	Korea
1994	24.9	68.3	66.4	49.6	36.9	29.9	30.9	29.9
1995	24.0	25.7	3.0	21.2	11.3	13.5	27.9	41.7
1996	4.7	26.5	33.1	2.2	210.4	2.3	12.4	-10.6
1997	11.0	34.9	-9.6	5.4	50.8	27.8	0.3	-6.2
1998	5.5	30.8	-32.8	13.3	22.7	11.8	-5.8	-1.9
1999	15.5	21.8	5.3	28.0	8.4	3.5	2.2	42.0
2000	25.2	36.1	156.7	30.3	10.8	17.3	11.5	39.7
2001	-15.7	13.5	-9.5	-8.6	-26.5	-17.3	-22.3	-28.7
2002	1.5	49.9	2.1	22.2	-2.3	27.3	-1.9	4.3
2003	7.9	56.6	-15.0	4.8	-24.0	-17.5	5.7	8.4
2004	20.7	48.1	33.7	15.6	-42.0	57.3	20.6	30.3

Source: Calculated by the author based on UN Comtrade.

Figure 1
The shares of Chinese ICT exports to the US



Source: Calculated by the author based on UN Comtrade.

Chinese exports showed a similar growth pattern in the Japanese market, but at a much growth rate than in the US market. In the early 1990s, China was not a major player in Japan's ICT market: ICT exports in 1992 totalled only US$340 million, or about 2 per cent of total Japanese ICT imports. China's market share of office machines and automatic data processors was even smaller, less than 1 per cent. However, China's ICT exports grew rapidly in the Japanese market. Unlike in the US, the growth of overall ICT exports to Japan fluctuated substantially from 1992 to 2004: zero in 1997 and -10 per cent in 1998 because of the long-lasting economic stagnation and Asian financial crisis. After the burst of the tech-bubble, Japanese imports decreased for two consecutive years in 2001-02, with a negative growth rate of 10.2 per cent and 4 per cent, respectively. Examining the performance of China's ICT to Japan, we find that it had not been affected at all by weakening Japanese demand, and China is only country to have been able to maintain a positive annual growth every year in its ICT exports to Japan from 1992 to 2004; the rate of ICT export growth has been higher than the overall market. In spite of the sharp decrease in demand during the years 2000-01, China's ICT exports to Japan actually grew 31 per cent and 36.6 per cent, respectively. Among the six Asian countries, China was the only one which recorded with positive growth in

2000. The exports from the other six countries under review[1] experienced a decrease, ranging from 1.7 to 24.9 per cent. Even though the share of ICT exports from the Philippines to Japan grew 8.2 per cent, it was much smaller in comparison to China.

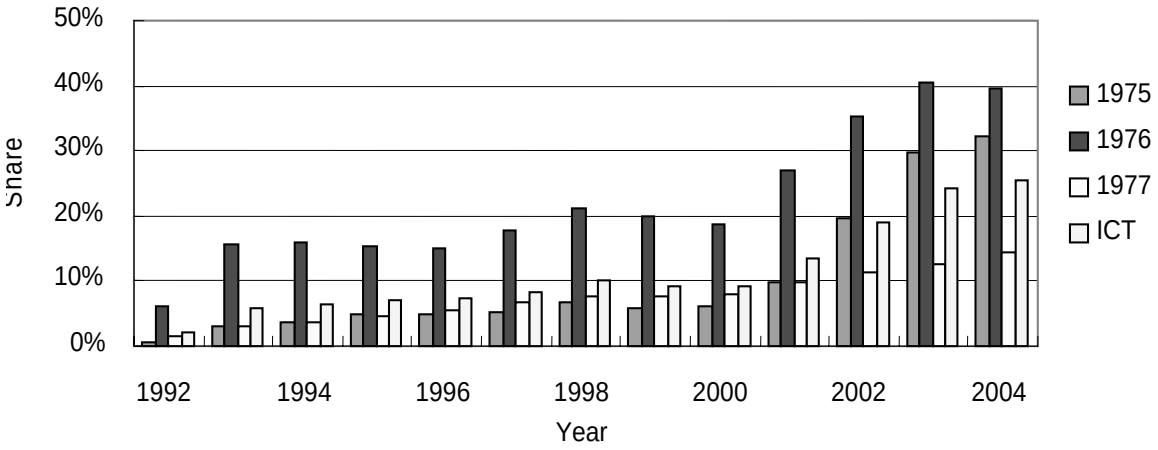
Figure 2 shows the market shares of China's exports in the SITC 75-77 categories from 1992 to 2004. The figure indicates highlights the rapid growth of China's market shares: by 2004, it had become the largest exporter of ICT products to Japan, and its exports defined by the SICT 75-77 categories jumped to US$21 billion, accounting for more than 25 per cent of foreign exports to Japan. Similarly, telecommunication equipment exports totalled US$6.4 billion, bringing the market share to 40 per cent, the highest of the three major categories. In office machines and automatic data processors, China's exports grew to US$8.7 billion, about 32 per cent of total foreign exports to Japan.

Table 2
Growth of ICT exports to Japan by selected Asian countries (%)

	From all countries	China	Indonesia	Malaysia	Philippines	Thailand	Singapore	Korea
1994	40.0	56.3	38.8	45.5	26.5	44.4	67.7	52.2
1995	64.4	77.2	125.5	60.6	87.4	51.2	66.6	62.5
1996	18.9	25.2	105.2	19.7	207.3	12.0	12.7	-17.2
1997	0.2	14.3	11.7	-3.9	35.6	0.1	-12.1	-6.3
1998	-10.3	8.2	24.5	-3.3	11.2	-3.1	-16.5	-18.2
1999	22.5	14.0	8.6	40.0	12.8	12.7	10.4	64.5
2000	41.0	39.6	137.9	34.0	23.1	49.5	25.1	63.3
2001	-10.2	31.0	-12.5	-7.6	-4.8	-1.7	-8.9	-24.9
2002	-4.0	36.6	-21.4	-16.3	8.2	-2.4	-0.3	0.6
2003	15.2	44.8	20.2	-7.0	11.7	18.4	5.6	19.6
2004	21.4	28.8	28.6	13.6	-14.0	32.0	24.0	22.0

Source: Calculated by the author.

Figure 2
Shares of Chinese ICT exports to Japan



Source: Calculated by the author.

1 Indonesia, Malaysia, Thailand, Philippines, Korea and Singapore.

3 Testing for the crowding-out effect of China on other Asian countries

Without a doubt, China has emerged as a major exporter of ICT products to Japan and the US. Rising domestic demand in the importing countries has definitely fuelled the rapid expansion of Sino exports. On the other hand, the growth of Chinese exports to both Japan and the US have exceeded by far the overall growth of these two markets, and it is likely that China has gained market shares at the costs of the other exporting countries also attempting to target the same markets. For countries competing with China in the global market, its fast expansion of exports has been considered as a threat. Whether China's exports have generated a crowding-out effect has become a critical empirical question. To test for the crowding-out effect in the ICT markets of Japan and the US, we examine the relationship between the market share of Chinese exports to a particular country in a give category as well as that of other exporters. For doing so, we consider the following model:

$$Y_{it} = \alpha + \beta_1 C_{it} + \beta_2 D_{75} C_{it} + \beta_3 D_{76} C_{it} + \varepsilon_{it} \quad (1)$$

where Y_i denotes the market share of a typical country competing with China for the ICT markets of Japan/the United States and C_i represents the share of Chinese exports. The subscript i indicates product categories, which are defined by three digits of SITC from 751-778. D_{75} and D_{76} are two dummy variables, designed to measure product specific effects. They are defined as

$$D_{75} = \begin{cases} 1, & \text{if prodcut } i \text{ belongs to SITC 75} \\ 0, & \text{otherwise.} \end{cases}$$

$$D_{76} = \begin{cases} 1, & \text{if product } i \text{ belongs to SITC 76} \\ 0, & \text{otherwise.} \end{cases}$$

According to the definitions, if product i belongs to SITC 77, the value of D_{75} and D_{76} will be zero. Therefore, the coefficient β_1 measures the marginal impact of China's market share on that of the underlying countries which compete with China in SITC 77 products. If product i belongs to SITC 75, the value of D_{76} will be zero and $(\beta_1 + \beta_2)$ measures China's impact on the market shares of the competing countries in the SITC 75 market. Similarly, $(\beta_1 + \beta_3)$ indicates the marginal effect in the market of SITC 76. If crowding-out effects exist, these coefficients should be negative and statistically significant. To derive the t-statistics of $(\beta_1 + \beta_2)$ and $(\beta_1 + \beta_3)$, we transform the Equation (1) into a new form for convenience.

Let $\delta = \beta_1 + \beta_2$ and $\theta = \beta_1 + \beta_3$, then, Equation (1) can be re-written as

$$Y_{it} = \alpha + \beta_1 (C_{it} - D_{75} C_{it} - D_{76} C_{it}) + \delta D_{75} C_{it} + \theta D_{76} C_{it} + \varepsilon_{it} \quad (2)$$

Chinese ICT exports may be complementary to those of some countries, but substitutes for those of others. In order to identify country-specific effects, we estimate the above equation for each of the six countries competing with China for the markets of Japan and the US, respectively. Product i's market share in each country is defined as the ratio of its export of the said product to Japan/the US to these countries' total imports of this project. The sample used for the estimations is based on 12 different ICT products, which are defined by 3-digits SITC from SITC 751 to SITC 778. The sample covers the period of 1992 to 2004.

Table 3 summarizes the estimates for the six Asian countries in the US market. For Indonesia, the estimated coefficients of both β_1 and δ are insignificant, suggesting that the market shares of Indonesian exports in SITC 77 (electrical machinery and appliances) and SITC 75 (office and data-processing machines) are not correlated with those of China. Thus, China did not crowd out Indonesia with respect to ICT exports in the US market. It is worth mentioning that the estimated coefficient of θ, which measures the marginal effect in SITC 76 (telecommunications and sound recording equipment), is 0.07 and significant at 1 per cent, indicating that Indonesia's market has a positive relationship with that of China. While it may not appropriate to conclude that in the markets of the US, China's ICT exports enhanced those of Indonesia, this may, however, imply that the ICT exports of the two countries are complementary rather than competitive, because of international production fragmentation. For Malaysia, the estimated coefficient of β_1 is -0.26 and statistically significant at 5 per cent, suggesting that a 1 percentage point increase in the market share of Chinese exports to the US in SITC 77 will give rise to 0.26 percentage point decrease in the market share of Malaysian exports. In other words, the expansion of Chinese SITC 77 exports to the US actually crowded-out Malaysia's exports. On the other hand, the estimated coefficient of θ is 0.29 and statistically significant at 5 per cent, implying as the market share of Chinese SITC 76 products rises 1 percentage point, Malaysia' market share will grow 0.29 percentage points. The rapid growth of Chinese exports to the US in the SITC 75 category has yet negatively affected Malaysian exports. Empirical results show that no statistically significant relationship exists between the market shares of the two countries in SITC 75 products.

Table 3
Crowding-out effect of Chinese ICT exports in the US markets

	Constant	β_1 (SITC 77)	δ (SITC 75)	θ (SITC 76)	R^2
Indonesia	0.01	-0.02 (-1.42)	-0.01 (-1.05)	0.07*** (6.43)	0.27
Malaysia	0.04	-0.26*** (-4.15)	0.06 (1.05)	0.29*** (5.14)	0.28
Philippines	0.02	-0.07** (-2.54)	-0.05* (-1.76)	-0.12*** (-3.76)	0.10
Thailand	0.03	-0.08*** (-2.90)	0.01 (0.54)	-0.05* (-1.82)	0.07
Singapore	0.07	-0.38*** (-4.37)	-0.00 (-0.02)	-0.26*** (-3.25)	0.14
Korea	0.05	0.12* (1.77)	-0.07 (-1.07)	-0.00 (-0.03)	0.034

Note: The numbers in parentheses are t-statistics; *, **, *** statistically significant at 10%, 5% and 1% level. Sample size = 156.

According to the empirical results reported in Table 3, Sino ICT exports affect those of the Philippines, Thailand and Singapore in almost all categories. The market shares of the Philippines in SITC 75, 76 and 77 exports are all negatively correlated with those of China. The estimates indicate that, among the six Asian countries, Philippines is the only country that has been affected by China's exports to the US market in all ICT categories. Specifically, a 1 percentage point increase in China's market share of telecommunication and sound equipment (classified under SITC 76) will lead to 0.12 percentage point decrease in that of the Philippines. When China gains a 1 percentage point advantage in SITC 77 exports, the Filipino share will decrease 0.07 percentage points.

Singapore's ICT exports to the US were negatively affected by those of China, except in office and data-processing market. The estimates shows that if China's market share of electrical machinery and appliances (defined by SITC 77) increases by 1 percentage point, this can be expected to reduce Singapore's share by 0.36 percentage points, the severest decrease among the six countries. Also, with regard to telecommunication and sound equipment (i.e., SITC 76 products), Singapore will lose 0.26 percentage points if China's share grows one percentage point. Compared with other Asian countries, the expansion of China's exports affected most severely Singapore's share in the US market.

The market shares of Thailand in SITC 77 and 77 also decreased as China's exports expanded. But the degree of the crowding-out effect on Thailand is relatively small, as it will lose 0.08 percentage points of its market share in SITC 77 products in relation to China's increasing share of 1 percentage point, and 0.05 percentage point in SITC 76 for every 1 percentage point gain in the Chinese share.

In the case of Korea, the estimates of δ and θ are negative, but insignificant, suggesting that the country's market shares of SITC 75 and 76 exports are not affected by the exports of its giant neighbour. However, the estimate of β_1, which measuring the marginal effect in the category of SITC 77 is 0.12 and statistically significant at 10 per cent level, suggesting that the exports of these countries in the US market may be complementary.

The empirical results based on the Japanese market show similar results; these are summarized in Table 4. First of all, the estimates suggest that China's ICT exports to Japan do not crowd out Indonesian ICT products. On the contrary, the market shares of Indonesia in SITC 77 and SITC 76 show a significantly positive relation with those of China. The estimated coefficients of β_1 and θ for Indonesia are 0.07 and 0.08, respectively. Both are statistically significant at the 1 per cent level, suggesting that the market shares of both of these countries rose simultaneously. This is a very interesting phenomenon, and it is worth investigating further as to why Indonesia also gained market shares while China grew at much faster rate than the overall market. Unlike in the US market, we find no evidence that Chinese exports crowded-out Thai products either. Moreover, in the SITC 77 market, the statistic result suggests that a positive relationship exists between the exports of the two countries. The estimated coefficient of β_1 for Thailand is 0.18 and significant at the 1 per cent level, implying that Thailand's market share in SITC 77 products will increase 0.18 percentage points as the market share of China increases 1 percentage point. In the Japanese market, Singapore

Table 4
The crowding-out effect of Chinese ICT exports in the Japanese market

	Constant	β_1 (SITC 77)	δ (SITC 75)	θ (SITC 76)	R^2
Indonesia	0.01	0.07***	-0.00	0.08***	0.20
		(3.13)	(-0.22)	(5.51)	
Malaysia	0.09	-0.32***	-0.03	0.48***	0.44
		(-3.51)	(-0.59)	(7.61)	
Philippines	0.05	0.03	-0.06**	-0.07**	0.08
		(0.66)	(-2.29)	(-2.23)	
Thailand	0.06	0.18***	0.02	0.03	0.06
		(3.14)	(0.73)	(0.81)	
Singapore	0.10	-0.36***	-0.16***	-0.15***	0.27
		(-6.68)	(-5.50)	(-4.14)	
Korea	0.10	-0.17**	-0.08**	-0.02	0.06
		(-2.50)	(-2.19)	(-0.35)	

Note: The numbers in parentheses are t-statistics; *, **, *** statistically significant at 10%, 5% and 1% levels. Sample size = 156.

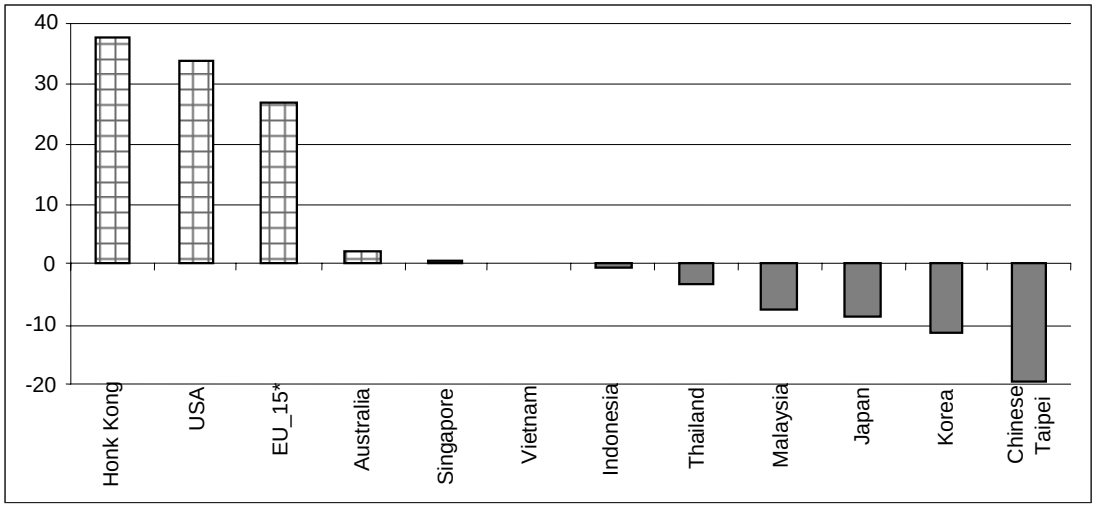
is the only country that loses market shares in all SITC 75-77 categories when China's share increases. Its market share of SITC 77 products will decrease 0.36 percentage points in relation to an increase of 1 percentage point in China's market share. Further, for every one percentage point gain by China, Singapore will lose 0.16 and 0.15 percentage points in its market shares of STIC 75 and 76 products, respectively.

For Malaysia, the impact of Chinese exports on three product categories differs substantially. In the SITC 77 market (office and data-processing machines), the estimate indicates that Malaysian market share will shrink 0.32 percentage points if China gains one percentage point. However, in SITC 76 (telecommunications and sound recording equipment), the market shares of both countries expand. Specifically, the estimate indicates that 0.48 percentage point increase in Malaysia's market share in response to China's share increasing by 1 percentage points. The ICT exports of both Philippine and Korea exports are affected negatively by Chinese exports. For the Philippines, its exports to Japan in SITC 75 and 76 groups are affected by corresponding exports from China. Its market share will decrease 0.06 and 0.07 percentage points, respectively, in response to a 1 percentage point increase by China in each product category. Korean exports to Japan in the SITC 77 and 75 groups have a negative correlation with those of China. The estimates suggest that the Korean share will decrease 0.17 percentage points in electrical machinery and appliances and 0.08 percentage points in office and data-processing machines if China gains a 1 percentage point advantage in the corresponding markets.

Empirical analysis indicates that the impact of China's ICT exports on the six Asian exporters differ across countries and products. Singapore and Philippines suffered the most when Chinese exports grew. These two countries were also affected more severely by China's expansion into the markets of both Japan and the US. The Korean and Malaysian exports were also adversely affected. Intensified competition from China's rising ICT exports may be one of the reasons for the shrinking market shares of these Asian countries. The relocation of production capacity into China by the multinational enterprises of these countries may be another reason. China has become an integral part of the production network in Asia, and many multinational enterprises have utilized

China as their export platform to global markets. They import parts and components in to China, assemble these intermediate inputs there, and finally export the final products to the rest of world. Thus, the diminishing market shares of these countries, even in association with the expansion of Chinese exports, may be the result of the relocation of production rather than the crowding-out effect. In fact, while China enjoys a huge ICT trade surplus with the US and Japan, it also experiences deficits with respect to Korea, Indonesia, Malaysia and Thailand (Figure 3). The rising Chinese exports apparently affected the exports of these countries negatively in the third market, but enhanced their exports to China. The effect of rapid Chinese exports on a particular country should be evaluated in a more comprehensive framework.

Figure 3
The balance of Chinese ICT trade with its major partners



Source: OECD database.

4 Concluding remarks

In China ICT exports have experienced rapid growth since the early 1990s, and market shares in both Japan and the US have risen sharply. By 2004, China's ICT exports to Japan reached 26 per cent of its total imports of ICT products, up from a mere 2 per cent in 1992. In North America, Chinese exports also showed impressive growth and accounted for 19 per cent of total foreign ICT exports to the US in 2004, compared to less than 1 per cent in 1992.

The impact of rising Chinese ICT exports on the selected six Asian countries vary across countries and product categories. Our empirical analysis shows that the rapid growth of Chinese exports had an adverse effect on Singapore, Korea and Philippines, as the market shares of these countries decreased substantially as China's share increased. For Malaysia and Thailand, the impact is unambiguous and is related to the specific product categories: Indonesia's ICT exports, on the other, expanded together with those of China.

Given that many multinational companies have relocated their production capacity into China and most of the Chinese ICT exports are attributed to foreign invested firms, the shrinking market shares associated with the rising presence of Chinese exports in the

markets of Japan and the US may be the result of the multinationals' relocation process rather than intensified competition from Chinese exports. Further comprehensive studies on the issues are needed.

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Appendix: Standard International Trade Classification, Revision 3, (SITC, Rev 3)

75: Office machines and automatic data-processing machines

751 Office machines

752 Automatic data-processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, n.e.s.

759 Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines falling within groups 751 and

76: Telecommunications and sound-recording and reproducing apparatus and equipment

761 Television receivers (including video monitors and video projectors), whether or not incorporating radio-broadcast receivers or sound- or video-recording or reproducing apparatus

762 Radio-broadcast receivers, whether or not incorporating sound-recording or reproducing apparatus or a clock

763 Sound recorders or reproducers; television image and sound recorders or reproducers; prepared unrecorded media

764 Telecommunications equipment, n.e.s., and parts, n.e.s., and accessories of apparatus falling within division

77: Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)

772 Electrical apparatus for switching or protecting electrical circuits or for making connections to or in electrical circuits (e.g., switches, relays, fuses, lightning arresters, voltage limiters, surge suppressors, plugs and sockets, lamp-holders and junction boxes); electrical resistors (including rheostats and potentiometers), other than heating resistors; printed circuits; boards, panels (including numerical control panels), consoles, desks, cabinets and other bases, equipped with two or more apparatus for switching, protecting or for making connections to or in electrical circuits, for electric control or the distribution of electricity (excluding switching apparatus of subgroup 764.1)

773 Equipment for distributing electricity, n.e.s.

775 Household-type electrical and non-electrical equipment, n.e.s.

776 Thermionic, cold cathode or photo-cathode valves and tubes (e.g., vacuum or vapour or gas-filled valves and tubes, mercury arc rectifying valves and tubes, cathode-ray tubes, television camera tubes); diodes, transistors and similar semiconductor devices; photosensitive semiconductor devices; light-emitting diodes; mounted piezoelectric crystals; electronic integrated circuits and microassemblies; parts thereof

778 Electrical machinery and apparatus, n.e.s.