
Will Taiwan Be Marginalized by China?*

Tain-Jy Chen

Department of Economics
National Taiwan University
21 Hsu-Chow Road
Taipei 100,
Taiwan
tainjy@ms.cc.ntu.edu.tw
and
Chung-Hua Institution for
Economic Research
21 Hsu-Chow Road
Taipei 100
Taiwan
tainjy@mail.cier.edu.tw

Abstract

This paper shows that Taiwan has benefited immensely from China's accession to the World Trade Organization, in terms of the expansion of its exports to China, owing to Taiwan's institutional and structural advantages. Behind the rapid expansion of trade and investment, however, Taiwan runs a high risk of hollowing out its domestic industries, a risk that is manifested in a decline in exports, a loss of control over logistics functions that serve the export industry, and the relocation of research and development activities to China. Taiwan is facing an uphill battle of keeping its capital- and knowledge-intensive industries at home while attempting to take advantage of low-cost Chinese labor to retain its position in the world market.

I. Taiwan's trade with China

After China adopted its Open Door Policy in 1979, Taiwan's trade with the mainland increased dramatically. Nevertheless, the Taiwanese government did not legalize trade with China until 1986, and direct shipping between Chinese and Taiwanese ports remains prohibited. Taiwan exported a total of US\$24,461 million in goods to China in 2001, which accounted for 19.6 percent of Taiwan's total exports and made China one of the largest consumers of Taiwanese exports (second only to the United States, which accounted for 22.5 percent of Taiwan's exports). With the accession of China and Taiwan to the World Trade Organization at the end of 2001, bilateral trade expanded even further. In the first 6 months of 2002, Taiwan's exports to China reached US\$14,841 million, a

* This is a revised version of a paper presented at the Asian Economic Panel meeting, 8–9 October 2002, at Columbia University, New York.

Table 1. Taiwan's exports and imports to its major trading partners (US\$ million)

Year	Exports				Imports			
	United States	China ^b	Japan	ASEAN-7	United States	China ^b	Japan	ASEAN-7
1995	26,407 (23.7)	17,898 (16.0)	13,157 (11.8)	14,932 (13.4)	20,770 (20.1) ^b	3,091 (3.0)	30,265 (29.2)	10,492 (10.1)
1996	26,866 (23.2)	19,148 (16.5)	13,659 (11.8)	15,397 (13.3)	19,971 (19.5)	3,060 (3.0)	27,492 (26.9)	11,147 (10.9)
1997	29,551 (24.2)	20,518 (16.8)	11,691 (9.6)	16,182 (13.3)	23,233 (19.0)	3,915 (3.4)	29,021 (25.4)	13,330 (11.6)
1998	29,376 (26.6)	18,380 (16.6)	9,324 (8.4)	11,677 (10.6)	19,678 (17.8)	4,111 (3.9)	27,000 (25.8)	12,959 (12.4)
1999	30,901 (25.4)	21,221 (17.5)	11,900 (9.8)	14,035 (11.5)	19,692 (13.3)	4,526 (4.1)	30,590 (27.6)	14,434 (13.0)
2000	34,814 (23.5)	26,144 (17.6)	16,599 (11.2)	18,077 (12.2)	25,125 (17.9)	6,223 (4.4)	38,557 (27.5)	20,185 (14.4)
2001	27,655 (22.5)	24,061 (19.6)	12,759 (10.4)	14,600 (11.9)	18,229 (17.0)	5,902 (5.5)	25,848 (24.1)	15,955 (14.9)
2002 ^a	12,872 (20.7)	14,841 (23.8)	6,140 (9.9)	7,460 (12.0)	8,601 (16.3)	3,551 (6.7)	12,605 (23.9)	8,433 (16.0)

Source: Board of Foreign Trade, Taiwan, Analysis on Trends of Cross-Strait Trade (in Chinese), August 2002.

Note: Figures in parentheses represent the percentage of the total for the year.

a. Data cover January–June 2002.

b. Exports to China are estimated by the Board of Foreign Trade by adding together the following three figures: (1) exports to China registered by the Taiwan Customs Department; (2) exports transhipped to China via Hong Kong, registered by the Hong Kong Customs Department; and (3) 80 percent of the difference between Taiwan's customs data and Hong Kong's customs data on Taiwan's exports to Hong Kong. Statistics on imports from China are collected by the Taiwan Customs Department.

28.8 percent increase over the same period a year earlier. China consumed a whopping 23.8 percent of Taiwanese exports, making it the number-one export destination for Taiwanese products and exceeding the U.S. share, which shrank to 20.7 percent (table 1). If exports to Hong Kong are included, Taiwanese exports to "greater China" reached US\$18,683 million in the first half of 2002, accounting for 30 percent of Taiwan's total exports, 10 percentage points more than the share of Taiwan's exports that went to the United States.

It is clear that Taiwan has benefited from China's WTO entry and its trade liberalization measures more than any other WTO member. In the first half of 2002, China's overall imports increased by 10.4 percent from the previous year. Of all its major import sources, imports from Taiwan have expanded the most. According to Chinese customs statistics, such imports have increased 33.3 percent from the previous year (table 2). As a result, Taiwan's share in China's import market has risen to 13.1 percent, second only to Japan's 18.0 percent (comparing single countries' import shares only).

There are at least three reasons for the expansion of Taiwan's share of China's import market since China's WTO entry. First, Taiwan has gained more from China's

Table 2. China's major import sources, January–June 2002

Import source	Import value (US\$ billion)	Year-on-year increase (%)
Hong Kong	4.90	9.3
Japan	23.15	10.1
ASEAN	13.15	16.1
South Korea	12.23	6.4
Taiwan	16.84	33.3
European Union	17.50	2.0
Russia	4.10	16.6
Canada	1.70	-12.4
United States	12.10	-3.3
Australia	2.60	10.5
Total	128.65	10.4

Source: China Customs Department, www.moftec.gov.cn/tjzl.shtml

liberalization of import controls than other economies, mainly because it had good experience supplying materials to China and had good knowledge about China's quota and licensing systems. In accordance with its WTO commitments, China cut its average tariff from 15 percent to 12 percent on 1 January 2002. This tariff concession provides few benefits for Taiwan, however, because its main exports to China are intermediate goods and components used in export processing, which are effectively exempted from tariffs under China's customs duty drawback system. The more significant barriers to Taiwanese exports into China are the various forms of import controls, including quotas and import licensing requirements, that China imposes.

Upon WTO accession, China promised to eliminate all import quotas by 2005 and to make its import licensing procedures transparent and automatic. With the exception of quotas on a few items (which were removed immediately), most quotas will be removed only gradually, by a 15 percent increase of the quota amount each year, until they are completely phased out in 2005. This liberalization includes quotas for the most sensitive products, such as automobiles, motorcycles, oil, and plastic and rubber products. China has not yet lived up to its promise of establishing a transparent quota allocation system, however, nor has it made import licensing an automatic process.

The ambiguity of the current Chinese system benefits Taiwanese exporters, who have learned to manage it better than their competitors. Taiwan had been the chief supplier of many quota-controlled items prior to China's WTO entry. For example, Taiwan had a 37.6 percent share in China's import of cathode-ray tubes (CRTs). Table 3 provides the details on some of the quota-controlled items for which Taiwan accounted for a significant import share. The gradual removal of the quotas, rather than their immediate elimination, has allowed the initial suppliers, such as the Taiwanese producers, to cling to their market share.

Table 3. Taiwan's market share of quota-restricted items in China, 1999

	Total imports of China (US\$ million)	Taiwan's exports to China (US\$ million)	Proportion
Color CRTs	1,576	593	37.6
Plastic molding	256	79	30.7
Metal molding	285	79	27.5
Polyester staple fiber	383	74	19.3
Polyester chips	413	120	29.1
Polyester filaments	279	50	17.8
Motorcycle parts	195	47	24.1
Machine centers	116	40	34.7

Source: Board of Foreign Trade, Taiwan, Analysis on Trends of Cross-Strait Trade (in Chinese), May 2000.

Note: A machine center is a machine tool capable of performing multiple functions.

The second reason for Taiwan's gains in China's import market is the increasing value of its low-priced components and parts to indigenous Chinese manufacturers. As a result of WTO accession, these indigenous, mostly state-owned manufacturers of consumer electronics, automobiles, motorcycles, and the like find themselves facing increasing competitive pressure from foreign imports. They are oriented toward their local markets and have long been protected by high tariffs, quotas, and a value-added tax (VAT) that discriminates against imports. WTO entry has lowered the protective wall somewhat, and these indigenous firms have now discovered that Taiwanese components and parts are an effective weapon in the battle against imports. These parts include CRTs used in television receivers, compressors used in air conditioners, and various automobile and motorcycle parts. Low-priced Taiwanese parts enable Chinese firms to compete with Japanese and South Korean rivals with low prices, and therefore many strategic alliances have been formed between Taiwanese parts suppliers and Chinese manufacturers of final goods.

The third reason behind Taiwan's gains in China's import market is the increasing level of Chinese investment by Taiwanese firms. Most obvious is the massive investment by Taiwanese notebook personal computer (PC) manufacturers since the Taiwanese government's easing of the regulations relating to foreign direct investment (FDI) in China in 2001. With this surge in investment, China's production of notebook PCs has risen from virtually zero to 1.7 million sets in 2001. In 2002, notebook PCs made in China by Taiwanese transplants reached 7.0 million sets. Along with the relocation of notebook PC production, Taiwan's exports of liquid crystal display (LCD) panels and integrated circuit (IC) devices, which are key components of notebook PCs, have also increased dramatically. As table 4 shows, Taiwan's exports of LCD devices to China reached US\$812 million in the first half of 2002, a tenfold increase over the same period a year earlier. This remarkable increase also gave Taiwan a dominant 47.3 percent share of the Chinese LCD import market, surpassing that of both Japan and South Korea. FDI-led exports were also evident in the areas

Table 4. Market share of selected imports by China (US\$ million)

Item (HS code)	Import source					Total
	Japan	Taiwan	Malaysia	Hong Kong	South Korea	
Integrated circuits (8524)						
January–June 2001	1,948 (24.7)	1,268 (16.1)	702 (8.9)	475 (6.0)	634 (8.0)	7,898
January–June 2002	2,298 (21.7)	2,281 (21.6)	1,403 (13.3)	801 (7.6)	768 (7.3)	10,583
LCD devices (9013)						
January–June 2001	215 (37.9)	74 (13.0)	—	57 (10.1)	41 (7.2)	567
January–June 2002	288 (16.8)	812 (47.3)	—	47 (2.8)	430 (25.0)	1,717
PCs and components (8473)						
January–June 2001	502 (16.1)	374 (12.0)	296 (9.5)	—	—	3,110
January–June 2002	695 (15.6)	724 (16.3)	343 (7.7)	—	—	4,451
Polyethylene (3903)						
January–June 2001	164 (12.1)	518 (38.2)	—	79 (5.9)	317 (23.4)	1,355
January–June 2002	181 (11.9)	627 (41.2)	—	89 (5.9)	351 (23.1)	1,520
Diodes, transistors, and semiconductors (8541)						
January–June 2001	544 (32.2)	285 (16.9)	92 (5.5)	—	131 (7.7)	1,689
January–June 2002	748 (28.8)	405 (15.6)	179 (6.9)	—	178 (6.8)	2,600
Synthetic textiles (5407)						
January–June 2001	283 (25.5)	372 (33.5)	8 (0.7)	85 (7.6)	305 (27.5)	1,110
January–June 2002	217 (23.2)	368 (39.4)	11 (1.2)	69 (7.3)	218 (23.3)	936
Printed circuit boards (8534)						
January–June 2001	245 (27.8)	159 (18.0)	—	67 (7.6)	57 (6.4)	881
January–June 2002	255 (23.9)	302 (28.3)	—	89 (8.4)	97 (9.1)	1,068
Coated or galvanized steel products (7210)						
January–June 2001	306 (37.5)	187 (22.9)	—	—	197 (24.1)	816
January–June 2002	412 (40.6)	288 (28.4)	—	—	191 (18.8)	1,016
Machinery (8479)						
January–June 2001	652 (34.2)	223 (11.7)	—	—	170 (9.0)	1,905
January–June 2002	754 (34.9)	281 (13.0)	—	—	97 (4.5)	2,161
Cold-rolled steel products (7209)						
January–June 2001	191 (20.2)	210 (22.2)	—	—	211 (22.4)	944
January–June 2002	200 (18.5)	254 (23.5)	—	—	176 (16.3)	1,080
Polypropylene (3907)						
January–June 2001	—	—	—	—	—	799
January–June 2002	181 (18.2)	239 (24.1)	—	—	—	991

Source: Board of Foreign Trade, Taiwan, Analysis on Trends of Cross-Strait Trade (in Chinese), August 2002.

Note: Figures in parentheses represent the percentage of the total for the period.

Table 5. Taiwan's major exports to China, by industry (US\$ million)

	HS code	January–June 2001			January–June 2002		
		Value (US\$ million)	Share A (%)	Share B (%)	Value (US\$ million)	Share A (%)	Share B (%)
Electrical products	85	2,588	18.3	22.5	4,665	26.5	31.4
Machinery and parts	84	1,872	14.9	16.2	2,300	4.1	15.5
Plastic materials	39	1,472	11.2	12.8	1,677	45.5	11.3
Steel	72	739	41.4	6.4	1,047	53.8	7.1
Photo-electronic and camera parts	90	297	41.4	2.6	613	32.0	4.1
Synthetic-fiber filaments	54	558	20.0	4.8	582	37.1	3.9
Industrial textile	59	435	33.0	3.8	403	49.5	2.7
Organic chemicals	29	388	48.8	3.4	382	52.6	2.6
Copper and products	74	278	50.2	2.4	315	49.6	2.1
Synthetic-fiber staples	55	257	45.6	2.2	266	38.1	1.8
Subtotal		8,884	33.0	77.1	12,251	—	82.5
Total exports to China		11,523	—	100.0	14,841	—	100.0

Source: Board of Foreign Trade, Taiwan, Analysis on Trends of Cross-Strait Trade (in Chinese), August 2002.

Note: Share A is the share of Taiwan's total exports accounted for by exports to China by each industry. Share B is the share of Taiwan's total exports to China accounted for by each industry.

of electrical products, machinery and parts, plastic materials, photo-electronic devices, and synthetic fibers, products that constitute the mainstay of Taiwanese exports to China (see table 5).

2. Taiwanese investment in China

Taiwan has been the second-largest investor in China since China opened its doors to foreign capital in 1979. Although Hong Kong is officially recognized as the leading investor (in terms of incoming capital), a large proportion of this investment is known to originate from other countries. Taiwan's investment, meanwhile, may be grossly underestimated, because some investment is known to pass through off-shore tax havens such as Bermuda and the Virgin Islands. Taiwanese investors' enthusiasm for investment in China has not waned, despite the restrictions the Taiwanese government has placed on such investment.

Before China emerged as a major attraction for foreign capital, Taiwan's overseas investment had been directed mainly toward Southeast Asia. From 1986 to 1990, Southeast Asia was the major recipient of Taiwan's outgoing capital, but the pendulum swung toward China in the 1990s. Table 6 provides details of Taiwanese outward investment into China and the ASEAN-6 countries (Thailand, Malaysia, the Philippines, Indonesia, Singapore, and Vietnam). According to host country statistics, up to 1991 Taiwan had invested a total of US\$13.8 billion in ASEAN-6 countries, compared with a total investment of US\$2.8 billion in China; however, China has outpaced the ASEAN-6 countries in attracting Taiwanese capital every year since

Table 6. Taiwan's direct investment in China and ASEAN-6 countries (US\$ million)

	China		ASEAN-6			
	Taiwanese statistics		Chinese statistics		Number of cases	Value of investment (US\$ million)
	Number of cases	Value of investment (US\$ million)	Number of cases	Value of investment (US\$ million)		
~1991	237	174	3,446	2,783	2,771	13,772
1992	264	247	6,430	5,543	279	2,007
1993	1,262 (8,067)	1,140 (2,028)	10,948	9,965	249	1,170
1994	934	962	6,247	5,395	375	4,975
1995	490	1,093	4,778	5,777	433	4,224
1996	383	1,229	3,184	5,141	380	4,337
1997	728 (7,997)	1,615 (2,720)	3,014	2,814	337	4,805
1998	647 (643)	1,519 (515)	2,970	2,982	387	1,287
1999	488	1,253	2,499	3,374	372	1,964
2000	840	2,607	3,108	2,293	475	1,311
2001	1,186	2,784	4,214	2,980	371	1,362
2002 ^a	—	—	—	—	160	190
Cumulative total	24,160	19,887	50,838	49,050	6,583	41,394

Sources: Taiwanese statistics are from Statistics on Overseas Chinese & Foreign Investment, Outward Technical Cooperation, Indirect Mainland Investment, Guide of Mainland Industry Technology, Ministry of Economic Affairs, ROC. Chinese statistics are from Almanac of China's Foreign Economic Relations and Trade. ASEAN statistics are collected from the host country government investment authorities, available at www.iidc.gov.tw/winter.html

Note: Numbers in parentheses are current investments plus investments made in earlier years but reported in the current year. a. January to June statistics.

1991, with the single exception of 1997. The margin of difference has been widening since the 1997–98 financial crisis, from which the Southeast Asian countries have not yet fully recovered.

Table 6 shows that although the cumulative amount of Taiwan's investment in China until June 2002 is close to the total investment in ASEAN-6, the number of Taiwanese investment projects is overwhelmingly greater in China than in the ASEAN-6. Thus the amount of Taiwanese capital invested per project in China is much smaller than that invested in Southeast Asia. According to Chinese statistics, per-project investment in China stands at US\$0.97 million, compared with US\$6.29 million for Southeast Asia. This suggests that China is more attractive to Taiwan's small and medium-sized enterprises (SMEs), which are the major sources of Taiwanese foreign investment. In this regard, China's culture and language are significant advantages. Most Taiwanese SMEs lack the language skills and the ability to cope with foreign business cultures and therefore tend to prefer China as a location for business expansion, for relocation of product lines, or for other investment activities.

China has been more successful than Southeast Asia in attracting FDI for several other institutional reasons. First, China offers tax incentives to foreign investors that are more attractive than those offered by Southeast Asian countries. Although the official tax rate on business income in China is 33 percent, foreign-invested enter-

prises pay an effective tax rate of only 12 percent of their pretax profits, which is much lower than the effective tax rate of 27 percent assessed on indigenous Chinese enterprises (Tsoi and Su 2001). Export-oriented foreign enterprises enjoy further tax benefits through exemption from the VAT, which is normally 17 percent. Foreign enterprises are also exempted from the "urban construction surtax," which is normally 7 percent of the VAT, and from the business transaction tax (if the enterprise is subject to such tax, as are, for example, businesses in the service sector). Typical of many Southeast Asian countries, China offers a tax holiday package, which reduces business income tax for up to 10 years, together with an exemption from customs duties on imported machinery and a duty drawback allowance for imported materials used in export processing. In 1995, China attempted to repeal the VAT exemption for export enterprises but was forced to restore it as a result of vociferous protests from foreign investors already operating in China. All these incentives are on the official books; however, more incentives to support foreign investment can be made available by local government in the form of reduced local taxes, subsidized land prices, and public expenditure on infrastructure, such as roads and utilities.

Second, China intervenes aggressively in the labor market. A minimum-wage law exists in China, as in Southeast Asia, but whereas the official minimum wage is binding in Southeast Asia, this is not the case in China. Furthermore, the large unemployed labor force in China makes it very difficult for the Chinese government to raise the minimum wage. Labor strikes are virtually nonexistent in this supposedly socialist country, despite the fact that the Chinese constitution provides workers with the right to collective bargaining and the right to strike. Although labor unions are allowed, they remain under the firm grip of the Communist Party; no independent labor unions are allowed (Jiang 2001). These conditions contrast sharply with those in Southeast Asia, where labor unrest is a major headache for many multinationals.

The suppression of the labor movement and the seemingly unlimited pool of young workers in the inland provinces make China a genuine "labor haven" for foreign investors. The government's restrictions on internal migration provide foreign employers with further leverage against their employees. Workers whose official domicile is in an inland province, for example, would be afraid of losing their jobs in a coastal city because unemployment would make their stay in the city illegal, depriving them of a valuable opportunity to achieve higher income.

Third, China uses its large market potential as a quid pro quo for foreign investment. In the early stage of economic development, just as in the Southeast Asian countries, China's main goal was to attract export-oriented foreign investment;

however, China has proved itself very clever at leveraging its internal-market potential. Although China denied foreign enterprises the right to trade and distribute products within China, it nevertheless authorized selected foreign enterprises to market their products in China through local channels. In return for this privilege, the foreign enterprises were required to invest locally in production capacity or, in the areas of telecommunications, automobiles, petrochemical products, and consumer electronics, to undertake technology transfer. The privilege of marketing telecommunications equipment has won quid pro quo investment from Motorola, NEC, Nokia, and Ericsson (among others). This type of privilege is secured by China's high barriers to imports, in addition to the effective control over market entry. Imports of telecommunications equipment, for example, are deterred by high tariffs and a punishing 17 percent VAT rate, from which locally made products are exempt, but at the same time, domestic marketing of locally made products is placed under a licensing scheme.

Southeast Asian countries have had a longer history of hosting foreign investment than China, but they have failed to retain the foreign enterprises for lack of a highly skilled labor force and trade linkages between local parts suppliers and the foreign enterprises. Southeast Asian countries generally suffer from low education levels, a situation that is exacerbated by the brain drain to foreign countries and to locally oriented service industries, such as tourism. The lack of general skills has also made technology diffusion difficult. Although there were local conglomerates in these countries with considerable human resources and financial power, most were locally oriented and failed to integrate with the foreign multinationals, who operated mainly in enclaves and could easily relocate to China when local wage rates rose.

China is also attractive to Taiwanese investors because of its market imperfections. Taiwanese enterprises, particularly the large ones, have successfully taken advantage of these imperfections to create a competitive edge for themselves (Chen and Ku 2002). They have been able to create barriers to entry by small firms so as to ensure access to valuable local resources, and they pursue vertical integration to foreclose competition from smaller firms.

In terms of attracting foreign capital, will China's WTO accession further enhance its advantages vis-à-vis Southeast Asia? Theory suggests that the answer is mixed. On the one hand, China has promised to decrease its import tariffs, offer trading and distribution rights to foreign enterprises, and eventually remove import quotas. All these measures will make foreign investment for the purpose of "tariff jumping" unnecessary, and foreign investment might be replaced by foreign imports (Mundell 1957). On the other hand, the opening of the domestic market will encourage foreign

investment aimed at building distribution channels and sales points to penetrate the local market. This is most likely to happen in the areas of retail, finance, banking, and insurance. In other words, alongside a likely decline in investment in the manufacturing sector, there should be a corresponding increase in investment in the service sector. Preliminary evidence, however, does not seem to support this theoretical prediction.

Although China's imports increased somewhat in the first half of 2002, the magnitude of the increase was not sufficient to constitute an investment substitution effect. Most of the increase in imports was accounted for by intermediate goods used to support the export industry rather than consumer goods aimed at meeting local demand. It might take time for theoretical predictions to materialize, but there are certain institutional barriers that might be preventing the market mechanism from functioning. For instance, the Chinese market is not a single market, but a segmented one, in which local governments continue to play an important role and state-owned enterprises (SOEs) continue to dominate local marketing channels.

Despite the liberalization in foreign trade, internal marketing barriers remain very strong; local presence may be useful for foreign enterprises in their attempts to overcome these internal barriers, making direct investment a complement to rather than a substitute for trade. For example, although automobiles are importable, they are not marketable without a dealer's license, and these licenses are issued locally; direct investment, usually in the form of joint ventures with SOEs, is therefore helpful in obtaining these licenses. In order to sell personal computers on the Internet to Chinese consumers, Dell decided to establish a factory in Xiamen rather than ship the products from Taiwan, where most of its subcontractors are located. Such an investment went ahead despite China's commitment to phasing out all tariffs on personal computers by 2005.

China's entry into the WTO has removed some of the uncertainties surrounding its most-favored-nation status among the world's major trading partners, thus securing its position as the world's largest factory. Southeast Asia can combat China only with a more open, more mature, and more integrated market, which may be possible in the form of the proposed ASEAN Free Trade Area.

3. Hollowing out of Taiwanese industry

Taiwan's manufacturing output accounted for 33.3 percent of GDP in 1990; by 2000, this figure had fallen to 26.3 percent. In 2001, China registered double-digit economic growth, but Taiwan experienced its first-ever period of negative economic

Table 7. Proportion of overseas production of Taiwanese export orders (percentage)

	2000	2001	2002
All manufacturers	15.87	18.95	19.80
Chemicals	1.19	1.88	2.01
Plastic and rubber	12.36	14.53	15.59
Textiles	12.07	16.96	18.31
Basic metal	4.19	6.98	9.87
Machinery	3.55	21.79	16.52
Electrical products	26.16	28.10	28.49
Information products	28.97	28.55	33.14
Transport equipment	4.56	7.58	7.06
Furniture	30.71	36.41	37.90
Sporting goods	28.23	23.83	41.53

Source: Ministry of Economic Affairs, unpublished government report.

Note: All figures are July statistics of respective years.

growth. Taiwan's unemployment rate averaged 4.8 percent in 2001 and stayed above 5 percent in 2002 during the fragile economic recovery. Many politicians in Taiwan are blaming China for the demise of Taiwan's economy, arguing that unless Taiwan finds a way to achieve sustainable economic growth without China, it will be marginalized and eventually become another of China's dependent states.

The apparent culprit in this "marginalization" theory is massive investment in China. Of course, the argument that excessive investment abroad will hollow out the domestic industry is not new in the literature, but the empirical evidence is mixed (Frank and Freeman 1978; Blomstrom, Fors, and Lipsey 1997). Details of the proportion of Taiwanese export orders filled by means of overseas production are provided in table 7, from which it is clear that this proportion increased from 2000 to 2002. In 2002, 19.8 percent of the overall exports of Taiwanese manufactured goods were processed abroad. Among all manufacturing industries, sporting goods and furniture industries had the highest proportions (41.5 percent and 37.9 percent of overseas production, respectively), followed by information products (33.1 percent) and electrical products (28.5 percent). In many traditional product categories, such as keyboards, monitors, scanners, and mice, China is the major production base, with a production capacity far exceeding that of Taiwan. A simple correlation analysis demonstrates that more overseas investment leads to more overseas production, with goods produced overseas thus replacing exports from Taiwan.

One study of Taiwan's manufacturing firms, however, has shown that at least until 1999 outward investment was actually beneficial to domestic employment and even conducive to domestic investment (Ku 2001). Table 8 provides some of the results of this study, showing that an average manufacturing firm that had never engaged in FDI saw a decline in employment of 2.1 percent from 1993 to 1999, whereas those engaging in FDI saw an increase in their domestic employment over the same pe-

Table 8. Overseas investment and domestic employment in Taiwan

Group	Number of firms	Employment in 1993 (persons)	Employment in 1999 (persons)	Change (%)
Noninvestors	47,147	24.2	23.7	-2.1
Investors in China	1,017	108.8	110.7	1.7
Investors in China and other areas	354	286.6	347.3	21.2
Investors in non-China regions	893	206.5	262.9	27.3
Investment location unknown	678	102.2	120.8	18.2

Source: Ku (2001).

Note: Employment is expressed as per-firm employment.

riod. Among different groups of investors, however, those that invested only in China had the lowest growth rate in domestic employment, a mere 1.7 percent increase, compared with almost 20 percent growth among other investor groups.

This seems to suggest that investing in China with no aspirations to venture elsewhere is somehow dangerous, meaning that investment in China is a retreat from competition rather than an effort to combat competition. A closer look at the data reveals that the small increase in the "China-only" group is mainly attributable to the small size of the investors and their tendency to cling to declining industries that lack the capability to upgrade their products. In other words, investment in China is less desirable than investment in other regions largely because of a self-selection mechanism, rather than as a consequence of the investment per se. Small firms with no upgrading capability choose China in an effort to extend their business life. Without such an investment opportunity, these firms would probably have been eliminated by market competition. In another study, FDI has been shown to increase the probability of firm survival (Chen and Ku 2000). Therefore, the fact that small firms invest in China rather than upgrading their domestic operations should not be considered a major cause of industrial hollowing out. The key question is what would have happened to the performance of large and capable firms had they not invested in China. Most of Taiwan's large firms had already invested in Southeast Asia or other regions before embarking on FDI in China, and some of these investments were quite successful. They nevertheless chose to diversify into China in the early 1990s when the investment climate in China was seen to be mature and stable, and almost without exception, their production scales in China soon surpassed those in Southeast Asia.

In addition to the favorable conditions offered by the Chinese government, as previously mentioned, the seemingly unlimited labor pool in China has enabled Taiwanese firms to expand their production scales as far as the export market would allow. This subsequently has led to a rapidly enlarging share of Taiwanese investors in the world's subcontracting markets. The increased market share has induced Taiwanese

firms to pursue vertical integration, to conduct research and development (R&D), and sometimes to diversify into other industries that promise more growth potential. Therefore, as these Taiwanese firms have become more powerful in the world market, they have increased their domestic employment handsomely.

These firms are clearly not to blame for Taiwan's recent economic decline. In fact, firms engaging in overseas production are preventing Taiwan's economy from declining further. They have aided the country's domestic industry through their purchases of industrial materials, machinery, components, and parts to support their overseas operations. This has manifested itself in the past and current structure of Taiwanese exports to China, a structure that is being further solidified by WTO accession. Nevertheless, it is clear that this overseas support force is weakening over time, as production in China is increasingly being linked to local suppliers that are either indigenous firms or firms relocated from Taiwan. This is reflected in the increasing proportion of local procurement of intermediate goods by overseas investors, a phenomenon commonly observed among multinationals of all nations. In other words, FDI-induced trade is unsustainable, and therefore not a reliable engine of domestic growth.

As production in China increases, the agglomeration effect begins to work in China's favor. The suppliers of upstream materials, components, and parts are forced to invest in China in order to better serve their downstream buyers. If they do not, their business opportunities may be in danger. Thus, for example, once the apparel industry relocates, the textile industry follows, and thereafter come the fiber producers. The process is like pulling sweet potatoes out of the ground. Once the stalk is pulled, the sweet potatoes leave the ground. There is no way one can hold on to the "roots" while stretching the stems overseas to receive fresh nutrition, as the Taiwanese government had once hoped.

Even the logistical functions of the headquarters have proven unsustainable as a domestic operation once production moves overseas. Most Taiwanese investors in China are initially export-oriented; they negotiate orders in Taiwan, subcontract the work to their Chinese subsidiaries in a consignment agreement, and procure all of their materials and intermediate goods in Taiwan. Thus, although production is undertaken in China, the Taiwan office serves as a logistics center. The Taiwanese government had envisaged a role for Taiwan as a global logistics center to take advantage of the situation and even introduced several policies to help realize this dream. But the statistics clearly show that Taiwanese firms in China have gradually evolved from export-oriented production to locally oriented production. A survey conducted in 2001 revealed that in most industries, local sales accounted for over 40 percent of

Taiwanese production in China, and in some industries, such as leather and leather products, local sales came close to 70 percent (table 9).

The trend is apparently driven by rising income levels in China and the business opportunities that have subsequently appeared. The increase in local sales of products of Taiwanese firms in China suggests that the logistical function of the Taiwanese headquarters will diminish and eventually be taken over by the office in China, a path to marginalization. In fact, even the R&D functions of the headquarters are being relocated to China. As the scale of production in China grows to overtake that of Taiwan, and local sales grow to account for a major proportion of production, investors begin to sense the need to conduct R&D in China. Local R&D is needed to support local production as well as to customize products for local consumption. A survey carried out by Taiwan's Ministry of Economic Affairs in 2001 indicated that roughly 40 percent of Taiwanese subsidiaries in China have now established their own R&D division (Tsai 2001a), and these Chinese R&D divisions are staffed by Taiwanese and Chinese engineers, under Taiwanese management.

As a result of the rapid growth of Taiwan's high-tech industry in recent years, a skills shortage in the Taiwanese labor force has become evident, particularly in the area of information technology. Although Taiwan produces a large number of college graduates and advanced-degree holders (about 50,000 per year), the numbers are insufficient to support the rapid growth of the high-tech industry. Given that the reverse brain drain of the 1990s has now almost depleted the pool of seasoned engineers housed in U.S. industries (such as those in Silicon Valley), Taiwanese investors are increasingly turning to overseas Chinese engineers and fresh graduates from China's premier universities to construct their R&D teams. As a direct result of the immigration restrictions imposed by the Taiwanese government on Chinese engineers wishing to work in Taiwan, China will soon become the R&D center for many Taiwanese firms. The need for management and control of these centers will exacerbate the brain drain from Taiwan to China, which is already quite serious (Leng 2002). In response to the rising economic power of China, an increasing number of Taiwanese college graduates have already set their sights on China as their future career direction and have even enrolled for their advanced-degree courses in Chinese colleges. So in addition to the loss of its capital and export markets, Taiwan is also on the brink of losing its precious manpower.

The relocation of Taiwanese industry is also accelerating the speed of modernization of the Chinese bureaucracy, depriving Taiwan of its advantage in the area of government efficiency, which at present is still considered superior to that of China. For example, after Taiwan's notebook PC manufacturers had relocated to the Shanghai

Table 9. Product outlets of Taiwanese firms in China in 2001 (percentage)

Industry	Exports	Local sales	Imports into Taiwan
Food	49.1	45.4	5.5
Textile	68.0	15.3	16.8
Plastic and rubber	50.6	44.7	4.7
Leather and leather products	26.9	69.4	3.8
Wood and paper	56.5	40.3	3.2
Basic metal and metal products	47.8	45.7	6.5
Machinery	35.8	56.3	8.0
Electrical and electronics	51.7	37.3	11.0
Other manufactures	22.6	68.1	9.3
Service industry	23.7	64.1	12.2
All	43.4	47.8	8.8

Source: Tsai (2001b).

area, they had difficulty shipping their products directly from Shanghai to the West because of an outmoded customs practice that required everything to sit in customs bays for a minimum of 24 hours before it could be cleared. Because the global logistics system currently in use in Taiwan's PC manufacturers sometimes requires them to ship computers within three days of the order confirmation, such customs delays would render them uncompetitive within the industry. The Chinese government soon recognized the problem and expedited the customs procedures so as to accommodate these investors, who are, after all, considered valuable to the Chinese industry.¹

Clearly, therefore, to Taiwan the threat of hollowing out is real: not only will its manufacturing industry be hollowed out, but the logistics service industry and the island's most valuable asset, its human resources, are likely to be affected also. How can Taiwan avert such a catastrophic "siphoning" effect into mainland China?

4. Conclusions

The emergence of China as a major economic power has clearly made many countries nervous, and not the least is its archrival Taiwan. Taiwan was quick to trade with China after China opened its doors to the rest of the world, but only with regard to domestic exports to China; the same conditions were not applied to imports from China. Even since China's WTO accession, the Taiwanese government has continued to envisage a scenario of Chinese imports swarming the local market and has therefore refused to agree to the immediate normalization of trade with China. Taiwanese firms were not allowed to invest in China until 1992, and Taiwanese investment there continues to be strictly regulated. The Taiwanese government adopted a

¹ "Taiwan Notebook Producers Boost China Direct Shipment Ratios," *Commercial Times*, 22 May 2002.

policy of discouraging investment in China, known as the "go slow, no haste" policy, but China has still managed to become Taiwan's largest export destination and the main target for Taiwanese investment. For the Taiwanese government, China is what one might refer to as a "fatal attraction."

China has been perceived as a threat to the economy of the region, rather than as a partner, because it has pursued a mercantilist policy since the adoption of its Open Door Policy in 1979. It has promoted exports and discouraged imports, resulting in China's now having one of the world's largest foreign reserves. Much like the mercantilist countries of the past, such as Japan in the 1960s, China has not been regarded by the rest of the world as a comfortable trading partner.

Moreover, China has pursued economic growth by exporting goods (such as textiles and electronic goods) that have been major exchange earners for many other developing countries. In the first half of 2002, China exported 25.8 percent of its GDP, a proportion much higher than that of other countries of comparable size, and these exports have replaced the exports of other developing countries, forcing them to scramble to produce new products and find new markets. Although China also has substantial imports, the composition of these imports is mainly industrial inputs, such as chemicals, steel, textile fibers, and machinery, and developing countries can find few business opportunities for supplying these materials. In other words, China's recent participation in world trade has benefited the developed countries at the expense of the developing countries.

China has also attracted significant amounts of FDI each year, creating an investment diversion that has had further impacts on other developing nations. In 2000, for example, China received a total of \$40.7 billion in foreign direct investment, the largest amount among all of the developing countries. Much of this capital might well have gone to Southeast Asia or to other developing countries if China had remained closed to the rest of the world.

But Taiwan should certainly not regard itself as one of the developing nations with a right to complain about China's being a rising trading power and a magnet for foreign capital. Taiwan has maintained a substantial trade surplus vis-à-vis China ever since the two sides officially began trading with each other in 1986, and it has taken full advantage of China's exporting power by shipping industrial materials and machinery to support its production operations. Moreover, Taiwanese firms have been a major force behind China's expanding exports. For example, some estimates suggest that over half of Chinese exports of PCs and peripherals are accounted for by output from Taiwanese subsidiaries in China. However, the nervousness surround-

ing China's rising economic power is felt just as much among Taiwanese people as in the other Asian developing nations. In the face of China's emergence, many people in Taiwan are pessimistic about their own future, and their pessimism seems justified, given the example of Hong Kong, which now finds its hope of serving as a financial center for China dashed by an ever-increasing unemployment rate.

Trade theory suggests that increasing globalization (in the sense of decreasing transport costs) leads to an agglomeration of industry that may, in turn, reduce the income of the countries whose industry is relocated to the center of agglomeration (Krugman and Venables 1995). What is occurring in China is apparently an agglomeration of the world's manufacturing industries through transplantation of foreign industries. This forces the source countries to restructure themselves, and the restructuring has to take place on such a massive scale that it inflicts great pain on them. But such relocation represents a rationalization of world production, which is inevitable when a country as large as China suddenly opens up to trade. The quicker a country recognizes this hard reality and makes the necessary adjustments, the sooner it will benefit from the traditional gains of the reallocation of resources.

The restructuring of these economies is inherently difficult, because global production is in a state of imbalance today. Productivity improvements in the manufacturing sector in recent years have created production capacities that far exceed the demand for manufactured goods. In the meantime, productivity increases in the service sector are not as impressive, despite the fact that demand is shifting toward this sector (Rowthorn and Ramaswamy 1999). The imbalance has driven down the price of manufactured goods, which has induced manufacturers to move their production bases to China to reduce their costs. Massive investment in China, coupled with an abundance of cheap and readily available labor, has exacerbated this problem of overcapacity, a problem that manifested itself during the Asian financial crisis. Yet there is no apparent solution, and the problem is still not taken seriously in the post-crisis policy remedies.

As far as Taiwan is concerned, there seem to be two policy options. The first option is to pursue a process of vertical integration of production across the Taiwan Strait and to be a driver of this integration process; that is to say, Taiwan could focus on the capital-intensive, technologically demanding segment of production, such as chemicals, textile fibers, steel, and semiconductors, in which it still has a comparative advantage, and allow China to concentrate on the labor-intensive segment of production, within which these upstream materials can be processed into final goods. As a result of capital intensity, labor costs will make only a small difference to the competitiveness of these products, and indeed, it is the technology (mainly

process technology) that will make the difference in competitiveness. Since technological progress in these areas can be accumulated only through learning, China will be unable to leapfrog over Taiwan's industries and thus will be unable to render them obsolete overnight. There is, of course, a constant pulling force for Taiwanese industry to relocate to China, because there are advantages to be had in being near to downstream production, in which the Chinese industry will excel; but lower transportation costs can partially offset the advantage of proximity. In order to keep the upstream industry competitive, R&D is an absolute prerequisite. Taiwan should therefore strive to make itself a convenient and comfortable place for R&D to take place, which requires good living conditions, the free mobility of people, and a knowledge-rich community that is inclined toward research.

The second option for Taiwan is to abandon its traditional role as the world's chief subcontractor and move on to something else in an effort to disconnect itself from China. For example, Taiwan could delve into the biotechnology industry, as Singapore has, in order to break new industry frontiers. The advantage of such a strategy is that by pursuing it, Taiwan could maintain its economic autonomy and tread an industrial developmental path parallel to that of China. The difficulty with this option is that Taiwan's economic base would have to be rebuilt almost from scratch, and there is no telling how long it might take to make it viable. During the course of its economic development, Taiwan has had plenty of experience in industrial restructuring, but the transitions made in earlier times were always cumulative and piecemeal within the parameters of the manufacturing industry. The jump from a labor-based industry to a knowledge-based one is a daunting challenge, indeed, a quantum leap (Hu and Chan 2002). What is more, the difficulties of bringing to fruition a brand-new industry would be greatly compounded, and politically intolerable, in the face of the island's current lingering high level of unemployment, which clearly calls for the rapid generation of new job opportunities.

For other developing countries, the emergence of China as an economic power will probably set a new paradigm for trade. The traditional North-South problem is likely to be replaced by a South-South problem, with China competing against the rest of the developing countries in the world's manufacturing markets. Underlying this paradigm shift is the increasing importance of capital movement in the facilitation of global trade. FDI has proved to be an effective tool in terms of gaining access to foreign labor, the area in which the comparative advantage of the developing countries lies. In other words, traditional trading, in which factors are exchanged in the form of commodity trades, is increasingly being replaced by the movement of capital from countries of labor scarcity to those of labor abundance. Meanwhile, local markets, whether in the advanced or developing countries, are also being in-

creasingly served by local production. Indeed, for the world's largest multinationals, local sales in the overseas markets usually exceed their domestic exports. As the world's most populated country, China offers the greatest potential gains from FDI-based trade, and capital-rich countries stand to benefit most from these gains. Therefore, even with the complete opening up of the Chinese market, the major beneficiaries are likely to be the advanced countries, not the developing countries.

The principle of free trade, as championed by the WTO, is inadequate for dealing with the problems emerging from China's rise as a major trading power. Developing countries faced with formidable competition from Chinese industry may increasingly find preferential trade arrangements provided by the WTO an attractive solution. For example, under the umbrella of NAFTA, Mexico is one of the few developing countries that, in the face of rising Chinese exports, has been able to gain market share in U.S. textile imports. Similarly, eastern European countries may be able to gain some protection from Chinese competition in the form of EU preferential treatment. These examples should encourage the developing countries in East Asia to search for a similarly favorable trading environment. The development trend of the future global trading system, therefore, points to a looming risk of degeneration into a segregated world market composed of trade blocs.

References

- Blomstrom, Magnus, Gunnar Fors, and Robert Lipsey. 1997. Foreign Direct Investment and Employment: Home Country Experience in the United States and Sweden. *Economic Journal* 107 (445):1787-97.
- Board of Foreign Trade, Taiwan. 2000. *Analysis of Cross-Strait Trade* (in Chinese). May.
- . 2002. *Analysis of Trends of Cross-Strait Trade* (in Chinese). August.
- Chen, Tain-Jy, and Ying-Hua Ku. 2000. The Effect of Foreign Direct Investment on Firm Growth: The Case of Taiwan's Manufacturers. *Japan and the World Economy* 12 (2):153-72.
- . 2002. Creating Competitive Edge out of Market Imperfections: Taiwanese Firms in China. *Asian Business and Management* 1 (1):79-99.
- Frank, Robert H., and Richard T. Freeman. 1978. *The Distributional Consequences of Direct Foreign Investment*. New York: Academic Press.
- Hu, Sheng-Cheng, and Vei-Lin Chan. 2002. Taiwan's Experience in Switching Its Engines of Growth. *Asian Economic Papers* 1 (3):1-23.
- Jiang, Xuequin. 2001. Fighting to Organize. *Far Eastern Economic Review* 164 (35):72-75.
- Krugman, Paul R., and Anthony J. Venables. 1995. Globalization and the Inequality of Nations. *Quarterly Journal of Economics* 110 (4):857-80.
- Ku, Ying-Hua. 2001. *The Effect of Foreign Direct Investment on Domestic Industry*. Project report. Taipei: Chung-Hua Institution for Economic Research.

- Leng, Tse-Kang. 2002. Economic Integration and IT Talent Flows across the Taiwan Strait: The Taipei/Shanghai/Silicon Valley Triangle. *Asian Survey* 42 (2):230–50.
- Mundell, Robert. 1957. International Trade and Factor Mobility. *American Economic Review* 47 (3):321–35.
- Rowthorn, Robert, and Ramana Ramaswamy. 1999. Growth, Trade and Deindustrialization. *IMF Staff Papers* 46 (1):579–608.
- Tsai, Hong-Min. 2001a. Survey on Investments and Sales of Taiwanese Firms in China. *Kung-Yeh Tza-Chih* (in Chinese) (August):20–25.
- . 2001b. The Future Trend of Taiwanese Direct Investment in China after WTO. Paper presented at the China Economic Development Seminar, Chung-Hua Institution for Economic Research, 11 December, Taipei.
- Tsoi, Alan, and Patrick Su. 2001. China Goes for Equality. *International Tax Review* 12 (7):54–57.

Copyright of Asian Economic Papers is the property of MIT Press and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Copyright of Asian Economic Papers is the property of MIT Press. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.