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JAPAN-CHINA TRADE: PERFORMANCE AND PROSPECTS

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Abstract

This article adopts quantitative measurements to assess the performance of commodity trade between Japan and China in 1975–85. Sino-Japanese trade is found to have been characterised by a high degree of interdependence. Due to markedly different resource endowments trade complementarity between the two countries was very strong and increased over time. Japanese exports increasingly focused on machinery and transport equipment, while crude petroleum constituted by far China's single most important export commodity. In value terms, two-way trade grew five-fold during the period under discussion. Japan maintained her long-held position as China's single largest trading partner, and China became Japan's second largest market. The analysis suggests that a high level of complementarity between the economies of industrially advanced Japan and developing China, historical and cultural ties, and geographical proximity will continue to provide the ideal environment for bilateral trade to thrive.

Introduction

Differences in resource endowment ratios are generally viewed as the mainspring of international trade between countries. In addition, geographical, historical, cultural and political factors may influence trade between a pair of countries in a multi-country setting. This article adopts the comparative advantage theory to analyse Sino-Japanese merchandise trade between 1975 and 1985. The focus is on the two countries' commodity composition of exports, because import patterns tend to be severely distorted by government trade policies.

Questions answered on the basis of empirical evidence[1] include the following: How intensive is the bilateral trade flow between the People's Republic of China (PRC) and Japan relative to the impact of the two countries in the international trade arena? Are their patterns of comparative advantage with the rest of the world[2] consistent with their economies' factor endowments? To what degree do their bilateral export structures differ from their

[1] Since the detailed statistics necessary for this analysis are not available from Chinese government sources, they were extracted from the United Nations, *Commodity Trade Statistics* and *Yearbook of International Trade Statistics*, which are based on the Standard International Trade Classification (SITC). The raw data consist of official trade statistics published by China's trading partners, in this case by Japan.

[2] "World" refers to only market economies, because detailed foreign trade statistics for the centrally planned economies (CPE) are unavailable. The trade of countries reporting according to the United Nations' Standard International Trade Classification (SITC) covers about 90 per cent of world trade. Given the relatively small volume of CPE trade, its omission is unlikely to bias the data used in this article.

comparative advantage established in world markets? Have these patterns of trade specialisation shifted over the ten-year sample period in terms of product sophistication? What are the effects of China's new foreign trade policy and practices, initiated in late 1978, both on her international competitiveness and in the Japanese context? And most importantly, what is the potential for further expansion in Sino-Japanese trade?

I. *China's and Japan's Foreign Trade in Global Perspective*

Before economic reform, like the other centrally planned economies China tended to deemphasise the role of foreign trade in its economic growth. Imports merely served to make up for shortfalls in domestic production, and exports were considered a necessary evil to earn the foreign exchange to pay for imports. China has now abandoned her economic development strategy of import substitution, and foreign trade is conducted in accordance with the comparative cost principle. This has been reflected in China's relative position in world trade. In terms of export value she came sixteenth in 1985, up from twenty-eighth in 1975 [Almanac (1988, p. 446)].

But despite the spectacular increase in the absolute volume of China's external trade since the launching of an open foreign trade policy in late 1978 it remained relatively small in world trade, accounting for only 1.68 per cent[3] seven years later. Although its growth rate surpassed that of the world average, it only represented growth on a small base. In 1975, China's share in world exports exceeded that in world imports. By 1980, however, imports outstripped exports as a result of the policy shift from import substitution to comparative advantage. In 1985 China contributed 1.37 per cent and 1.98 per cent to the global export and import trades respectively.

The fact that foreign trade is vital for Japan has turned the country into one of the world's largest trading nations. Her share in total world trade grew from 6.37 per cent in 1975 to 7.62 per cent in 1985, while that in total world exports soared from 6.36 per cent to 9.07 per cent during the corresponding period. As exporters Japan and China ranked second and nineteenth respectively in 1984 [Almanac (1986, pp. 951 and 952)].

II. *The Importance of the Bilateral Trading Relationship*

China's major trading partners in 1985 were, by far, Japan, Hongkong, the European Economic Community (EEC) and the US, in descending order of importance. Between 1975 and 1985, Japan's share of China's exports rose from 23.95 per cent to 24.60 per cent, while her share of China's demand for imports slipped from 36.35 per cent to 30.93 per cent.

During the entire period under analysis, the US was Japan's leading trading partner, both in her export and import trades. By 1985, China had become Japan's second most important market, followed by South Korea, West Germany, and Hongkong. In fact, China's share of Japan's exports climbed from 4.05 per cent in 1975 to 7.10 per cent in 1985.

[3] Unless otherwise indicated all figures given in the text of the article were computed from raw data provided in the two sources listed in note 1.

Apart from the US, Japan's leading suppliers in 1985 were Saudi Arabia, Indonesia, the United Arabic Emirates, and Australia, in descending order of importance. Even though China did not rank among the above, her share of Japan's demand for imports increased from 2.65 per cent to 5.11 per cent during the decade under discussion.

In sum, while China's exports to and imports from Japan account for a substantial proportion of her total trade, China's share of Japan's total trade is comparatively small. Hence the Sino-Japanese trade relationship may be described as asymmetric.[4]

The *relative* importance of the bilateral trading relationship between two countries can be gauged using the intensity of trade index.[5] For the purpose of this article it provides a measure of the extent to which China's (Japan's) exports to Japan (China) are larger or smaller relative to her exports to the whole world than Japan's (China's) imports are relative to world trade.

Table 1 puts the two countries' trade intensities in global perspective. The evidence suggests that China's export trade was extremely intensive with Hongkong. Given the special characteristics of the re-export of Hongkong, this finding is not surprising. But China also exported intensely to the ASEAN member countries and Japan. By 1985, the latter was nearly four times as important as a market for China as the rest of the world.

Chinese imports from Hongkong became increasingly important over time. Again, if Hongkong's entrepot activities are taken into account, China can be said to have imported most intensively from Japan. She also had a consistently intense import trading relationship with Thailand, Australia and New Zealand.

As Table 1 shows, Japan had intense bilateral trading relationships with a great number of countries. Apart from the US, New Zealand and West Germany export intensity fell over time as Japan moved into worldwide markets. In 1985, she exported most intensively to China. On the import side, Indonesia and Saudi Arabia registered the highest trade intensity indexes, reflecting Japan's dependence on crude oil imports.

III. *Overview of Sino-Japanese Trade*

In value terms, two-way trade between China and Japan increased five-fold during the 1975–1985 preiod which was substantially above the growth rate observed in total world

[4] By comparison, the Sino-Canadian trade relationship is symmetric, i.e. China's trade with Canada accounts for only a small proportion of her total foreign trade and vice versa.

[5] The 'intensity of trade' concept was first used in Brown (1948). It was popularised by Kojima (1964); Drysdale (1969); Drysdale and Garnaut (1982); and Anderson (1983).

The intensity of trade index is defined as the share of one country's export (import) trade with another country, divided by the other country's share in imports from (exports to) the rest of the world. A value of unity indicates that the bilateral relationship between two countries is as important as their trade with the rest of the world. A value greater (smaller) than one suggests a more (less) intense bilateral trading relationship. The index takes the form

$$I_{ij}=\frac{X_{ij}}{X_i}\Big/\frac{M_j}{M_w-M_i}$$

where X_{ij} is country i's exports to country j,
X_i is country i's total exports,
M_j is country j's total imports,
M_w is total world imports, and
M_i is country i's total imports.

TABLE 1. TRADE INTENSITIES

Trading Partner	China's Exports			China's Imports		
	1975	1980	1985	1975	1980	1985
Hong Kong	28.63	22.10	19.23	0.80	6.63	13.02
Singapore	5.00	2.84	6.52	1.12	1.66	0.73
Philippines	1.88	2.95	4.07	1.59	0.81	0.82
Japan	3.72	3.45	3.86	5.55	3.84	3.36
Indonesia	6.00	2.04	1.84	0.00	0.00	0.23
Thailand	0.72	4.96	1.83	1.26	1.98	1.92
Malaysia	5.92	2.62	1.54	2.00	1.74	0.53
Australia	1.23	1.34	0.93	4.03	3.77	1.89
US	0.00	0.51	0.88	0.36	1.56	0.75
New Zealand	0.60	0.89	0.67	1.07	3.07	1.22
West Germany	0.43	0.48	0.42	0.77	0.57	0.57
Canada	0.23	0.25	0.29	1.62	1.16	0.48
Trading Partner	Japan's Exports			Japan's Imports		
	1975	1980	1985	1975	1980	1985
China	5.55	3.84	3.36	3.72	3.45	3.86
Taiwan	4.64	4.01	3.01	2.04	1.60	1.79
Australia	2.69	2.52	2.53	4.62	3.69	4.04
South Korea	4.69	3.57	2.48	3.96	2.52	2.37
Hong Kong	3.09	3.18	2.42	1.00	0.67	0.67
Thailand	4.41	3.02	2.40	5.15	2.52	2.30
Indonesia	5.93	4.68	2.30	7.49	8.79	8.68
US	1.77	1.87	2.00	1.24	1.23	1.38
New Zealand	1.92	1.79	1.97	2.65	2.22	2.52
Malaysia	2.43	2.84	1.91	2.81	3.92	4.41
Philippines	4.18	3.02	1.89	7.59	4.96	4.29
Saudi Arabia	4.94	2.40	1.80	3.23	2.58	5.89
Singapore	2.84	2.39	1.60	1.16	1.12	1.10
West Germany	0.34	0.46	0.48	0.15	0.15	0.18

Source: Indexes were computed from data in United Nations trade statistics (various issues of *Commodity Trade Statistics* and *Yearbook of International Trade Statistics*).
The raw data for Taiwan are from *Taiwan Statistical Data Book 1986* (1986).

trade.[6] Bilateral trade expanded more rapidly between 1975 and 1980, but it represented only growth on a relatively small base. While Sino-Japanese trade merely doubled between 1980 and 1985, it accounted for 4.8 per cent of total world trade at the end of the decade under analysis.

The recovery of trade between China and Japan began in 1977. It was bolstered by the conclusion of the Long-Term Trade Arrangement (LTTA)[7] in February 1978 and the ratification of the peace treaty between the two countries in October 1978 [Payne, (1982, pp. 261–64)]. In that same year, flexible trade practices were adopted by China's trade

[6] During the 1975–1985 period, total world trade grew by 123.2 per cent.

[7] The term of the Long-Term Trade Arrangement (LTTA) was originally set for the period from 1978 through 1985. It specified that Japan would export technology and plants, construction materials, and machinery and parts, in exchange for Chinese crude oil, coking coal and power coal (Payne, 1982, p. 261). On 19 March 1979, the LTTA was extended five years, through 1990 (Payne, 1982, p. 268).

TABLE 2. SINO-JAPANESE BILATERAL TRADE PERFORMANCE

	1975 (US$1,000)	1980 (US$1,000)	Change (%)	1985 (US$1,000)	Change (%)
PRC Exports	1,532,449	4,323,374	182.1	6,512,686	50.6
PRC Imports	2,256,030	5,078,250	125.1	12,479,682	145.7
Total Trade	3,788,479	9,401,624	148.1	18,992,368	102.0
Balance of Trade	−723,581	−754,876		−5,966,996	
Exp./Imp. Ratio	1:1.5	1:1.2		1:1.9	

Source: Figures were compiled from data in various issues of United Nations, *Commodity Trade Statistics.*

organisations to promote imports and exports (*China Foreign Trade*, No. 2, 1979, p. 2). In fact, in 1979 the growth of Sino-Japanese trade rose to record heights [Payne (1982, p. 270)].

Imports play a strategic role in China's development process and largely depend on the country's economic policy objectives with demand being very sensitive to priority. During the PRC's Sixth Five-Year Plan (1981–1985), foreign trade was earmarked for rapid expansion and imports were expected to grow at a faster rate then exports. In the event, these expectations materialised in the Japanese context since industrially advanced Japan could provide China with the technology-intensive goods needed for her industrialisation.[8]

Table 2 summarises the Sino-Japanese bilateral trade position over the period under analysis. China suffered a continual trade deficit. With exports expanding faster than imports in 1975–1980, her trade deficit/export ratio declined accordingly. In the 1980s, however, import growth by far exceeded export growth (*Beijing Review*, 4/11/85, p. 4) lifting the 1985 deficit to the unprecedented level of close to US$6 billion.[9] This happened in spite of the guiding principle of the LTTA according to which the exports of one party were to be balanced in value by imports of the other party. It should be noted, however, that the same arrangement stipulated Chinese payments for Japanese exports to be made on a deferred payment basis [Payne (1982, pp. 261–62)].

Since 1983, a number of factors have contributed to China's expanding trade deficit with Japan. Firstly, the amount of products imported from Japan to meet China's needs increased. Secondly, the prices of goods China exported to Japan did not keep pace with the prices of goods that Japan exported to China. Last not least, China's exports to Japan were adversely affected by Japan's restrictions on the import of Chinese silks, satins, certain farm produce and other products (*Beijing Review*, 25/11/85, p. 29).

IV. *The Case of China*

1. China's Factor Endowments

Countries will export commodities making relatively intensive use of the factor of pro-

[8] In a similar vein, the EEC increased their exports to China by 107.5 per cent in 1980–1985. By comparison, Australia and Canada registered growth rates of only 8.1 per cent and 16.0 per cent respectively during the corresponding period.

[9] Among her trade deficits, China's adverse balance of trade with Japan was the largest (*Beijing Review*, 4/11/85, p. 4).

duction that is relatively cheap before trade. This section reviews some crude indicators of the Chinese economy's factor endowments: land, labour and capital. They provide us with certain expectations with respect to the PRC's export specialisation. The following discussion adopts the approach taken by Garnaut and Anderson (1980, pp. 374–420). Firstly, taking income as a proxy for physical capital, in terms of capital to labour ratio (GNP per capita) China belongs to the low-income countries. Secondly, the proportion of the PRC's population participating in tertiary education, taken as a proxy for human capital, is very low. These two economic indicators suggest a low endowment of both physical and human capital relative to labour. This implies that China will tend to specialise in unskilled labour-intensive goods rather than in technology-intensive or human capital-intensive products.

Thirdly, China's ratio of population to 'total land area,'[10] a crude proxy for the ratio of labour to natural resources, takes an intermediate value between resource-rich countries, such as Canada and Australia, and resource-poor countries, such as Hongkong, Singapore, Taiwan, South Korea and Japan. Hence one can only speculate as to whether China has a slight comparative advantage or comparative disadvantage in agricultural and mineral resources. The hypotheses advanced above will be tested in the next section. All we can say with confidence at this stage is that China is abundant in labour relative to both capital and natural resources, compared with a global average.

2. *China's Global and Bilateral Comparative Advantages*[11]

The concept of global comparative advantage derives from the commodity composition of a country's total exports, showing its pattern of comparative advantage with the rest of the world. The 'revealed' comparative advantage index[12] permits us to measure a country's export specialisation on a global scale. This section examines the extent to which the pattern of China's comparative advantage established in world markets has been duplicated in Japan.

Although most goods require inputs of all factors of production, they can be classified according to their dominant factor, that which determines the location of production and

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[10] The concept of 'total land area' has been adopted from *FAO Production Yearbook* (1986, p. 3). It refers to the total area of the country, including area under inland water bodies. 'Population density' is used as a proxy for the availability of natural resources per head, as in Keesing and Sherk (1971, p. 956).

[11] Although it basically depends on it, a country's pattern of bilateral comparative advantage generally differs substantially from that of its global comparative advantage.

[12] The 'revealed' comparative advantage index, an export specialisation index introduced by Balassa (1965), is defined as the share of a commodity group in an economy's total exports divided by that commodity group's share of world exports. Provided the country's export specialisation has not been distorted by government policies, an index value above (below) unity indicates a comparative advantage (disadvantage) relative to the rest of the world. The index takes the form

$$I_{ic}=\frac{X_{ic}}{X_i}\Big/\frac{X_{wc}}{X_w}$$

where X_{ic} is country i's exports of commodity group c,
X_i is country i's total exports,
X_{wc} is world exports of commodity group c, and
X_w is total world exports.

that used most intensively.[13] For the purpose of this article, the commodities of the SITC three-digit-level[14] have been divided into five categories of factor characteristics: agricultural resources, mineral resources, unskilled labour, technology, and human capital.

The upper section of Table 3 reveals the strongest global comparative advantage for China in goods intensive in unskilled labour such as textiles, clothing and footwear. Given the country's abundance of labour relative to land and capital, international competitiveness in this factor category was to be expected. What is more, the importance of unskilled labour-intensive manufactures in China's world exports increased over time, highlighted by the switch in emphasis from heavy industry to light industry as an integral part of economic reform. In fact, from 1980 onwards these goods contributed the largest share to China's total exports.

TABLE 3. CHINA'S 'REVEALED' COMPARATIVE ADVANTAGE AND EXPORTS BY FACTOR INTENSITY

	1975	1980	1985
'Revealed' comparative advantage index—goods intensive in:			
Agricultural resources	2.26	1.66	1.54
Mineral resources	0.73	0.88	1.20
Unskilled labour	2.78	3.56	3.58
Technology	0.27	0.34	0.24
Human capital	0.32	0.37	0.29
Factor category shares of exports to the world (%):			
Agricultural resources	40.7	26.8	22.9
Mineral resources	19.3	27.4	27.9
Unskilled labour	26.5	30.2	35.5
Technology	6.5	8.2	6.9
Human capital	7.0	7.4	6.8
Factor category shares of exports to Japan (%):			
Agricultural resources	28.2	20.3	25.7
Mineral resources	52.7	60.5	51.5
Unskilled labour	15.3	14.4	17.3
Technology	2.4	3.8	4.2
Human capital	1.4	1.0	1.3

Sources: The 'revealed' comparative advantage index was computed from data in Central Intelligence Agency (February 1989).
The factor category shares of China's exports were computed from data in various issues of United Nations, *Commodity Trade Statistics.*

[13] The following analysis adopts the method developed by Krause (1982, pp. 39–55), who considers commodities to result from five factor inputs: natural resources, unskilled labour, physical capital, human capital (skilled labour) and technology. However, physical capital is not used as a factor for classification purposes, because it is relatively mobile tinternationally. Based on the work of Findlay, Phillips and Tyers (1985), this article further disaggregates natural resources into agricultural and mineral resources. This permits a more detailed analysis of the structure of China's exports, which are largely natural-resource-based.

[14] For the purpose of measuring comparative advantage, commodities are disaggregated to the SITC three-digit level, also referred to as commodity groups, because they most closely correspond to the concept of an 'industry' used conventionally in economic analysis. For a list of commodity categories at the SITC three-digit level, see Findlay, Phillips and Tyers (1985, p. 45).

As shown in the lower section of Table 3, the relatively low and stable share of China's unskilled labour-intensive exports to Japan stands out as a conspicuous feature of the countries' two-way trade that did not accord with China's world trade pattern. It is due to Japan's comparative advantage in this particular factor category of goods—as analysed below—rather than to tariffs and quantitative trade restrictions that China's import penetration in Japan was so limited and unchanging.[15]

Clothing is found to have been the most dynamic element in China's global export pattern, increasing its contribution to total exports from 5.1 per cent to 13.1 per cent during the sample period. This specialisation within the same factor category towards products of higher-value forms implies a shift from intermediate to final manufactures. It is found to have been duplicated in the Japanese context, with the share of textiles dropping marginally from 8.5 per cent to 7.1 per cent, while clothing lifted its share from 3.5 per cent to 7.1 per cent.

China's extent of comparative advantage in agricultural commodities relative to the rest of the world, in particular in the 1970s, is obviously a distortion resulting from government trade policies. A value marginally above or below unity would have more closely accorded with her factor endowments observed above. As shown in the middle section of Table 3, agricultural commodities accounted for two-thirds of China's total exports. This disproportionately high share reflects the PRC's economic development strategy before economic reform, when agricultural exports were promoted to finance imports of producer goods for the heavy industry sector. The shift in investment priorities towards light industry, initiated after 1978, is borne out by a substantially reduced international export specialisation in agricultural goods in the 1980s.

China's bilateral comparative advantage in agricultural resources also differed from its global pattern of trade specialisation. As Drysdale argues, the main reason why the actual bilateral trade flow did not reflect China's comparative advantage as strongly as might have been expected is to be found in trade restrictions. Japan is known to have extremely high barriers to food imports other than feedgrains [Drysdale (1988, p. 102)]. This explains the apparent upward trend during 1980–1985 in Chinese sales of agricultural produce to Japan as opposed to the downward trend in these exports to the rest of the world. In fact, 5.2 per cent of China's agricultural exports in 1985 consisted of unmilled maize, presumably imported by Japan as feedgrain not subject to quotas.

China's shift from import substitution industrialisation to comparative advantage reduced domestic demand for raw materials, creating an exportable surplus of mineral resources. Thus, as shown in the upper section of Table 3, by 1985 China's initial comparative disadvantage in this factor category had turned into a comparative advantage. However, irrespective of these developments the predominance of the mineral resources component of Chinese sales to Japan was striking and in contradiction to the PRC's world trade

[15] In 1980, for example, Japan imposed an average tariff of 5.4 per cent on textile imports from developing countries. High tariff levels are found to be associated with strong comparative disadvantage in the production of unskilled labour-intensive goods. Since Japan had a comparative advantage in this particular factor category of commodities, her tariff rate was low compared with 20.3 per cent and 18.2 per cent in Australia and the US respectively. Similarly, while Japan's non-tariff protection for these commodities accounted for only 4.3 per cent of total trade, the figures for Australia and the US were 30.0 per cent and 21.0 per cent respectively [Drysdale (1988, pp. 169–71)].

pattern throughout the entire period under discussion. Given Japan's severe global comparative disadvantage in this particular factor category—as analysed below—this is not at all surprising. What is more, it clearly reflects the terms of the LTTA, which specifically contemplated that China would export to Japan crude oil and coal (*China Foreign Trade*, No. 2, 1979, p. 2).

The poor penetration of world markets by Chinese technology-intensive and human capital-intensive goods was to be expected. Moreover, the marginal decline in their values shows that China's research and development expenditure as a share of value added in production and the proportion of scientists, engineers and skilled workers in total employment has remained extremely low. The negligible contribution of technology-intensive goods, basically of the chemical industry, as well as human capital-intensive goods, largely handicraft articles, to Sino-Japanese export trade was entirely consistent with China's lack of competitiveness in world markets. Chinese export specialisation, both on a global scale and in the Japanese context, was essentially confined to higher levels of value-added per worker.

3. *Commodity Composition*[16] *of China's Exports to Japan*

Table 4 confirms our previous observation that mineral fuels (SITC 3) represented by far the most important area of interest. Food and live animals (SITC O) and crude

TABLE 4. COMMODITY COMPOSITION OF CHINA'S EXPORTS TO JAPAN BY ONE-DIGIT SITC SECTIONS

	1975		1980		1985	
SITC	(US$1,000)	(%)	(US$1,000)	(%)	(US$1,000)	(%)
0	196,472	12.7	464,853	10.8	928,984	14.3
1	5,706	0.4	5,741	0.1	5,710	0.1
2	245,073	15.9	491,024	11.4	811,418	12.5
3	764,604	49.6	2,403,853	55.6	3,000,504	46.3
4	3,411	0.2	9,190	0.2	17,273	0.3
5	39,537	2.6	170,622	3.9	269,032	4.2
6	182,134	11.8	409,337	9.5	639,375	9.9
7	347	0.0	4,033	0.1	15,043	0.2
8	93,877	6.1	341,175	7.9	642,528	9.9
9	10,759	0.7	22,362	0.5	151,473	2.3

Note: SITC sections 0 to 9 do not add up to the total PRC-Japanese export values shown in Table 2, because the United Nations' commodity trade statistics occasionally lump China's trade in with that of other "Asian Planned Economies.' However, the discrepancies are negligible.

Source: Figures were compiled from data in various issues of United Nations, *Commodity Trade Statistics.*

[16] The one-digit code (sections) of the SITC is as follows:
0 Food and Live Animals
1 Beverages and Tobacco
Crude Minerals except Fuels
3 Mineral Fuels
4 Animal and Vegetable Oils and Fats
5 Chemicals

minerals except fuels (SITC 2) followed at a considerable distance. Basic manufactures (SITC 6) and miscellaneous manufactured articles (SITC 8), although not of the same value as the above two sections, still made a substantial contribution to China's export trade with Japan.

As Table 4 shows, the LTTA left the commodity composition of China's export trade with Japan basically unchanged over time. Throughout the period under analysis, crude petroleum constituted by far China's single most important export commodity.[17] Interestingly enough, the drop in the share of crude oil in total mineral fuel exports from 48.4 per cent in 1975 to 33.9 per cent in 1985 and the rise in that of coal from 1.1 per cent to 2.8 per cent during the corresponding period reflect Japan's progress made in both overall energy conservation and substitution away from oil.[18]

The contribution of the remainder of the primary industry remained relatively insignificant, with oil seeds, miscellaneous crude materials, shell fish, fresh and preserved vegetables and silk being among the top ten key export commodities. The proportion of primary products—SITC sections 0 to 4 including non-ferrous metals (SITC division 68)—decreased slightly from 79.1 per cent in 1975 to 74.8 per cent in 1985. This was approximately matched by an increase in the share of manufactures—SITC sections 5 to 8 excluding non-ferrous metals—from 20.2 per cent to 22.9 per cent in 1985. Although textiles and clothing dominated the manufacturing sector, the marginal increase in their share in China's total exports to Japan did not accord with the spectacular rise of her textile industry.[19]

V. *The Case of Japan*

1. Japan's Factor Endowments

This section discusses some indicators, albeit imperfect, of the Japanese economy's factor endowments: land, labour and capital. They provide a sound basis for anticipating Japan's export specialisation. Firstly, Japan's per capita income ranks among the highest in the world. Secondly, Japan has "large reservoirs of well-educated and well-trained labour and widespread managerial and engineering skills" [Crawford (1978, p. 28)]. Thirdly, taking population density as a crude proxy for the availability of natural resources

6 Basic Manufactures
7 Machinery and Transport Equipment
8 Miscellaneous Manufactured Articles
9 Commodities not Classified by Kind

[17] China exported crude oil to Japan for the first time in 1973, and by 1974 it already became the largest item among Japanese imports from the PRC (Chen, July 1975, p. 633).

[18] "Oil productivity" as measured by the ratio of real GNP to oil consumption increased sharply. Thus, despite policy-induced stockpiling, crude oil imports fell (OECD, July 1981, p. 23).

[19] China became the world's largest exporter of polyester-cotton mixed fabrics in 1981 (Chia, 1987, p. 107). However, Japan's import penetration ratios of textiles, clothing and footwear from China and other East Asian countries were slightly lower than those of Western Europe and North America and substantially below those of Australia (Drysdale, 1988, pp. 166–67). "Import penetration" is defined as imports from a country divided by apparent consumption, where apparent consumption is production plus imports minus exports (Ibid., p. 166, Table 6.7, Note a).

per head, Japan's endowment of agricultural and mineral resources per unit of labour is extremely low. In fact, Japan is a resource-poor country, comparable to South Korea and Taiwan [Findlay, Phillips and Tyers (1985, p. 18)].

It follows that Japan is abundant in capital, both physical and human, relative to labour. Nonetheless, given the country's fairly high population, the labour content of Japan's exports is also likely to be high. By contrast, Japan cannot be expected to specialise in agricultural produce or minerals. The extent to which actual trade specialisation matches above a *poiori* expectations both in the global and Chinese contexts will be examined below.

2. *Japan's Global and Bilateral Comparative Advantages*

This section seeks to establish the degree of discrepancy obtaining between the factor composition of Japan's world exports and that of her sales to China. Table 5 shows that Japan enhanced her global comparative advantage in human capital-intensive goods during the period under analysis, suggesting increasing investment in the area of education and training. Significant changes in Japan's trade structure had to be expected in line with the shift in industrial structure away from high energy and raw material content. The marked increase in the share of sophisticated manufactures was largely related to the development of electronics. This pattern is clearly duplicated in her bilateral export trade, where goods

TABLE 5. JAPAN'S 'REVEALED' COMPARATIVE ADVANTAGE AND EXPORTS BY FACTOR INTENSITY

	1975	1980	1985
'Revealed' comparative advantage index—goods intensive in:			
Agricultural resources	0.17	0.17	0.06
Mineral resources	0.10	0.10	0.10
Unskilled labour	2.00	1.43	1.07
Technology	1.08	0.87	0.81
Human capital	2.27	3.03	2.66
Factor category shares of exports to the world (%):			
Agricultural resources	3.1	2.8	2.0
Mineral resources	2.6	3.2	2.3
Unskilled labour	19.1	12.1	10.6
Technology	26.3	21.0	23.4
Human capital	48.9	60.9	61.7
Factor category shares of exports to China (%):			
Agricultural resources	3.6	3.6	2.2
Mineral resources	2.3	1.8	2.8
Unskilled labour	10.0	10.7	6.4
Technology	38.6	41.5	31.2
Human capital	45.5	42.3	57.4

Sources: The 'revealed' comparative advantage index was computed from data in various issues of United Nations, *Yearbook of International Trade Statistics*. The factor category shares of Japan's exports were computed from data in various issues of United Nations, *Commodity Trade Statistics*.

intensive in human capital increased their contribution to total sales to China from 45.5 per cent to 57.4 per cent. Although iron and steel products[20] were down by some 10 per cent, this decline was more than made up largely by television receivers, lorries, motor vehicles and telecommunication equipment.

The weakening in Japan's international competitiveness in products intensive in technology, as shown in the upper section of Table 5, was also related to the restructuring process of the Japanese industry. In the Chinese context this resulted in a drop in the share of chemicals, in particular manufactured fertilizers, and to a lesser extent it affected heavy machinery.

By comparison, the steep decline in Japan's global comparative advantage in unskilled labour-intensive goods reflected erosion of basic competitiveness rather than industrial adjustment (OECD, July 1982, p. 39). Higher wage costs rendered import-competing light manufacturing industries increasingly uncompetitive. As shown in the middle section of Table 5, by 1980 Japan had switched from being a leading exporter to being a significant importer of products intensive in unskilled labour. In 1985 their share in total exports accounted for only 10.6 per cent. This development was, however, only marginally reflected in Japan's export trade with the PRC. Given the latter's extremely strong comparative advantage in unskilled labour-intensive manufactures established in world markets complementarity would have been low anyway.

Table 5 enforces our previous observations concerning Japan's endowment of agricultural and mineral resources in both of which she has a most severe comparative disadvantage. In fact, Japan is the largest net importer of farm products in the world [George (1987, p. 63)]. In a similar vein, she imports virtually all of her energy supplies and the major proportion of her raw materials. What is more, our figures also reflect the gradual decline in the importance of Japan's agriculture. Agrarian land there becomes more and more limited making it much more efficient to use rural labour elsewhere in the economy. Thus Japan's exports of agricultural produce and minerals are negligible which is duly reflected in the Chinese context. As discussed above, it must also be remembered that China herself has a comparative advantage in these commodities which account for more than half of her world export trade.

3. Commodity Composition of Japan's Exports to China

Japan's export trade with China was preponderantly focused on machinery and transport equipment (SITC 7) and basic manufactures (SITC 6), increasingly on the former and decreasingly on the latter. Initially, chemicals (SITC 5) also made up a significant proportion, but the 1980s clearly reflected the decline in the share of semi-industrial materials including chemicals, the trend away from high-polluting industries. As Table 6 shows, the contribution of the other sections was negligible. Apart from the shifts mentioned above, the commodity composition remained basically unchanged during the period under analysis. Iron and steel universal plates and sheets constituted the single most important export commodity in each of the three sample years.

Japan's export trade with China depended almost exclusively on the manufacturing

[20] Iron and steel products are classified as human capital-intensive goods.

TABLE 6. COMMODITY COMPOSITION OF JAPAN'S EXPORTS TO CHINA BY ONE-DIGIT SITC SECTIONS

	1975		1980		1985	
SITC	(US$1,000)	(%)	(US$1,000)	(%)	(US$1,000)	(%)
0	—	—	970	0.0	18,661	0.1
1	—	—	—	—	804	0.0
2	80,145	3.6	174,342	3.4	246,273	2.0
3	1,272	0.1	4,309	0.1	13,811	0.1
4	—	—	2,062	0.0	5,441	0.0
5	452,005	20.0	542,897	10.7	707,726	5.7
6	1,010,507	44.8	2,088,719	41.2	4,077,136	32.7
7	674,542	29.9	2,034,446	40.1	6,740,834	54.0
8	20,903	0.9	165,179	3.3	538,819	4.3
9	16,126	0.7	60,785	1.2	137,740	1.1

Note: SITC sections 0 to 9 do not add up to the total Japanese-PRC export values shown in Table 2, because the United Nations' commodity trade statistics occasionally lump China's trade in with that of other "Asian Planned Economies.' However, the discrepancies are negligible.

Source: Figures were compiled from data in various issues of United Nations, *Commodity Trade Statistics.*

sector, with the share of manufactures—SITC sections 5 to 8 excluding non-ferrous metals (SITC division 68)—increasing from 93.5 per cent in 1975 to 95.4 per cent in 1985. By comparison, the proportion of primary products—SITC sections 0 to 4 including non-ferrous metals—dropped from 5.8 per cent to 3.5 per cent during the corresponding period. This commodity structure accorded entirely with the LTTA which stipulated that Japan would supply China with technology and plants,[21] together with construction materials, machinery and parts (*China Foreign Trade*, No. 2, 1979, pp. 2–3).

VI. *Bilateral Trade Prospects*

Above analysis on the relative importance of two-way trade between China and Japan vis-a-vis the rest of the world revealed an intense bilateral trading relationship. It should be noted that the fall in Japan's export trade intensity with China between 1975 and 1985 reflects the scale of Japan's trade growth relative to world trade growth rather than a decline in Sino-Jahanese trade. But even though Japan's overseas dependence was global and China was also striving to diversify her economic partnerships, only a in few instances did China and/or Japan register a higher trade intensity index with a third country (see Table 1). In other words, Sino-Japanese trade was characterised by a high degree of interdependence.

In 1975–1985, Japan continued to maintain her long-held position as China's single largest trading partner. What is more, China became Japan's second largest market. The value of trade under the extended LTTA (1985–1990) was increased two- to three-fold, i.e. from close to US$20 billion in 1985 (see Table 2) to a total bilateral trade of between

[21] The Baoshan Iron and Steel Works in Shanghai was the first complete plant imported under this agreement (*China Foreign Trade*, No. 2, 1979, p. 3).

US$40 billion to US$60 billion [Payne (1982, p. 268)]. Indeed, given China's relatively small share in Japan's total trade at the end of the period under analysis, there appears to be considerable potential for further expansion.

Japan is dependent on imports, principally of Middle East oil, for over 90 per cent of her energy requirements [Drysdale (1988, p. 136)]. Political instability in that part of the world and the long shipping route from the Persian Gulf are factors recommending that Japan diversify her sources of energy. In 1980 the Japanese government became increasingly involved in the development of China's energy resources, such as the oil fields in the southern part of China's Bohai Gulf [Payne (1982, p. 271)]. Since supply across the China Sea is fast, cheap and comparatively safe, in the years ahead China is likely to figure more largely in Japan's energy picture.

Trade complementarity between the two countries was very strong and increased in the decade up to 1985. It existed for goods intensive in human capital (Japanese exports) and for agricultural and mineral resources (Chinese exports), and this is where the bulk of two-way trade was conducted. In fact, Japan had her strongest global comparative advantage in human capital-intensive products, one of the two areas in which China is least competitive. According to Keesing and Sherk (1971, p. 960), developing countries have their most severe comparative disadvantage in the production of machinery and transport equipment (SITC 7). Indeed, China's 'revealed' comparative advantage for this particular section stood at 0.17 in 1975 and at 0.14 in 1985, compared with Japan's indexes of 1.77 and 1.75 respectively. Industrially advanced Japan and developing China are obviously endowed with such markedly different resources as to allow the very broadest scope for bilateral specialisation. Thus the Japan-China trading relationship is firmly based on the strong complementarity of the two economies with both countries gaining substantially from it.

The analysis here presented suggests that dissimilar resource endowments will continue to constitute the dynamic element in Sino-Japanese trade. China's trade has shifted significantly toward the industrially advanced countries in general as a consequence of her new foreign trade policies and practices. They are the more or less homogenous industrialised nations with similar global comparative advantages, specialising in the international trade of sophisticated manufactures. In fact, the structure of Japan's exports to and imports from China corresponds very closely to that of the EEC, China's biggest trading partner until the late 1960s (Statistical Office of the European Communities, February 1981, p. 16). The advantages of location have undoubtedly helped Japan take over as China's leading trading partner and bring about a rapid increase in her lead. Last not least, the Sino-Japanese trading relationship is underpinned by common historical and cultural roots dating back to over two thousand years [Payne (1982, p. 273)].

Having examined a decade of trade performance in 1975–1985 and identified the factors that facilitate trade the picture that emerges turns out to be a most favourable one. A high level of complementarity between the Chinese and Japanese economies, geographical proximity, and historical and cultural ties all combine to provide the ideal environment for bilateral trade to thrive. Thus the conclusion is inescapable that the prospects for the growth of Japan-China trade in the 1990s and beyond are bright.

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