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The Changing Pattern of China's Agricultural Trade

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The Issue

Economic reforms and rapid economic growth in the past twenty years have encouraged increased imports of foreign agricultural products into China. While becoming a potential market for agri-food exporters, China has also grown into a major competitor in international agri-food markets, particularly in Asia. As China is likely to join the World Trade Organization (WTO) in the foreseeable future, an accurate account of China's agricultural trade pattern is particularly relevant and timely. The issue of whether or not China's agricultural trade in the reform era has increasingly reflected its resource endowments is investigated in this paper using Statistics Canada trade data. The advantage of using Statistics Canada trade data is that Hong Kong export statistics are used to approximate China's actual imports from Hong Kong. This is done because official import data from China's customs statistics don't include agricultural products that enter China through unofficial channels, including extensive re-exports to China from Hong Kong.

Implications and Conclusions

The analysis in this paper suggests that, even with strong government intervention in bulk commodities such as grain and oilseeds, the trade liberalization measures adopted by China since 1991 have pushed China's agricultural trade to become more consistent with its resource endowment, in exporting more labour-intensive agricultural products and importing more land-intensive agricultural products. Implementation of China's WTO commitments will likely further encourage China's agricultural trade to expand along comparative advantage

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lines. This being the case, bulk commodity exporters might expect increased export market opportunities in China in the future.

Background

China's overall trade pattern in the reform era has become more consistent with its comparative advantage (Yeats, 1991; Lardy, 1994; Naughton, 1996). Has this happened in agriculture? Evidence appears to be mixed. A number of agricultural economists have argued that China's agricultural trade in the reform era has increasingly reflected its resource endowments, in exporting more labour-intensive agricultural products and importing more land-intensive agricultural products (Huang, 1995; Wang, 1997; Huang et al., 2000). In contrast, Carter (1999) finds little evidence of increased reliance on comparative advantage in China's agriculture in the reform era. Timing of the studies, as well as differences in data sources and definitions regarding which commodities make up agricultural trade may contribute to the conflicting findings. In addition, a common shortcoming of these studies is that unofficial agricultural re-exports from Hong Kong to China have not been explicitly accounted for. Hong Kong re-exports to China are products that are destined for China but cross the territory before reaching their destination. These products are often not included in China's official import statistics because importers tend to use unofficial methods such as underinvoicing and misdeclaring to bring in the products (FAS, 1999; Carter, 1999). As a result, agricultural import numbers derived from China's customs statistics likely underestimate the actual agricultural imports into China. For example, based on Hong Kong trade statistics, $1.74 billion worth of agri-food was re-exported to China from Hong Kong in 1995, but China's customs statistics reported only $99 million worth of agri-food imports from Hong Kong for the same year (Wang, 1997). In other words, unofficial agri-food exports from Hong Kong to China in

Figure 1 China's agri-food imports from and exports to the world, 1980–97 (adjusted for unofficial re-exports from Hong Kong)

1995 alone could amount to $1.65 billion. To deal with the extent of such unofficial agricultural re-exports to China from Hong Kong, Hong Kong export statistics are used to approximate China's actual imports from Hong Kong in this research. Figure 1 presents China's agricultural imports and exports over the period 1980 to 1997, adjusted for Hong Kong's unofficial re-exports to China.

Factor Endowment Theory of Comparative Advantage

According to the standard factor endowment theory of comparative advantage, a country tends to be a net exporter of goods which require relatively intensive use of its relatively abundant factors of production, and a net importer of commodities which need relatively intensive use of the country's relatively scarce factors (Wong, 1997, pp. 91-95). As China is a labour-abundant country with a relatively poor endowment of arable land, China is expected to be a net exporter of labour-intensive products and a net importer of land-intensive commodities. To examine whether or not China's agricultural trade has increasingly reflected its resource endowments, it would be ideal to classify China's agricultural trade data into broad categories based on their actual factor intensity. Unfortunately, such information is often difficult to obtain.

Following Wang (1997), the study reported here aggregates the trade data in the four-digit Standard International Trade Classification (SITC) level from Statistics Canada into bulk commodities, processed intermediate goods, horticultural products and consumer-ready goods. The classification is ad hoc in the sense that it is based on the product's perceived factor intensity, its degree of processing, and its readiness for direct consumption. Bulk commodities are unpackaged products that are inexpensive to ship, including grains, oilseeds, and plant-based fibres such as cotton, raw rubber, raw sugar, and nonmanufactured tobacco. Land use accounts for a significant share of the production costs for bulk production compared with the other commodity groups. Processed intermediate products are goods derived from bulk commodities that need further processing for human consumption. They include flour, feed, live animals, animal fats/oils, and animal-based fibres such as wool. Horticultural products are consumer-ready, unprocessed fresh commodities such as fresh fruits, vegetables, and flowers. Consumer-ready products are commodities that have been significantly transformed with high value added such as preserved vegetables, fish, fruits and nuts, fresh and frozen meats, eggs, dairy products, processed meats, manufactured tobacco, and beverages. Bulk commodities are considered to be relatively more land intensive, while consumer-ready processed products are relatively more labour intensive. Processed intermediate commodities and horticultural products fall in between, though the former are judged to be more land intensive and the latter more labour intensive.

China's exports and imports by these four categories from 1992 to 1996 are presented in table 1 along with figures from Wang (1997) and Carter (1999). Their figures are based on

Table 1 China's Agricultural Exports and Imports by Product Categories, 1992–1996 (million $ US)

	1992		1993		1994		1995		1996	
Commodity type	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
(Wang 1997*)										
Bulk commodities							1,045	6,468	1,081	4,608
Processed intermediates							3,647	4,891	3,732	4,592
Horticultural products							1,538	167	1,495	145
Consumer-ready products							4,347	344	4,280	323
Total agriculture							10,577	11,870	10,588	9,669
(Carter 1999*)										
Bulk commodities	2,698	2,504	2,644	1,206	2,763	2,686	1,034	5,989	1,081	4,610
Processed intermediates	3,229	2,100	3,053	1,845	3,835	3,435	3,573	4,831	3,723	4,534
Horticultural products	1,069	118	1,180	106	1,559	133	1,578	296	1,526	350
Consumer-ready products	2,193	208	2,281	251	2,844	324	3,718	260	4,279	443
Total agriculture	9,189	4,930	9,158	3,408	11,001	6,578	9,902	11,376	10,609	9,936
(Statistics Canada)										
Bulk commodities	1,868	2,207	1,770	1,137	1,969	1,501	616	4,388	683	3,859
Processed intermediates	2,187	1,835	2,147	1,686	2,746	3,705	2,379	5,168	2,547	5,120
Horticultural products	1,281	203	1,324	207	1,796	219	1,843	353	1,756	522
Consumer-ready products	2,941	507	3,048	600	3,399	805	4,313	1,192	4,498	1,465
Total agriculture	8,276	4,754	8,288	3,630	9,909	6,229	9,151	11,100	9,484	11,047

*Compiled from China's customs statistics, aggregated according to USDA's classifications.

China's customs statistics but aggregated according to USDA's classifications. As 80 percent of Hong Kong's re-exports to China are consumer-ready and horticultural products, it is expected that the Statistics Canada-based import numbers of these two categories should be much higher than those reported in both Wang and Carter. This is confirmed by the data. Surprisingly, however, the total agricultural imports are less than those reported in both Wang and Carter except for 1996. Specific sources of such discrepancies are unclear. Factors such as different data sources, different data classification systems, and accounting for unofficial imports from Hong Kong could be responsible for the observed discrepancies. A point is that any finding regarding the pattern of China's agricultural trade is contingent on which trade data are used and whether or not unofficial imports from Hong Kong are dealt with.

Pattern of China's Agricultural Trade

Figure 2 presents China's agricultural trade balance from 1980 to 1997. On average, from 1980 to 1997, China was a net importer of bulk commodities, a net exporter of consumer-ready commodities, and a net exporter of horticultural products. China was a net exporter of processed intermediate commodities until 1993 and then became a net importer afterwards. These results appear to support Wang's observation that China's pattern of agricultural trade is broadly consistent with its resource endowment, being a net importer of bulk and processed intermediates and a net exporter of horticultural and consumer-ready processed goods. These results are not surprising, as Carter (1999) observes that, even under central

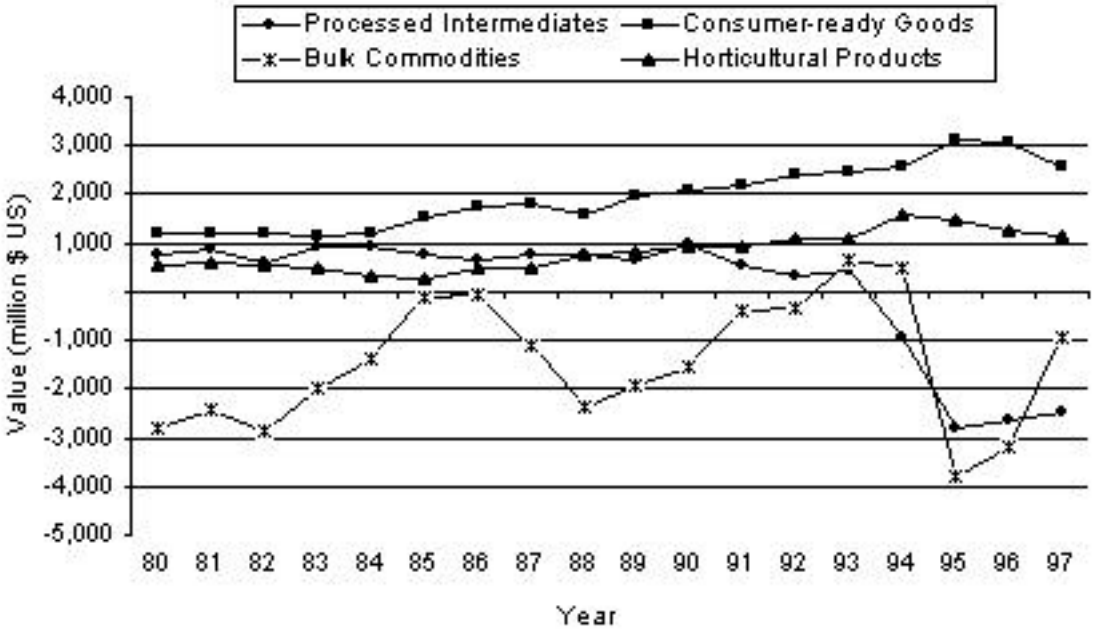

Figure 2 China's trade balance in agri-food products by categories, 1980–1997 (adjusted for unofficial re-exports from Hong Kong)

planning, the obviousness of comparative advantage was such that, in general terms, China's agricultural trade corresponded to basic principles of comparative advantage.

Two further observations can be made from figure 2. First, the pattern of China's agricultural trade crucially depends on the timelines. For example, as reported in Wang (1997), in 1995 and 1996, China was clearly a net importer of bulk and processed intermediates and a net exporter of horticultural and consumer-ready processed goods. However, in 1993, China was a net exporter of all four categories. In other words, studies based on the trade data from different periods may well produce conflicting findings. Second, China has increasingly become a net exporter of horticultural and consumer-ready products and a net importer of bulk and processed intermediate commodities since 1991. Though one may argue that negative trade balances in 1995 and 1996 for bulk commodities may have been caused by China's grain export embargo in 1995 (Carter, 1999), it is difficult to explain the negative trade balances for processed intermediate commodities using the same analog. This lends some support to the view that China's agricultural trade in the reform era has increasingly reflected its resource endowments. Since 1991, China has been trying seriously to establish a trading system that conforms to general international trade rules in order to join the WTO. The post-1991 era is characterized as the third stage of trade reforms (for example, see Ying, 1996). These efforts include the gradual commercialization of state trading, the phasing out of trade subsidies, trade de-monopolization, tariff reduction, and the replacing of planned quotas with a tariff-rate quota system. The results reported here appear to suggest that these trade-liberal-

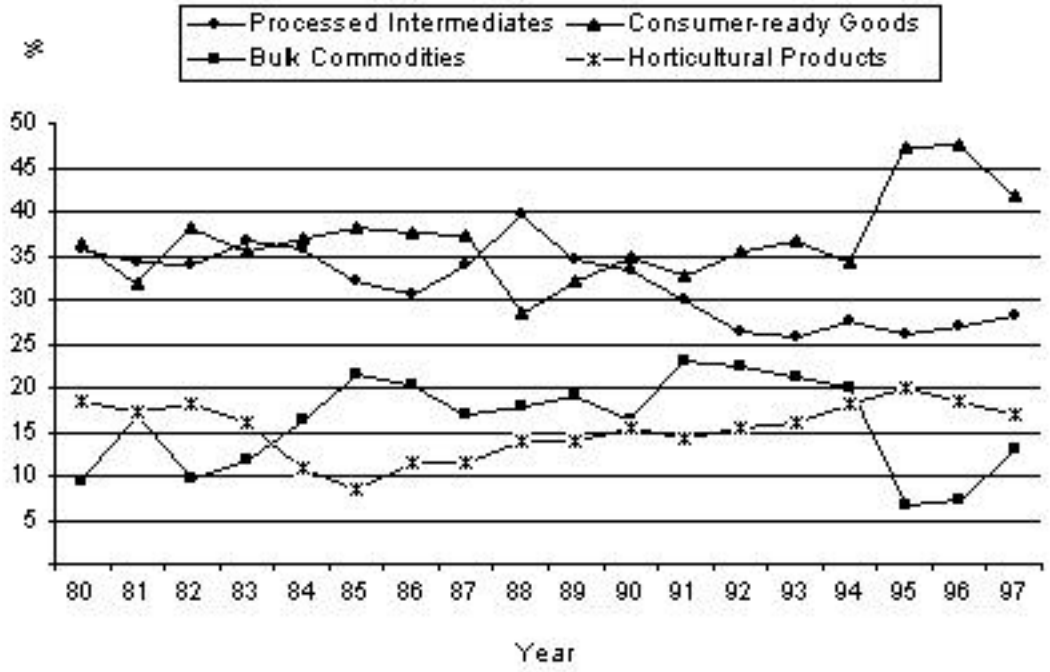

Figure 3 The structure of China's agri-food exports, 1980–1997

ization measures have pushed China's agricultural trade to become more consistent with its resource endowments.

The puzzle is that China's net trade in bulk commodities has fluctuated widely from year to year. For example, in 1993 and 1994, China actually became a modest net exporter of bulk commodities. Yet, in 1995 and 1996, China recorded its two largest negative net trade figures in bulk commodities. It is also likely that China has again become a modest net exporter of bulk commodities since 1997. This is at odds with China's resource endowments, as one would expect China to be a consistent net importer of land-intensive bulk commodities. This erratic trading nature in bulk commodities likely reflects China's export expansion and food self-sufficiency policies. It is interesting to note that the structure of China's agricultural exports was relatively stable until 1991 (figure 3). Changes appear to have happened after 1991. The proportion of bulk commodities in China's agricultural exports reached a peak in 1991 and has declined since then. The large decrease in the proportion of bulk commodities in 1995 and 1996 may have been caused by China's grain export embargo in 1995 (Carter, 1999). It is worth noting that the proportion of processed intermediate commodities exhibited a downward trend throughout the period. At the same time, the shares of consumer-ready and horticultural products increased after 1991. These export patterns appear to be consistent with China's resource endowment.

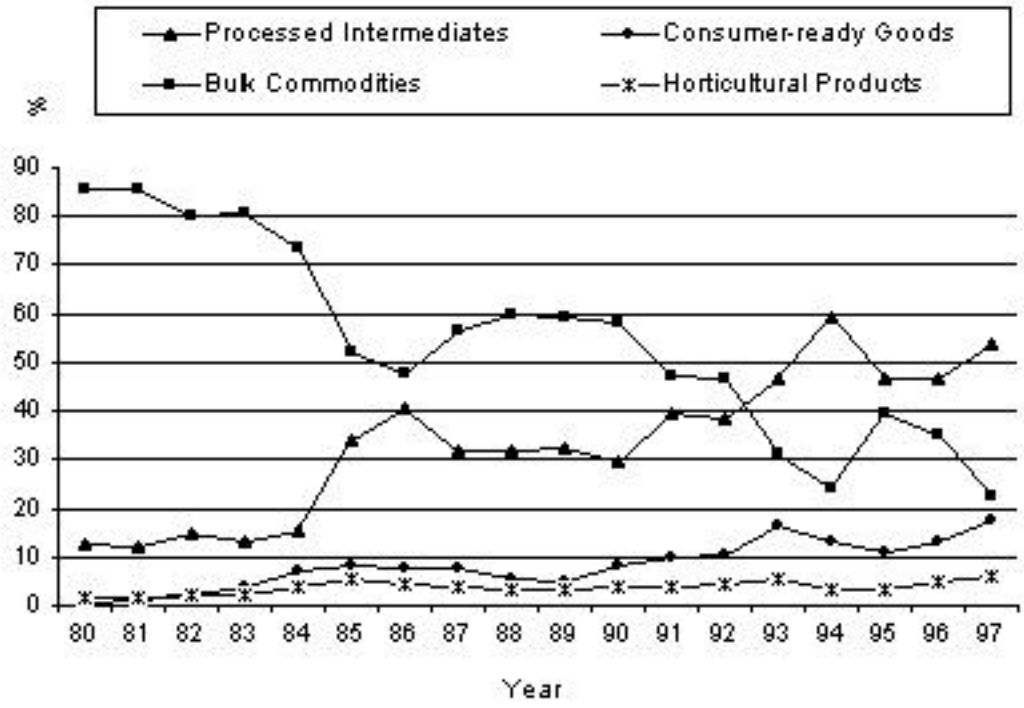

Figure 4 The structure of China's agri-food imports by categories, 1980–1997 (adjusted for unofficial re-exports from Hong Kong)

Contrary to Carter's (1999) findings, which were based on a shorter time period, the structure of China's agri-food imports appears to have evolved during the 1980 to 1997 period (see figure 4). While there was a clear upward trend for processed intermediate commodities, the import shares for horticultural and consumer-ready products were rather stable, and the import share for bulk commodities fluctuated widely and exhibited a declining trend. The declining share of land-intensive products, such as bulk commodities, in total agri-food imports is puzzling. One possible explanation could again lie with the government pursuit of self-sufficiency in the grain sector. However, the rising share of processed intermediate commodities suggests that government pursuit of self-sufficiency in the grain sector may have induced some substitution between bulk and processed intermediate commodities during the 1980 to 1997 period. This again suggests that China's agricultural trade pattern has increasingly reflected its resource endowments.

Conclusions

A large percentage of Hong Kong's agricultural exports enter China unofficially and are not recorded in China's customs statistics; therefore, Hong Kong export statistics are used to approximate China's actual imports from Hong Kong in order to account for these unofficial re-exports. The analysis reported here suggests that between 1980 and 1997 China's pattern of agricultural trade was broadly consistent with its resource endowment; during those years, the country was a net importer of bulk and processed intermediate commodities and a net exporter of horticultural and consumer-ready processed goods. However, the adoption of China's export expansion and grain self-sufficiency policies may have caused trade patterns to diverge from what might be expected from China's resource endowment. Even with such strong government intervention in bulk commodities, the trade liberalization measures adopted by China since 1991 appeared to have pushed China's agricultural trade to become more consistent with its resource endowments.

Following China's bilateral WTO accession agreement with the United States on November 15, 1999, China and the European Union (EU) reached a market access agreement on May 19, 2000, removing the last remaining barrier to China's 14-year effort to join the World Trade Organization (WTO). Under the terms of these agreements, China has committed to substantial reduction in trade barriers (ERS, 2000). Implementation of China's WTO commitments will likely push China's agricultural trade to expand further along comparative advantage lines. For bulk commodity exporters, one might expect increased export market opportunities in the future. The exact level and timing of China's import growth in bulk commodities due to its entry to the WTO will depend crucially on China's desire and ability to continue its grain self-sufficiency policies.

A final point is that the findings reported here are derived from Statistics Canada trade data. Though Statistics Canada trade data have the advantage of accounting for unofficial

imports from Hong Kong to China, it is unclear how comparable these particular trade data are to other trade data, such as those compiled using China's customs statistics. This research clearly demonstrates the need to reconcile discrepancies among different trade data before a more reliable assessment of the pattern of China's agricultural trade can be achieved. This, of course, will be a formidable task for anyone to undertake.

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