

The Evolution of Domestic Trade Flows When Foreign Trade is Liberalized: Evidence from the *Chinese Maritime Customs Service*¹

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Abstract

The impact that international trade has on domestic trade is especially significant in the case of China in the 19th century when the British forced the opening of China to international trade. In this paper, we demonstrate how the information collected by the *Chinese Maritime Customs Service* (henceforth the CMC) can be used to study trade flows and the relationship between domestic and international trade. This paper focuses on three main treaty ports: Shanghai, Hankou, and Guangzhou. We examine the geographic flows of domestic goods destined for foreign markets, and, the port-to-port distribution of foreign goods within China. We find that different markets responded quite differently to the opening of trade. During the 1870-1900 period, 40% to 50% of the imported Chinese-produced goods to Shanghai were re-exported abroad. In Guangzhou, by contrast, most of the imported Chinese-produced goods were locally consumed. Over time, net imports of foreign goods trended upwards in Shanghai, while the net imports of Chinese goods trended downward, and this effect appears to be more pronounced in Shanghai than in the other two ports.

JEL N45, F13, N25, N75, F15

Keywords treaty port, trade openness, colonialism, China, entrepôt, re-exports

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1 Introduction

Little is known about the interaction between domestic and international trade because of the paucity of data on domestic trade. The opening of international trade may change, for example, the extent of domestic market integration as more domestic goods are moved to ports that serve foreign markets. In addition, domestic infrastructure and market networks can also be expected to adapt as a greater volume of foreign goods are imported and subsequently distributed to different domestic market locations. Furthermore, as new goods are introduced by domestic producers to the foreign market, these Chinese-produced goods (what are commonly termed ‘native goods’) may occupy new and separate trading networks.³

The impact that international trade has on domestic trade is especially significant in the case of China in the 19th century when the British forced the opening of Chinese ports to Western traders. Although China was not in complete autarky at the time, foreign trade was severely limited by imperial decree and any trade that did take place between Britain and China was not free trade, but a meeting of national monopolies. While the British East India Company lost its monopoly, the Treaty of Nanjing (1842) began to transform the trade environment in China. The treaty abolished the *co-hong* system that limited trade to guild merchants operating out of Guangzhou. In addition, four additional treaty ports (that is, ports that were permitted by treaty to trade with foreign countries) were opened: these were Xiamen, Fuzhou, Ningbo, and Shanghai. The treaty, in addition, stipulated that trade duties on foreign goods should be limited to 5% *ad valorem*.

The Treaty of Tianjin (1858) with Britain, the U.S., France, and Russia opened yet more treaty ports, and it also laid the foundation for foreign trade policies in China in essential ways. The most important of the clauses of the Treaty allowed duties to be collected in the same system across all treaty ports. In theory, this implied that foreign goods would be taxed only once upon entry into China and

³ A recent contribution is Holmes and Stevens (2010) who distinguish between internal and external flows using the U.S Commodity Flows Survey. Our approach is different, as we do not examine firm-level trade and focus on the geographical organization of trade within a country.

thereafter be exempt from further duties even if the goods were transported further inland. Among other rights granted to foreign traders and residents, foreign vessels were permitted on the Yangzi River and foreign merchants could also employ Chinese ships to carry their goods.

In this paper, we consider the opening of China to trade and demonstrate how the information collected by the *Chinese Maritime Customs Service* (henceforth the CMC) can be used to study trade flows and the relationship between domestic and international trade. The CMC emerged in the aftermath of the Second Opium War (1856-1860) and political chaos in China. Although China had a pre-existing customs revenue system, a different organization was needed in order to enforce the new international trade agreements.

The CMC assessed and monitored the tariffs due on goods shipped through the treaty ports. These included import duties on foreign vessels, export duties on Chinese produced goods shipped abroad, and duties on foreign and Chinese goods passing through or delivered at treaty ports. The CMC employed a Chinese staff, but it came to be dominated by foreign, and in particular, British nationals. Thus, it was a western organization providing the functions of tariff revenue assessment for China, whose approach to collecting tariffs had the advantage of being more systematic and less arbitrary than its predecessor.

The CMC's statistical records on trade are contained primarily in the *Returns of Trade*, with additional statistics and more descriptive accounts available in the *Trade Reports* and *Special Collections*. From the start of the CMC in 1859 to its end in 1948, records on trade were entered annually. The number of treaty ports and Customs houses expanded until there were over 40 by the year 1907. Previous studies have overviewed the institutional features of the CMC organization and have provided broad outlines of some of the contents in the CMC trade data.⁴ No study, however, has yet been able to fully capture the detailed complexities contained in

⁴ Lyons (2003) outlines the contents of the CMC data and also paints a detailed portrait of the tea trade at several Chinese ports. On the institutional history of the CMC, see van den Ven (2004), Brunero (2004), and Bickers (2008).

these trade data, and much less has been done in terms of attempting to interpret what the data actually reveal about economic conditions.

This paper attempts to set the stage for our ongoing research on the CMC by exploring the connection between domestic and international networks of trade at times of trade liberalization⁵. The main contribution is to show that these data can potentially be used for this purpose. We focus on just three ports, Shanghai, Guangzhou, and Hankou, but the application can be in principle extended to include many more ports. This type of quantitative analysis can usefully complement the many descriptive accounts of the period that currently exist.⁶

The remainder of this paper is organized as follows. Section 2 discusses the trade data in the CMC records. Section 3 presents some statistics from the CMC that sheds light on the organization of foreign and domestic trade in China. Section 4 summarizes our key findings and proposes avenues for future research.

2 Trade data in the CMC Records

Perhaps the most notable aspect of the CMC trade records is that they capture trade flows that are usually difficult or impossible to obtain even in developed countries today. Most data on international trade treat the country as the unit of observation. By contrast, the CMC recorded information not only by country, but by port. That is, the unit of observation is not country-to-country trade, but rather country to port-of-entry trade, where the port is treated independently as if it were a country. This allows for interpretations that take international trade flows to the intra-national level because the data effectively integrate domestic trade with international trade. This unique perspective of the movement of goods had much to do with the political circumstances at the time, when the treaty ports of China were treated like an enclave over which certain foreign countries had trading rights.

⁵ See also Keller, Li, Shiue (2011).

⁶ See Morse 1926 and Fairbank 1978 on the history of the opening of China to foreign trade. See also Mizoguchi and Umemura 1988 on the CMC archive and the history of Taiwan; and Kose 1994, 2005 on the emergence of China in the early 20th century.

The following graph illustrates the nature of the information contained in the CMC reports in more detail. Figure 1 shows the trade flows to and from Shanghai, for example, that were reported by the CMC. We have decomposed and labeled these flows from one to nine. A first distinction is by type of good; flows 1 to 4 concern goods that are produced abroad (foreign goods), while flows 5 to 9 show trade in goods that are produced in China (Chinese-produced goods). Flow 1 gives the imports of goods from Japan to Shanghai. Other imports of foreign goods to Shanghai consist of those coming from other Chinese treaty ports; in the figure, Flow 4 is foreign goods reaching Shanghai via Xiamen. Once imported into Shanghai, these foreign goods may be re-exported. The CMC data allow us to distinguish between re-exports of foreign goods to foreign countries (flow 2) or to other treaty ports within China (flow 3).

Access to new foreign goods to consumers in Shanghai will raise their standard of living. The CMC data allows us to quantify certain dimensions of this access. Specifically, the statistics on re-exports of foreign goods provide not only key information on the extent to which foreign imports diffused throughout the country, something that should have important welfare implications in the case of a large country such as China; but it also affords us a direct measure of the consumption of foreign goods in the treaty ports as within-port foreign goods consumption may be obtained by subtracting re-exports from foreign imports. The level of detail of information in the CMC statistics varies over the period of 1859 to 1948 and across ports. Typically, port-level imports net of re-exports to both domestic and foreign destinations are available at the commodity level. In addition, for aggregate trade and for key commodities, specific re-exporting destinations, whether that is to a Chinese treaty port or to foreign country, are available for certain years..

The CMC data also identify, separately from foreign goods trade, trade in Chinese-produced goods. Flow 5, for example, shows Chinese-produced goods that are exported from Shanghai to foreign countries. These exports are direct exports in the sense that the goods are produced in the Greater Shanghai area. The direct

exports are to be distinguished from other Chinese-produced goods that are exported abroad from Shanghai but were produced elsewhere in China (flow 6). Both direct exports and re-exports capture major aspects of the evolution of an economy. In particular, the size of direct exports demonstrates the change in the production possibilities of local economies, while the extent of re-exports sheds light on the development (and trade integration) of the hinterland as well as the capacities of the entrepôts (here, Shanghai).

Flow 7 represents Shanghai-produced goods that are exported to other parts of China, whereas flow 8 gives the export of Chinese-produced goods that flow from one region of China to another through Shanghai. The information on domestic exports of Chinese-produced goods at the port-level is thus comparable to the information on foreign exports. Finally, flow 9 shows Shanghai's imports of Chinese goods that were produced elsewhere in China. The level of detail with which the Chinese trade in domestic goods is comparable to the trade in foreign-produced goods discussed above.

In this elaborate system, in order to assess trade duties the CMC staff recorded the quantity (tonnage) and value of the goods carried. For example, in 1881, one can find over 20 different categories of Cotton Goods being imported (from Velvets and Velveteens to Turkey Red Cloths), at least 10 different varieties of Woolen Goods, and some 70 different Sundries that included Window Glass, Alpaca Umbrellas, Needles, and Dried Clams. From 1875 until around 1933, values were reported in terms of silver, the Customs tael (or *haiguan liang*). Rates of exchange between the Customs tael and the local currency existed for each port and were also reported by the CMC.⁷

The data on the total tonnage of goods are divided not only between foreign and native goods, interprovincial goods, but also between ships and steamers, as well as nationalities. Here, certain qualifications need to be kept in mind. First, there was a certain progression of learning on the part of the CMC, so that it was not

⁷ Between 1875 and 1933, there were more variations. Currency units for value included the Spanish dollar, the British pound, local currency, Gold units, Gold Dollar, and the Chinese dollar.

until 1867 that more uniform and accurate methods of accounting were put in place.⁸ Second, the statistics do not refer to all the trade of China, but only to the trade through treaty ports, and of this trade, only that part of it that was carried on foreign vessels or on Chinese ships of the foreign type (that is, steamers). The foreign-flag vessels included not only ships, but also those transports which went overland to Russia. Initially, the CMC did not attempt to capture any part of the domestic trade that was carried on Chinese junks throughout the empire, and which was not destined for international trade. However, from the year 1901 on, the CMC also took over responsibility of Native Customs stations within 25 kilometers of open ports and began to collect data on trade going through those stations as well.⁹ The records on flows of those Chinese-produced goods were published in separate tables.

Despite these qualifications, the trade statistics are broadly consistent, both internally to other numbers reported by the CMC as well as with foreign partner trade records.¹⁰ Many treaty ports were located along rivers or coastal ports and most foreign goods entered through one of the treaty ports.¹¹ After the Treaty of Tianjin(1858) entered into force, the CMC data accounted for 80-90% of all foreign trade in China, and the coverage of the CMC data by the year 1904 was essentially one hundred percent.¹²

⁸ According to Robert Hart, the Inspector General of the CMC from 1863-1911 and one of the most influential individuals in the history of the Service, in his preface to *Trade Statistics*, compiled for the Austro-Hungarian Universal Exhibition.

⁹ Lyons (p. 66): after 1900, “[t]rade in foreign flag vessels, Chinese-flag vessels of Western type, and Chinese junks trading to Hong Kong and Macao; also overland to Russia and to French and British possessions bordering China.” After 1900, foreign includes Hong Kong, Macao, and Taiwan.

¹⁰ See Lyons, pages.31-32, for further discussion on accuracy and on the relatively modest worry that smuggling might represent.

¹¹ The main exceptions include the entry of opium prior to 1880s and illegal exports of gold and silver in the 1929-1930 because of fluctuations in world prices. The CMC organized a Preventive Department in 1931 in response to patrol the coast.

¹² The annual CMC *Returns to Trade* reports reveal that the only significant portion of foreign trade initially not covered by the CMC statistics had to do with traffic on Chinese junks from the Guangdong province to Hong Kong and Macao. With the opening of the customs stations in Lappa (near Macao) and Kowloon (opposite Hong Kong island) in the year 1886, this trade was extensively recorded in the CMC statistics. As for its magnitude, in the year 1887, for example, foreign imports in Kowloon and Lappa accounted for 7% of all imports of China (CMC 2001, volume 14, p.24). Hsiao cites CMC

There were certainly some changes in the coverage and definitions during the 90 years that the CMC was in operation in mainland China.¹³ Some of these changes have been identified in previous work.¹⁴ It is worth emphasizing however that the difficulty in using the data does not so much center on the quality of data, since the records as such are of high quality, but rather that one must carefully understand the aims of the compilation and the purpose for which the data were originally intended. The next section gives a brief overview of domestic and international trade in China in the late 19th century, and then discusses how the CMC data links together the two types of trade.

3. Domestic and international trade in China (1859-1900)

This section highlights the size of foreign trade and the geographical flows of domestic trade. From reports of the British East India Company, in 1834 China imported approximately 6 cents per capita and exported were around 3 cents per capita.¹⁵ The opening of trade during this period can be seen in Figures 2 and 3. Figure 2 shows the value¹⁶ of British imports to China from 1828 to 1863 using information from British Parliamentary Reports for the period.¹⁷ There were imports also from other countries, but British goods occupied a significant share of the total. Figure 3 plots the effect of the opening to trade by looking at the change in the total tonnage of British vessels that were exporting Chinese goods.

Between 1840 and 1845, import value increased at an average of 29% per year, and export tonnage increased at a rate of 36% per year. The growth of trade in this early period of opening was neither steady nor linear. Between 1845 and 1854, the trends appeared to plateau or decrease in certain periods. Between 1854 and 1860, imports grew at an average rate of 26%. Figure 4 shows trade expansion in

documents stating that from 1904 onward the CMC data covers “practically the whole foreign trade of China”, Hsiao (1974, p.8).

¹³ The CMC moved to Taiwan in 1949.

¹⁴ See especially pages 69-70 in Lyons (2003).

¹⁵ Greenberg(1851), page 217

¹⁶ The imports are expressed in 1840 British Pound.

¹⁷ These imports include those from Hong Kong.

China trade stagnated again from 1865 to 1885. Overall trade growth averaged 3.5% per year for imports and 2.7% for exports over the period 1865-1900.

Unlike foreign trade, domestic trade in China was not restricted over this period and experienced no institutional changes comparable to the opening of international trade. Interregional trade in staples, beans, cotton, animal products flourished, especially along the coastal and river routes (Myers and Wang 2002, Rowe 2009). Fan-I-Chun (1992) estimates that the revenue collected at the customs houses from brokers engaged in long-distance trade increased at a rate of 1.6% per year from 1668 to 1788. By the end of the 18th century, controlling for distance, the extent of domestic market integration within Chinese provinces was comparable to what was seen within Western European countries (Shiue and Keller 2007).

Even before the modern era, Shanghai and the wider Yangzi Delta area was known for its manufactures of non-agricultural Chinese-produced goods. The density of population in Shanghai, together with relatively high per capita incomes also implied that there would have been high demand for goods from other places. Finally, Shanghai's 19th century treaty port status and coastal location made it a popular location for exporters of Chinese products. The ease with which goods could be transported to and from Shanghai either via the coastal trade or the Yangzi River may help to explain the direction of the trade flows, but the port-to-port trade statistics provide some further evidence of the extent to which these general claims are true.

Table 1 shows the geographical flow of Chinese-produced (native) goods. It shows the percent of imports of Chinese produced goods arriving in Guangzhou, Hankou, and Shanghai, and the different ports from whence the goods came. From 1868 to 1888, more than 50% of all Chinese-produced goods imported to Guangzhou came from Shanghai. Most of those goods imported to Hankou also came from Shanghai, specifically 57.1%. Hankou was also a very important source of Chinese products for Shanghai, accounting for 36.7% of all –Chinese-produced imports. The table also suggests that Shanghai's imports of those goods came from a more geographically diverse set of cities than was the case for either Guangzhou or

Hankou. Chinese-produced goods were imported from all 17 ports in the list, while goods from only 12 ports went to Guangzhou and 11 for Hankou.

Figure 5 gives the value of total imports of Chinese-produced goods going to each of the three ports. There is an upward trend in each case from the early 1870's through to the year 1900, with Guangzhou and Hankou holding to similar levels. Shanghai imported approximately four times more than Guangzhou or Hankou, and also experienced a short period of rapid increase at the end of the 19th century. From 1870 to 1900, imports of Chinese-produced goods from other Chinese cities to Shanghai grew at an annual rate of 10%. This figure is 3.7% for Hankou and 5.5% for Guangzhou. As a certain fraction of Chinese goods sent from port-to-port were destined for export, part of the growth in domestic trade can be ultimately related to the opening of international trade in China. The next section examines this possibility.

i. Relation between domestic trade and international trade

The objective of this section is to look for evidence of a connection between domestic trade and international trade. Shanghai was an important port for the export of Chinese-produced goods and a distribution center for Chinese-produced and foreign products. Goods could be sent downstream to Shanghai along the Yangzi River and its smaller tributaries. Once in Shanghai, these goods could be 1) consumed locally in Shanghai, or 2) re-exported to other Chinese treaty ports, or 3) re-exported to foreign countries. Similarly, imports of foreign goods could be consumed locally in Shanghai (net imports), -re-exported to other Chinese ports, or to a foreign countries (recall Figure 1).

Any growth in the size of domestic trade to a port such as Shanghai, which also exported to foreign countries, could be therefore triggered by the increase in international export volume, as Chinese-produced goods had to be first transported to treaty ports before they could be exported abroad. To examine whether this could be the case, Figure 5 shows how 1)– 3) evolved over time in each of the three

cities. Panel (c) shows that, during the 1870-1900 period, 40% to 50% of the imported Chinese-produced goods to Shanghai were re-exported abroad. In Guangzhou, by contrast, most of the imported Chinese-produced goods were locally consumed (panel (a)). Hankou fell in between, with 10%-20% of those imports re-exported directly abroad (panel (b)). This is some preliminary evidence of a heterogeneous connection between international trade and domestic trade across Chinese ports. On the one hand, in Guangzhou there is no direct evidence that port-to-port imports of Chinese goods were directly related to exports. On the other hand, almost half of the flows converging to Shanghai likely had to do with foreign trade exports.

This analysis might underestimate the impact of international trade on the growth of domestic trade for at least two reasons. First, some of the re-exports of Chinese-produced goods toward other treaty ports may be eventually destined to exports abroad. Of interest is the role of Shanghai in the re-exports of goods from Hankou. In Figure 6, Hankou is characterized by increasing importance of re-exports to Chinese treaty ports. However, most of the growth in domestic re-exports can be attributed to re-exports to Shanghai (the share was 91% in 1888), where a large share of re-exports were exported abroad as shown in panel (c). Secondly, our simple analysis does not account for any indirect effects of international trade on transportation infrastructures that would facilitate domestic trade or the effect on economic growth that would increase demand and supply of local goods.

ii. Imports of foreign goods

The previous sections give evidence that the effect of international trade on domestic trade was fairly heterogeneous across China. We also examine the consumption of foreign goods in a port as total imports net of re-exports to other Chinese ports and to foreign countries. In Figure 7, Panel (a) suggests that foreign goods reached consumers in Shanghai, Hankou and Guangzhou to varying degrees. On average over the period 1872-1900, per-capita consumption of foreign goods

was 50 Customs taels in Shanghai, 17 Customs taels in Hankou and 5 Customs taels in Guangzhou.

Within the framework of a gravity equation, we might interpret the source of these differences as the result of variations either in GDP or in trade frictions. Shanghai might have been more exposed to foreign goods because of its initial higher GDP. This might be why Guangzhou lagged so much behind, despite its coastal location. Shanghai might have been also more exposed to foreign goods because of the difficulty for foreign traders to penetrate the mercantile Chinese system and then to carry goods inland. This type of friction might help to explain why Hankou, although integrated in the Yangzi system, did not benefit from foreign goods as much as Shanghai.

Lastly, the per-capita imports of Chinese goods, net of re-exports, exhibit some of the features already observed for the net imports of foreign goods. The 'Net imports of Chinese-produced goods per capita' is depicted in Panel (b) of Figure 7. In particular, Shanghai was more exposed to imported local goods (23 Customs taels per-capita, on average from 1872 to 1900) than Hankou (9 Customs taels per-capita) and Guangzhou (6 Customs taels per-capita).¹⁸ Here, some of the same mechanisms as for foreign goods might explain the larger exposure in Shanghai. Additionally, Shanghai's position as an entrepot could favor the convergence of local goods toward Shanghai.

Over time, net imports of foreign goods trended upwards in Shanghai, while the net imports of Chinese goods trended downward. As net imports capture the part of imports that are consumed locally in Shanghai, these trends reflect the relative 'foreignness' of average consumption in Shanghai. We might expect the opening of trade to result in the substitution of Chinese products for foreign products. However, this effect appears to be more pronounced in Shanghai than in the other two ports in the sample.

¹⁸ Population figures come from the annual *CMC Returns to Trade*.

To quantify further differences in regional responses to the opening of trade, we use the detailed information from the CMC sources and count the change in the number of varieties traded over the period 1868-1947. We define as a type of good any variety that is categorized under the same name in the CMC record. For example, the group tea in 1872 includes black, green, brick and leaf tea. Within each group, we count the number of varieties that differ either by origin or by further specification. Figure 7 shows the number of foreign cotton varieties available in Shanghai, Guangzhou and some cities along the Yangzi River (Jiujiang, Yichang, Wuhu) from 1875 to 1900. Two observations emerge from this counting exercise: first, in all ports, there was an expansion of imported cotton varieties over time; secondly, there was a heterogeneous penetration of these varieties within the country. Between 1875 and 1900, the number of imported cotton varieties grew at an average rate of 4.5% in Shanghai, 4.1% in Guangzhou and 2.6% in Hankou.

Figure 8 plots the number of foreign cotton varieties available in Guangzhou, Hankou, Shanghai, and three other ports. This figure also suggests that international trade affected different ports differently. Over the period 1875-1900, there were twice as many varieties available in Shanghai compared to varieties available in Guangzhou, and three times as in Hankou. Moreover, there is no sign of convergence between the three ports over time. The case of Hankou is notable as Hankou and Shanghai were well connected by a transportation system along the Yangzi River. The Yangzi was navigable from Shanghai to Hankou by ocean steamer and then by light-draft steamers to Yichang.¹⁹ However, the difference in the number of varieties widened over time between Shanghai and Hankou. By contrast, along the Yangzi River between Hankou and Yichang, the number of cotton varieties converged to approximately 30 foreign varieties, available in 1900, in Wuhu, Jiujiang and Yichang, despite the lower quality of waterways on this part of the river. Differences in GDP between Shanghai and upstream cities may possibly explain this sharp decrease in the number of imported varieties along the Yangzi River.

¹⁹ Feuerwerker, 1980, page 43.

iii. Opening of Trade: A Chinese Story?

The comparative lack of penetration of foreign cotton goods in Chinese markets beyond the coast may be due to a number of reasons. There may have been weak demand for foreign cotton, cheaper substitutes, the difficulty for foreign traders to enter the long-established traditional Chinese trade networks, or other reasons. Rawski (1970) and Meyer (2000) describe how foreign companies had to rely on Chinese middlemen, so called *compradors*, to reach Chinese markets. The trade required trustworthy relationships to keep costs low, and these acquaintances had to be preserved in a complicated network of mercantile relations.

Since the CMC reports the citizenship of traders that were carrying the coastal trade and the transit trade in China, we can examine the nationality of traders by nationality. Transit passes were instituted by the Treaty of Tianjin (1858) and was the first among a number of subsequent international negotiations exempting foreign merchants from further internal transit tolls after paying the required tariff at the port of entry. The transit trade is of particular interest for us as it provides a measure of who carried the trade between the treaty ports regions in inland China, and allows us to examine the regional relationship between foreign trade and the nationality of the trader.

Figure 9 decomposes, by national origin, the different operators doing trade in China from 1875 to 1900. Panel (a) is for the coastal trade and Panel (b) is for transit trade. The results confirm partly Rawski's (1970) and Meyer's (2000) description of the importance of Chinese merchants in carrying foreign goods along the coast and within China. By 1900, 40% of the transit passes and 40% of coastal trade were operated by the Chinese. By the end of the 19th century, most foreign nationals were not involved in carrying trade inland and along the coast. For instance, although the shares of U.S. and Japan in China's total imports increased substantially after the opening of China to trade, reaching respectively 13% and 20%, their participation in coastal and transit had dwindled, suggesting that their operations were transferred to Chinese firms. The one exception was the British,

who maintained their participation in coastal trade at around 50% and in transit trade around 40% throughout the last third of the 19th century.

The strength of the foreign presence in coastal trade aligns well with the fact that markets for foreign goods tended to be located there as well. However, there was an increase in international trade on the coast despite the fact that the foreign presence hardly increased. Overall trade with the U.S. and Japan grew despite the fact that the trades were most likely handled by Chinese middlemen. Moreover, there was a decline in the presence of foreign traders in transit trade, even though the penetration of foreign goods in transit trade tended to increase, albeit slowly. The dominance of Chinese merchants in transit trade probably had something to do with the limited penetration of foreign imports, but other factors that we have not yet quantified were likely also important.

4. Concluding discussion

Under the influence of foreign pressure over the period 1865-1900, Chinese imports grew at an average rate of 3.5% per year and Chinese exports grew at a rate of 2.7% per year. First, in this paper, we show that what lies behind these aggregate statistics is a great deal of heterogeneity in how different markets in China responded to the opening of trade. It is useful to consider domestic and international trade as an integrated concept. For example, the opening of foreign trade influenced the flows of goods between Shanghai and other ports on the Yangzi River. Thus, once foreign goods arrive in a country, or once a domestic good is available for international consumption, the two types of trade—domestic and international—become fairly difficult to separate.

Secondly, we consider the geographical organization of trade, with Shanghai playing the role of a hub, redistributing goods either toward foreign destinations or within China. Not all ports played an equally important role in re-exports. In Guangzhou, 90% of the imports of Chinese-produced goods from other Chinese ports were consumed *in-situ*. Thirdly, the data allows us to examine the penetration

of foreign goods into China. For example, two-thirds of the imported cotton varieties remained on the coast in Shanghai and never traveled further along the Yangzi River. That is, the expansion of new varieties might have been fairly localized in the treaty port region. Lastly, we provide figures examining the importance of Chinese merchants in domestic and international transactions.

These conclusions and the CMC dataset used in this paper offer numerous avenues for future research, which we will only briefly mention. First, we can explore further the impact of the opening of foreign trade on market integration within China. One way to proceed could be to relate foreign trade to the prices of different commodities in various regions of China and measure whether or not markets may have become more co-integrated after the opening of China to trade. Secondly, it seems fruitful to attempt to better understand the joint evolution of the domestic and international trading routes over time. For example, is there evidence that market networks evolved toward a structure more and more centralized around Shanghai, or rather is it the case that new centers emerged? Thirdly, one interpretation of the CMC is that it was a western institution placed in a country dominated by Chinese merchants. It remains to be established what precisely the relationship was between the CMC organization and Chinese merchants. . A more careful analysis on the role of the Chinese middlemen merchants could relate to a burgeoning literature on the role of intermediaries in international trade.²⁰

²⁰ See Antras and Costinot (2010).

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Table 1: Share (%) of treaty ports in imports of Chinese-Produced goods to Guangzhou, Shanghai and Hankou. Average 1868-1888

Port of Origin:	Average 1868-1888		
	Guangzhou	Hankou	Shanghai
Yingkou	7.1	0.7	2.1
Tianjin	6.9	0.5	5.1
Yantai	1.8	0.1	5.2
Yichang	0.0	4.9	0.1
Hankou	9.3	*	36.7
Jiujiang	0.1	26.8	12.2
Wuhu	4.4	1.1	1.6
Zhenjiang	6.9	1.8	2.8
Shanghai	50.5	57.1	*
Ningbo	2.9	6.4	11.8
Wenzhou	0.0	0.0	0.1
Fuzhou	0.0	0.0	1.9
Danshui	0.0	0.0	0.2
Dagou	0.1	0.0	0.4
Xiamen	0.1	0.0	1.0
Shantou	0.0	0.1	8.8
Guangzhou	*	0.6	4.3
Hong Kong	10.0	0.0	5.7

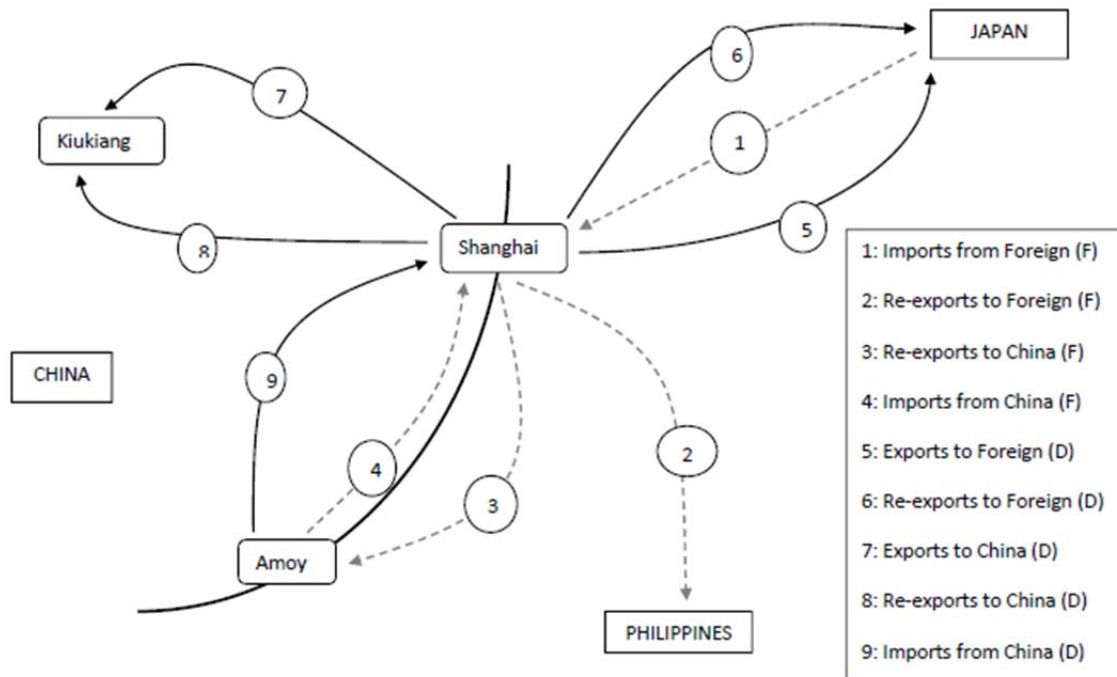


Figure 1. Export and import flows to and from Shanghai

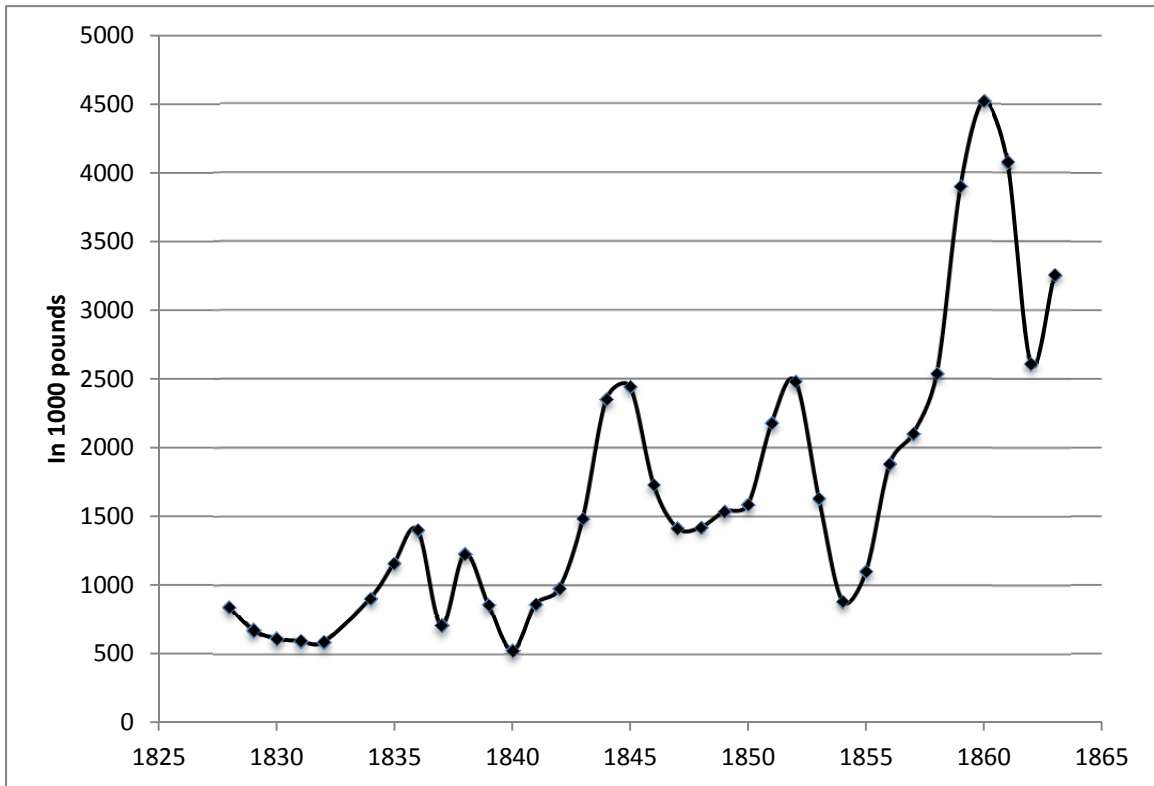


Figure 1: British imports to China 1828-1863, expressed in 1840 British pounds

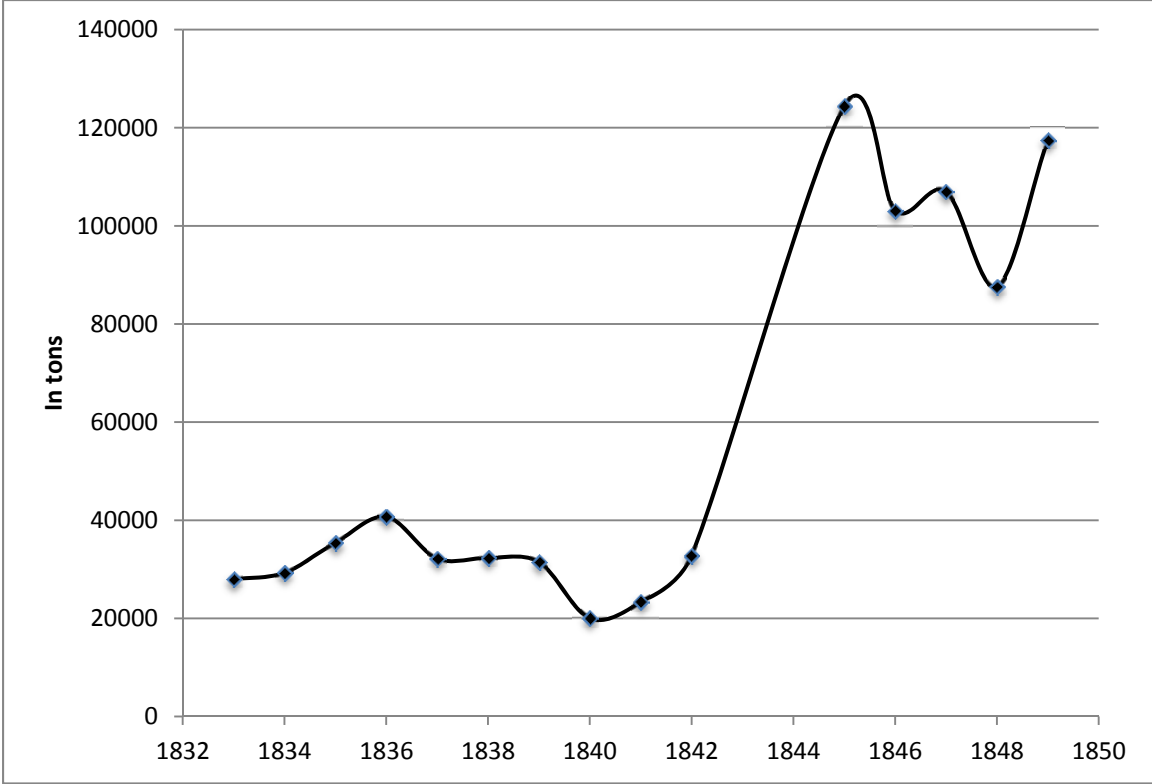


Figure 2: Tonnage of British vessels exporting goods from China.

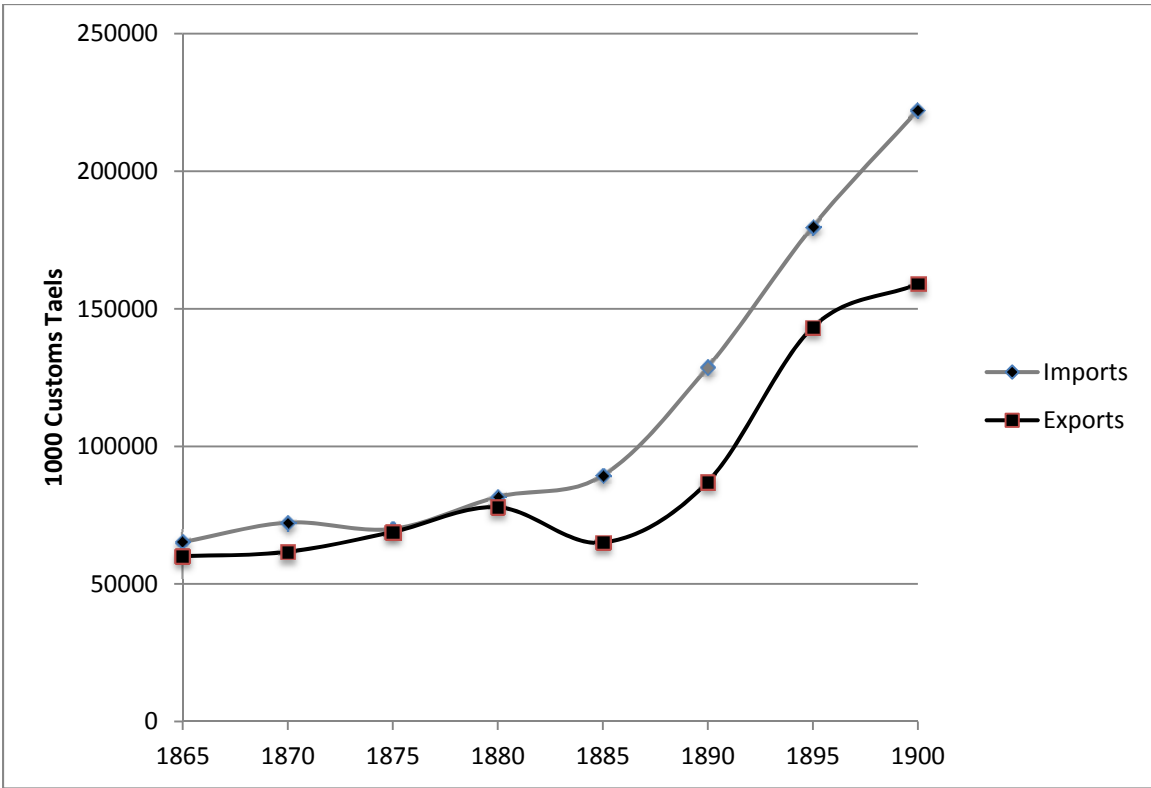


Figure 3: Chinese foreign trade, 1865-1900

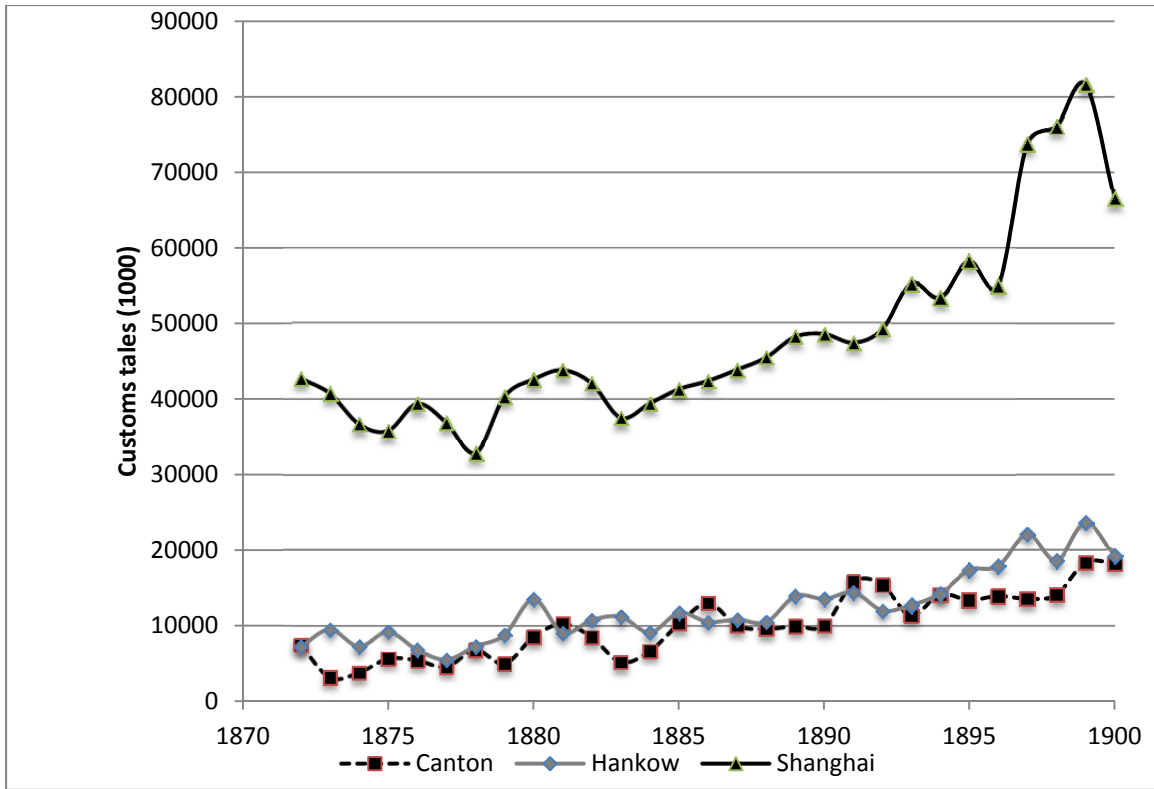
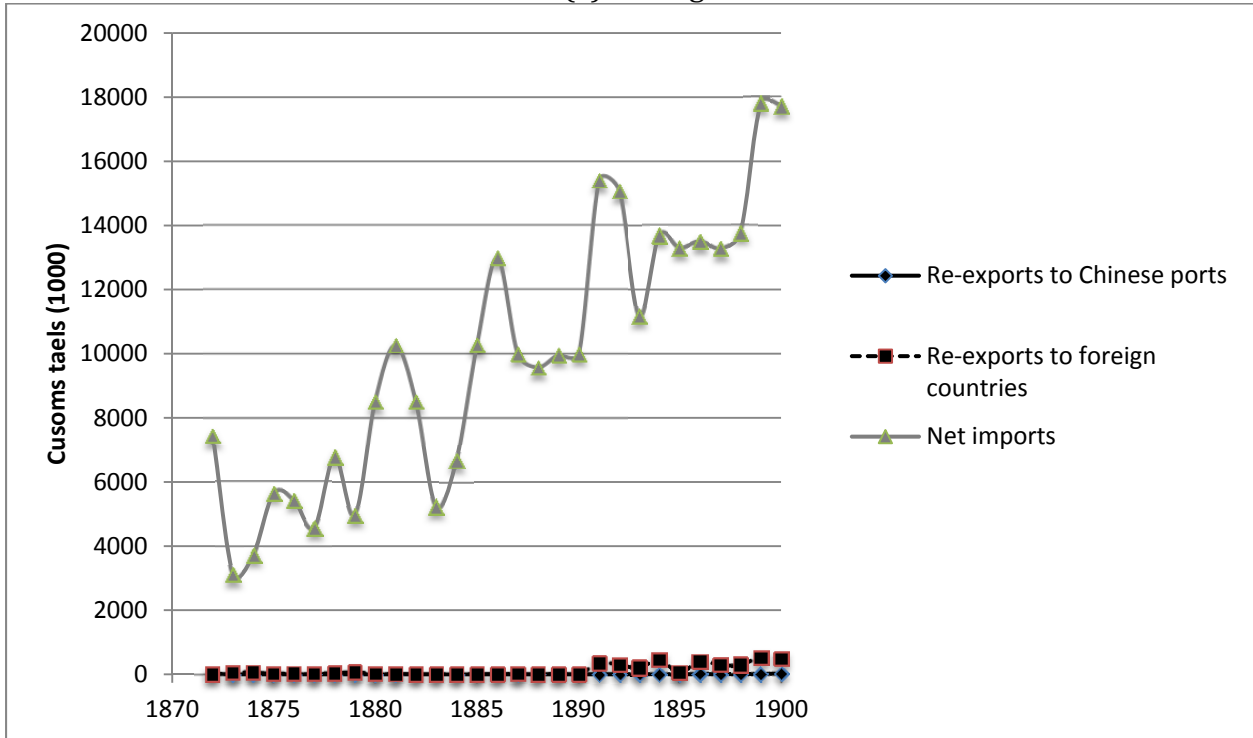


Figure 4: Total imports of Chinese goods in Shanghai, Guangzhou and Hankou

Panel (a): Guangzhou



Panel (b): Hankou

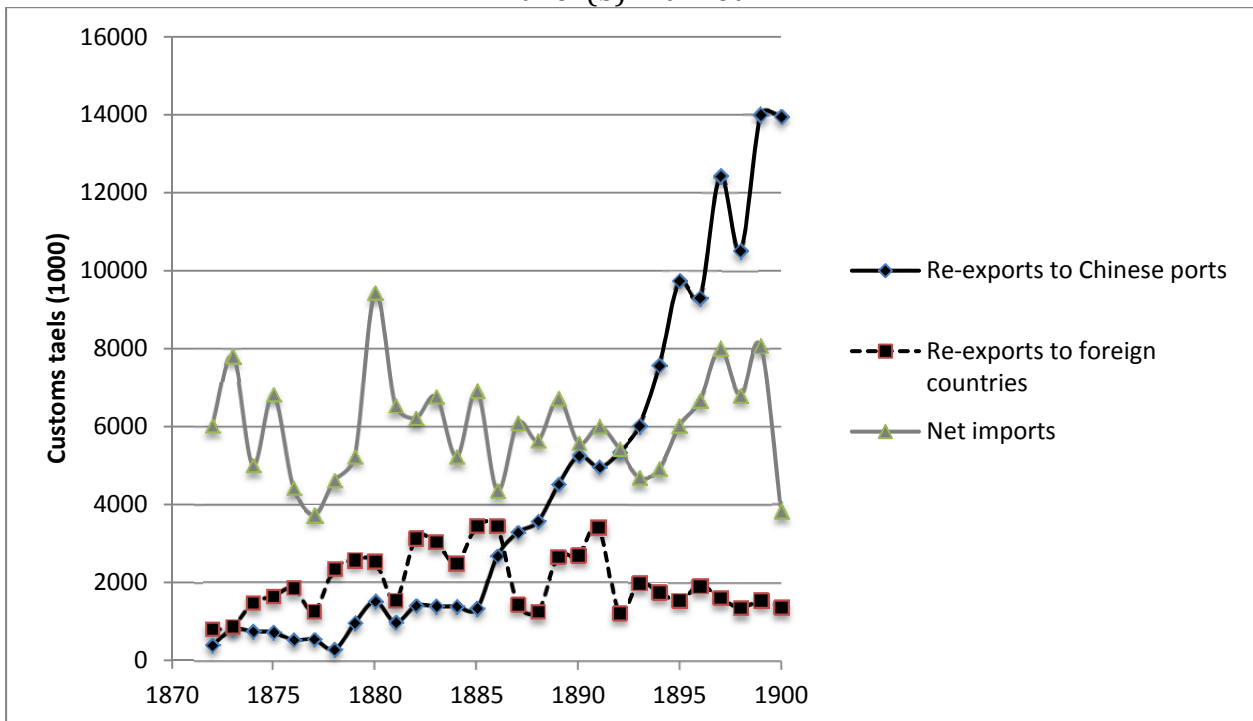


Figure 5: Re-exports and net imports of Chinese goods toward Guangzhou, Hankou and Shanghai, 1872-1900.

Panel (c): Shanghai

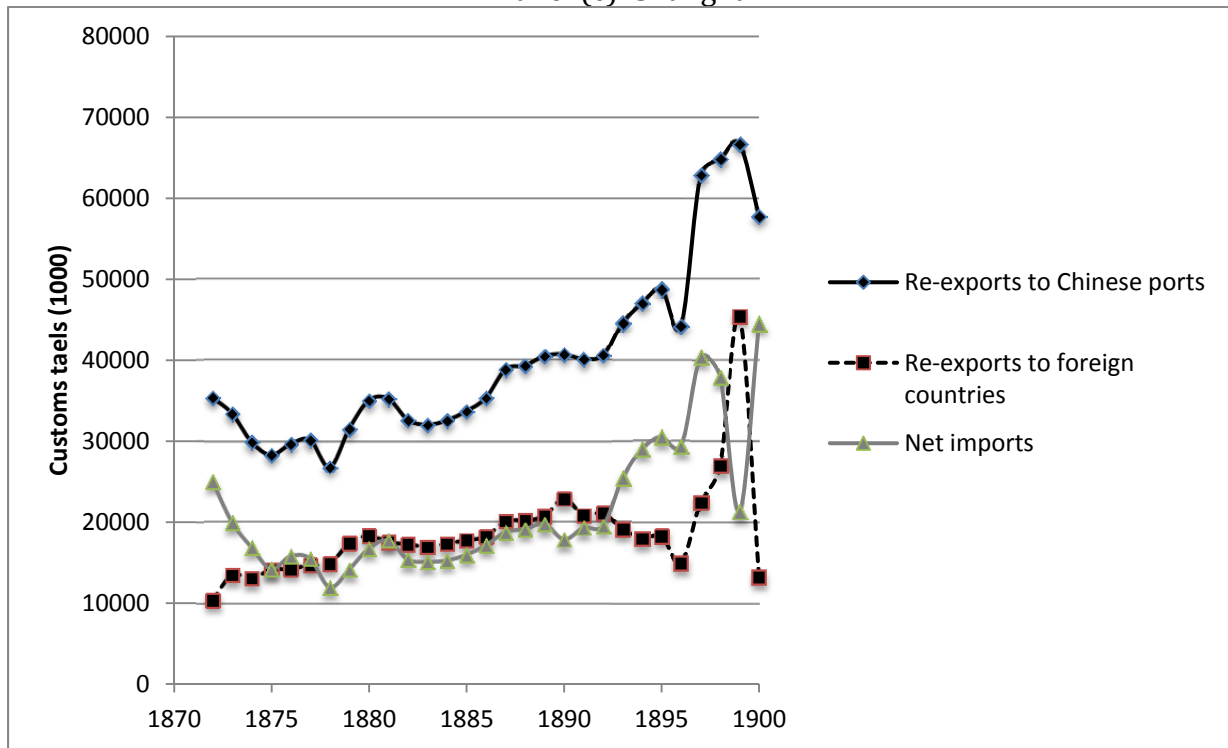
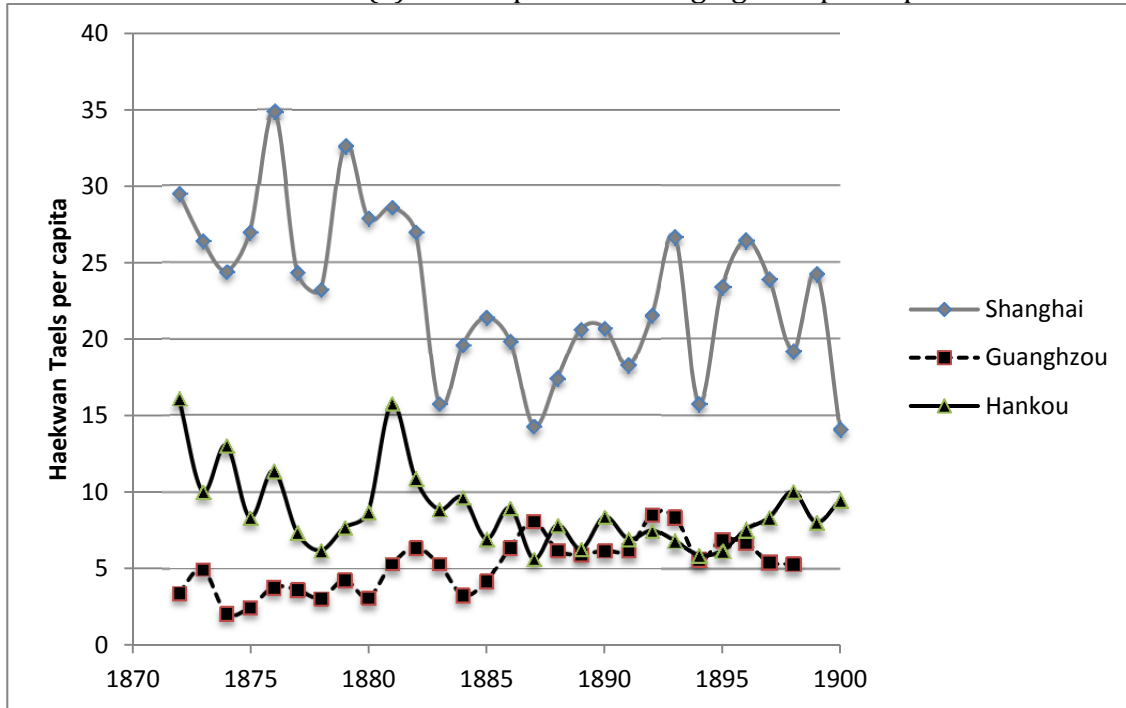


Figure 6 (Continued): Re-exports and net imports of Chinese goods toward Guangzhou, Hankou and Shanghai, 1872-1900.

Panel (a): Net imports of foreign goods per capita



Panel (b): Net imports of Chinese goods per capita.

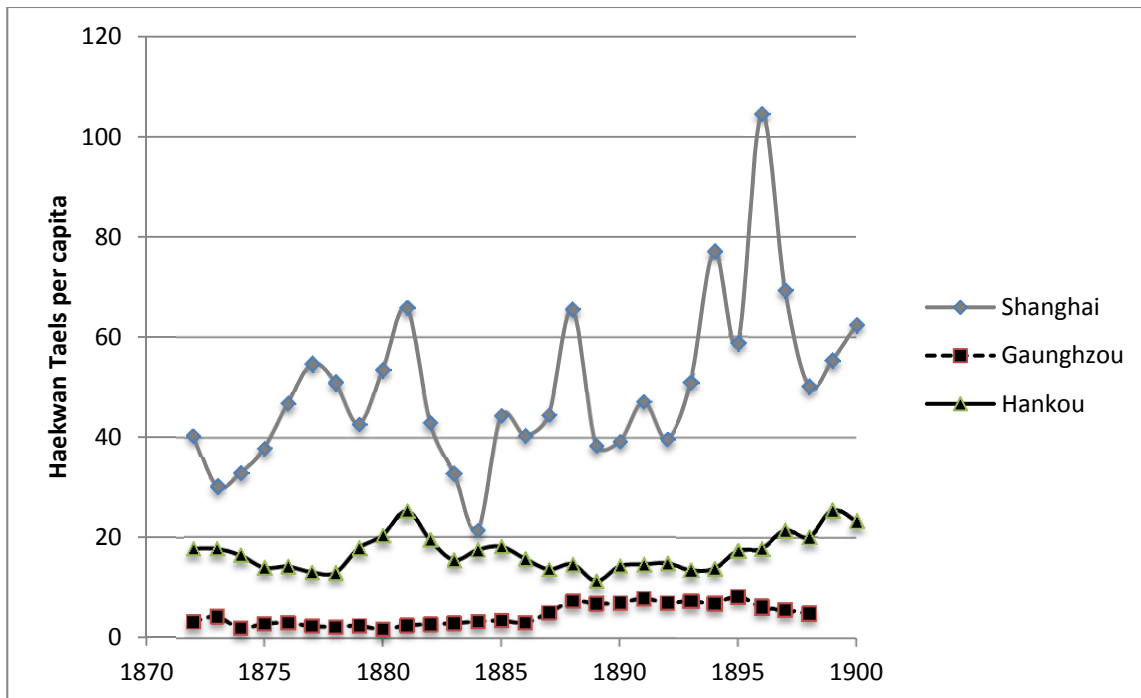


Figure 6: Net imports of foreign and local goods to Guangzhou, Hankou and Shanghai, 1872-1900.

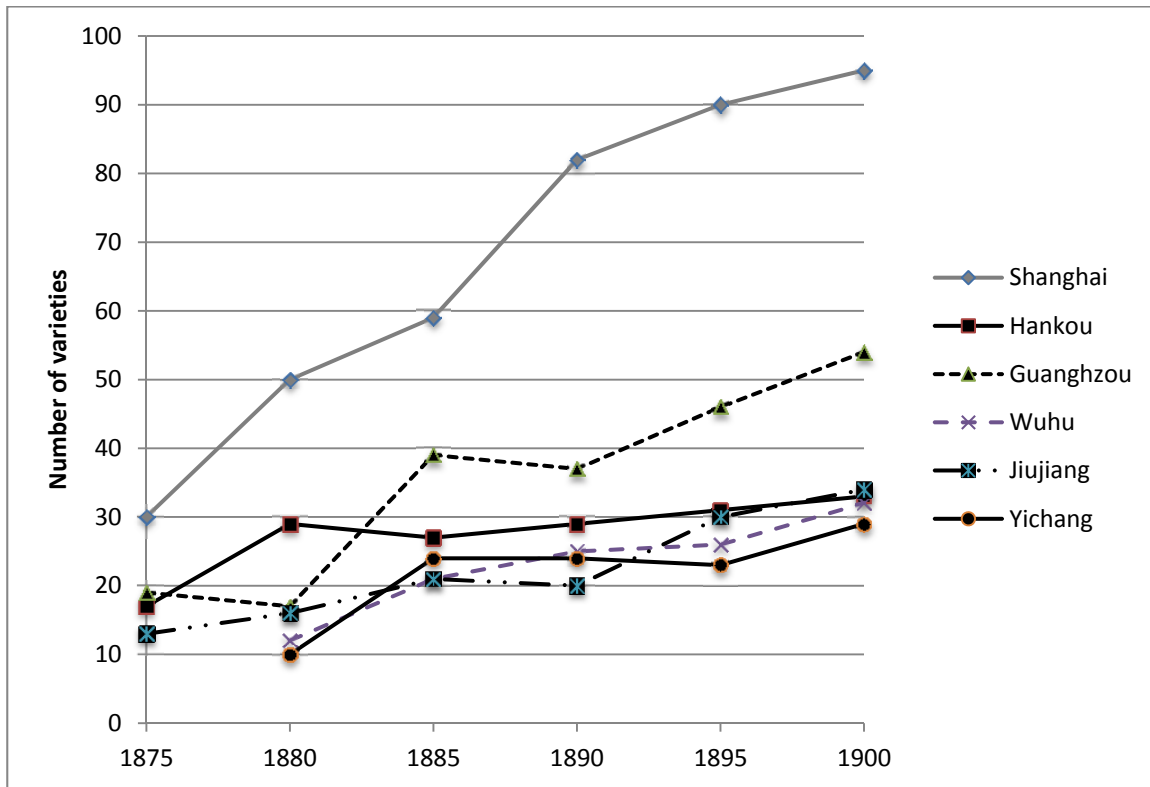
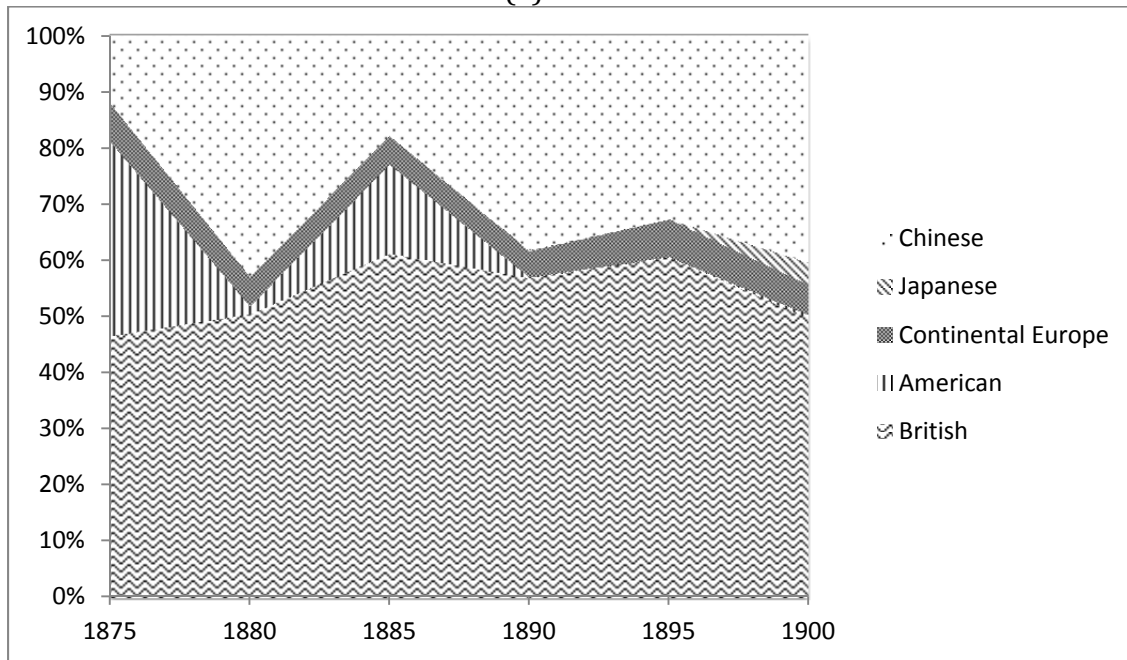


Figure 7: Number of foreign cotton varieties available in Guangzhou, Hankou, Shanghai, Jiujiang, Yichang and Wuhu.

Panel (a): Coastal trade



Panel (b): Transit trade

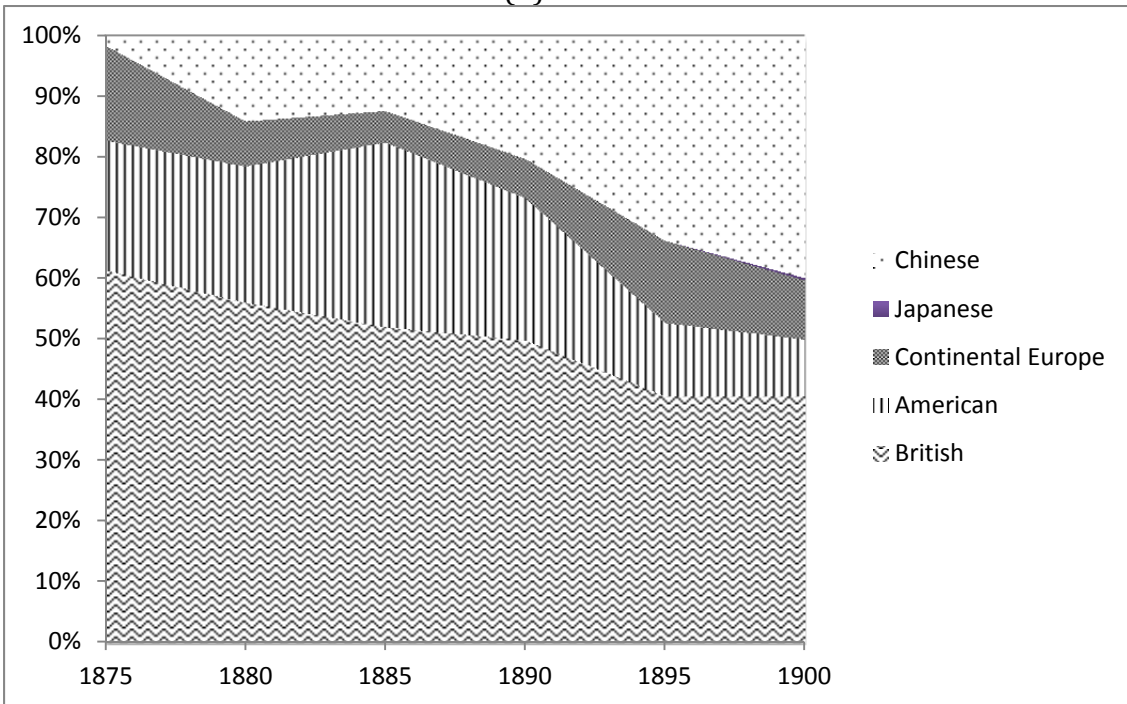


Figure 8: Share of the carrying of trade, by citizenship of the carrier, 1875-1900.



Figure 9: Treaty ports along the Yangtze River.