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Four great Asian trade collapses

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Abstract

This paper introduces a new dataset of commodity-specific, bilateral import data for four large Asian economies in the interwar period: China, the Dutch East Indies, India and Japan. It uses these data to describe the interwar trade collapses in the economies concerned. These resembled the post-2008 Great Trade Collapse in some respects but not in others: they occurred along the intensive margin, imports of cars were particularly badly affected, and imports of durable goods fell by more than those of non-durables, except in China and India which were rapidly industrialising. On the other hand the import declines were geographically imbalanced, while prices were more important than quantities in driving the overall collapse.

KEYWORDS
interwar economy, protection, trade collapses

JEL CLASSIFICATION
N75; F14

This paper is written in honour of Jeffrey Williamson, whose work on globalisation and deglobalisation (to take just one, early contribution, Williamson, 1996) and the economic history of the non-Western world (again to take just two examples, Williamson, 2006 and Williamson, 2011) has been an inspiration to all of us. We are extremely grateful to Steve

INTRODUCTION

The Great Trade Collapse (GTC) of 2008–2009 has renewed interest in the even greater trade collapse experienced between 1929 and 1933. Were both events *sui generis*, or are there common features that can help in understanding the drivers of world trade slumps? Since the Great Recession trade economists have uncovered a number of stylized facts about the GTC, which saw by far the most severe post-war decline in international trade, and was unusually synchronised across countries (Baldwin, 2009; Martins & Araújo, 2009). Largely focussing on developed country data, they have found that it was due more to falling quantities than to falling prices (Bricongne et al., 2012; Levchenko et al., 2010), and reflected changes on the intensive rather than the extensive margin of trade (Bricongne et al., 2012; Haddad et al., 2010; Levchenko et al., 2010; Schott, 2009). Differentiated goods prices barely fell, while falling prices contributed to the trade collapse for non-differentiated goods (Gopinath et al., 2012). The US trade collapse was relatively symmetric across trading partners (Levchenko et al., 2010) but varied systematically across sectors. Trade in automobiles and other big ticket items were particularly badly affected; trade in durable goods fell more than trade in non-durables; trade in consumer and agricultural goods fell less than trade in industrial supplies; trade in goods fell more than trade in services (Bricongne et al., 2012; Gopinath et al., 2012; Levchenko et al., 2010). These compositional effects, together with inter-industry linkages and vertical supply chains, can help to explain the severity of the GTC (Bems et al., 2010, 2011, 2013; Bussière et al., 2013; O'Rourke, 2009). Eaton et al. (2016) conclude that demand shocks reduced expenditure on tradable goods, and that this, rather than higher trade barriers, explained the GTC.

Do these stylized facts about the GTC generalise across time and space, and in particular, how similar was the trade collapse of 1929–1933? While few would deny the role of falling demand in driving the Great Depression, there are some obvious distinctions between the 1930s and the early 21st century. The first is that protectionism rose spectacularly during the 1930s, far more so than after 2008. A priori, therefore, it seems possible that a greater share of the earlier trade collapse was due to a rise in trade frictions. The second is that a much greater share of world trade involved primary commodities then than now. This potentially matters since in both crises it was mainly manufactured output that fell, and manufactured trade volumes that consequently declined. Almunia et al. (2010) point out that this simple compositional difference between the two periods can explain why world trade fell faster in 2008–2009 than in 1929–1930. A third potential difference concerns the relative importance of price and quantity

changes in explaining the two trade collapses. Primary product prices fell extremely sharply during the Great Depression, and were the main channel through which the Depression was transmitted to many developing countries, still highly specialised in food and raw materials. It seems plausible that price changes may have been more important in explaining the trade collapse of the 1930s than they were in the 2000s.

In a previous paper (de Bromhead et al., 2019a) we analysed the 1929–1933 trade collapse in the United Kingdom. The United Kingdom was at that time still a central player in the global economy, exporting manufactured goods and services, and importing food, raw materials and manufactures. Price falls accounted for 83% of the decline in UK import values, and for 42% of the export collapse: the difference reflected the relative importance of primary products in UK imports and exports. While this was very different from what happened in 2008–2009, when quantity changes explained *all* of the UK trade collapse, the fall in UK trade resembled the GTC experience along other dimensions, especially when we limit our attention to 1929–1931, when UK imports were still relatively undistorted by protectionism. It took place along the intensive rather than the extensive margin, it was geographically balanced, and the same categories of goods were affected in the United Kingdom in 1929–1931 as in the United States in 2008–2009. As in 2008–2009, prices fell more for non-differentiated than for differentiated goods, but only insofar as durable manufactures were concerned. In 1931 the United Kingdom adopted a policy of discriminatory protectionism. It also abandoned the gold standard and began to recover. As a consequence, the trade decline of 1931–1933 became geographically imbalanced, as UK trade reoriented towards the British Empire (de Bromhead et al., 2019b), and its sectoral composition changed dramatically, with imports of consumer goods plummeting.

Much of the focus of the GTC literature was on the US experience, and interwar Britain was also a rich, developed, Western economy. There has been much less work done on the anatomy of great trade collapses in developing countries, and there are good reasons to be wary of extrapolating rich country experience to a developing country context. As has already been mentioned, on the export side developing countries were heavily specialised in primary products in the interwar period, potentially implying a different balance between price and quantity changes. Nor can we simply assume that the composition of falling demand mirrored that in richer countries. And finally, trade policies in many developing countries were constrained in the interwar period by their membership of colonial empires.

In this paper, we explore the trade collapses experienced by the four most populous Asian countries (aside from the USSR) between 1929 and 1931: China, the Dutch East Indies, India and Japan. We use existing data to assess the relative contributions of price and quantity changes, but our main contribution is to construct new, commodity-specific, bilateral trade datasets for China, the Dutch East Indies and Japan. For each of these countries we provide consistently defined series for imports from 42 partner countries within 38 three-digit SITC categories. These data will be made available on a dedicated website for other researchers to use (https://cepr.org/content/trade-depression).

We use these new data to explore the sectoral and geographical composition of the import declines experienced by the four countries. Unlike in the GTC, prices were more important than quantities in explaining interwar Asian trade collapses, and the period saw dramatic shifts in the relative importance of various trading partners. On the other hand, the four Asian trade collapses considered here occurred along the intensive margin, as was the case during the GTC, and car imports fell by almost the same proportion as in the United Kingdom, suggesting that similar demand-side forces were at work during the two episodes.

Section 2 briefly surveys the evolution of trade and trade policy in each of our four countries, while section 3 discusses the relative contributions of prices and quantities. Section 4 introduces the new disaggregated data that will be used in the rest of the paper, and Section 5 uses these to decompose the interwar trade collapse along the intensive and extensive margins of trade. Sections 6 and 7 disaggregate the collapse by sector and region, section 8 focuses specifically on Australia and New Zealand and section 9 concludes.

FOUR ASIAN TRADE COLLAPSES

Our four countries varied greatly, both economically and politically. British India—which included present-day Bangladesh, Burma (until 1937) and Pakistan—was still the jewel of the British Empire, although since World War I it had been slowly moving in the direction of greater political autonomy. Since 1924 it had been developing a protectionist trade policy designed to promote infant industries, with iron and steel, and textiles, being the most notable beneficiaries. The Depression led to falling grain prices, and to considerable hardship for peasants owing money to the government, landlords and money-lenders. The effects of falling relative grain prices were compounded by the generally deflationary policies of the government before the United Kingdom's departure from gold in the autumn of 1931. (The Indian rupee was linked to sterling.) Average incomes fell only modestly in real terms, and real aggregate income remained stable (Sivasubramonian, 2000), but even so the net effect was a considerable rise in nationalist sentiment (Rothermund, 2002). Indian manufacturers sought and received greater protection, in particular from Japanese textile producers, and especially after Japan abandoned the gold standard in 1931. Despite nationalist hostility, Indian tariffs discriminated in favour of British producers (Arthi et al., 2020).

The Dutch East Indies were also a European colony. Java had already been hit by falling sugar prices, and Indian protectionism hit the colony's exports further. Exports to China and Japan also suffered. Unlike the United Kingdom and India, the Netherlands and the Dutch East Indies did not abandon gold in 1931, but stuck with it until September 1936. This required deflationary policies that made participation in the money economy even less attractive for colonial peasant farmers. Many returned to subsistence rice farming, a useful means of absorbing excess labour (Rothermund, 2002, pp. 120–121; Latham, 2006). Gold standard adherence also had implications for the colony's trade policies, which (unlike in the Indian case) were set in the Netherlands (Eichengreen & Irwin, 2010). Traditionally these had been very liberal, and from 1872 there had been no discrimination between goods arriving from the Netherlands and elsewhere. Tariffs were increased on a non-discriminatory basis in 1924 for revenue-raising reasons, but still remained relatively low. As in India, however, the devaluation of the Japanese yen prompted a move towards greater protection. Tariffs were increased from 1931 on a non-discriminatory basis, and in 1933 the colony moved to an extensive system of quotas and licences, in the shadow of which several industries developed (van Gelderen, 1939; Latham, 2006, p. 165). These new non-tariff barriers discriminated in favour of the colonial mother country.

China was independent, but had long been subject to treaty obligations limiting its freedom to adopt an independent commercial policy. The Chinese Maritime Customs, which collected customs duties and published China's trade statistics, was a Chinese agency, but before 1943 its Inspectors General were all British (Hall, 2015). Although still a very poor, underdeveloped economy, modern manufacturing was developing rapidly, albeit from a low base (Cheng, 1956, pp. 28–30). The country regained tariff autonomy in 1929 and wasted no time in making use of

its new-found freedom, increasing customs duties in 1929, 1932 and 1934 (Latham, 2006, p. 108).

One striking difference between China and the other countries considered here (and indeed most other countries in the world at the time) is that its currency was tied to silver rather than gold. During the 1920s the price of silver fell sharply, and China's silver-backed currency continued to fall against international currencies like the dollar between 1929 and 1932 (Figure 1). (One consequence of this was that the government started denominating its tariffs in terms of gold from 1930 onwards, so as to raise more revenue.) From 1933 on, however, China experienced a silver outflow, and silver prices rose sharply from 1934 on, in part due to the silver purchase programme introduced by the US government in late 1933 (Friedman, 1992). The full force of the Great Depression therefore only struck the Chinese economy in 1933, by which stage other countries (notably Japan) were already recovering. In November 1935 the country abandoned the silver standard, pegging its currency to sterling and the US dollar (Rothermund, 2002, pp. 110–113; Latham, 2006, pp. 62–63). China's interwar economic turbulence was of course accompanied by even greater political turbulence, with struggle for control of the country in the 1920s being followed by the loss of Manchuria to Japan in 1931, and the Second Sino-Japanese War in 1937.

Like China Japan was independent. Unlike China it was also free of foreign interference, having regained tariff autonomy prior to World War I. Although it was by far the most developed and industrialised of the four countries considered here, the 1920s were a difficult decade for the country. The 1923 earthquake was followed by years of deflation as the government prepared the way for returning to gold. This was finally achieved in 1930, but the peg had to be abandoned the following year and the economy started to recover in 1932. One of the factors motivating the abandonment of gold was the 1931 invasion of Manchuria, which was incompatible with the fiscal austerity demanded by the gold peg (Eichengreen, 1992, pp. 308–309). The yen depreciated sharply, creating competitive problems for other economies across Asia and the rest of the world. As we have seen, this led to anti-Japanese protectionism in several key markets, and Japan herself adopted a wide-ranging system of quantitative restrictions on trade. While James (2001, p. 139) comments that "Japan, more or less uniquely, avoided
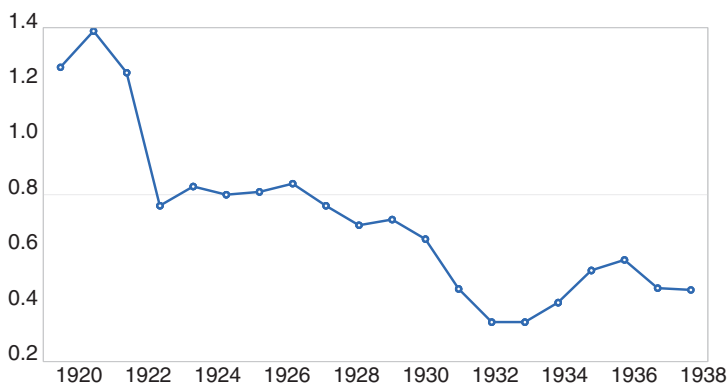

FIGURE 1   US dollar equivalent of *haikwan tael*, 1919–1938 [Colour figure can be viewed at wileyonlinelibrary.com]

Source: Hsiao (1974, pp. 190–192). From 1933 on Hsiao reports the US dollar equivalent of the Chinese standard dollar. These figures were converted to the *haikwan tael* equivalent by multiplying them by 1.558 (Tseo, 1942, p. 188).

bilateralization," Japan's sphere of influence—including its colonies in Korea and Taiwan, Kwantung, Manchuria and the rest of China—saw its share of Japanese imports rise from 26% to 45%, and its share of Japanese exports rise from 35% to 62.7%, between 1929 and 1938 (League of Nations, 1939, pp. 34–35).

Figure 2 gives nominal import values for our four countries, along with data for the world as a whole, indexed to 1929. The world data are taken from United Nations (1962) and are expressed in US dollars. The Chinese data are from Hsiao (1974), and are also expressed in US dollars. The Dutch East Indies data are in guilders, and are taken from the annual statistical yearbooks of the colony. The Indian data are denominated in rupees and are taken from Arthi et al. (2020). A complication is that before 1937–1938 the official Indian trade data included the external trade of Burma, but in 1937–1938 the latter were published separately. The 1937–1938 data have therefore been adjusted by including Burmese imports, and netting out trade between Burma and India so as to maintain comparability over time. The Japanese data are in yen, and are taken from the Long-Term Economic Statistics Database.

As can be seen, the trade collapse of 1929–1931 was remarkably similar across all four countries, which saw the value of their imports decline at more or less the same rate as world trade in general. As in the Great Recession, this was a synchronous worldwide fall in trade. From 1931 on, however, the series diverge, corresponding to currency developments and recovery. Japan's departure from gold in 1931 was followed by recovery (Eichengreen & Sachs, 1985) and an increase in the value of imports; India's departure from gold in the same year arrested the steep decline but did not lead to a recovery. Imports into the Dutch East Indies continued to fall all the way through to 1936, the year that the colony finally abandoned the gold peg, as did Chinese imports.

The Chinese import data are, however, sufficiently complicated that they need to be discussed in some detail. As already noted, the country was on a silver standard, with a wide
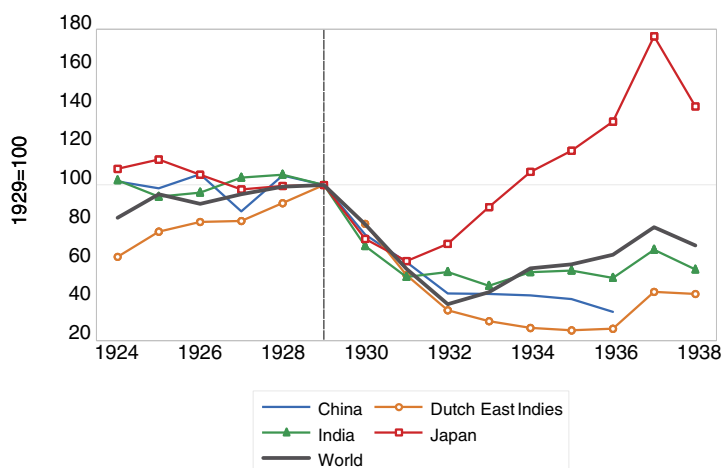
FIGURE 2 Nominal imports, 1924–1938 [Colour figure can be viewed at wileyonlinelibrary.com]
Sources: China: Hsiao (1974, pp. 268–269). The data have been converted to US dollars using the exchange rates provided by Hsiao (pp. 190–192). Dutch East Indies: Statistisch Jaaroverzicht voor Nederlandsch-Indië (1922–1930), Indisch Verslag Vol. 2 (1931–1940); data graciously provided by Pierre van der Eng. India: Arthi et al. (2020). Japan: Long-Term Economic Statistics (LTES) Database, Japan, Volume 14, available at: http://d-infra.ier.hit-u.ac.jp/Japanese/ltes/LTES_14.xlsx. World: United Nations (1962).

variety of silver-based *taels* in circulation (Tseo, 1942). The Chinese Maritime Customs measured trade flows and levied customs duties using an artificial unit of account, the *haikwan tael*, which was equivalent, for example, to 1.114 Shanghai *taels* (Lee, 1926, p. 15). In March 1933 a new silver currency was created, the standard dollar. The standard dollar was equivalent to 0.715 Shanghai *taels*, or 0.642 *haikwan taels*. As we have seen, import duties had been levied in gold terms from 1930; import statistics were compiled in terms of Customs Gold Units (CGU) from 1932, while export statistics continued to be denominated in silver terms (*haikwan taels* before 1933 and standard dollars thereafter) (Tseo, 1942, pp. 186, 188, 190–191).[1] However, the customs service also reported many import series in silver terms after 1932, converted using the official exchange rate (Hsiao, 1974, p. 11). These are reported by Hsiao (1974), the standard reference on the subject.

Given that China remained on the silver standard until November 1935 it would seem economically meaningful to report its aggregate imports and exports in terms of silver. However, given that the price of silver fluctuated over time, this would make it difficult to compare the aggregate Chinese figures with data from elsewhere. As Figure 1 showed, the *haikwan tael* fell steeply in value before 1932, implying that before that year any import series valued in silver terms will rise more, or fall less, than an import series valued in dollars or any other currency pegged to gold. On the other hand, the rise in silver prices after 1933 will have the opposite impact. Figure 2 therefore plotted Chinese imports denominated in dollars, on the basis that this probably makes the series more comparable with the other ones.

Another complicating factor when interpreting the Chinese trade statistics is the loss of Manchuria in 1931 (see Section 4). From that year, trade between China proper and Manchuria was counted as external trade, and Manchuria's trade with the rest of the world was ignored by the Chinese statistical authorities. This on its own led to a decline in measured Chinese external trade (trade flows between China and Manchuria being insufficient to compensate for the loss of Manchuria's trade with other countries).

Figure 3 plots four Chinese import series for the interwar period, indexed once again to 1929. The first dimension along which they differ is currency: two are measured in silver terms, and two in dollars. And the second dimension concerns Manchuria. Two of the series are the official series, as reported by Hsiao (1974), while two adjust the official data in an attempt to
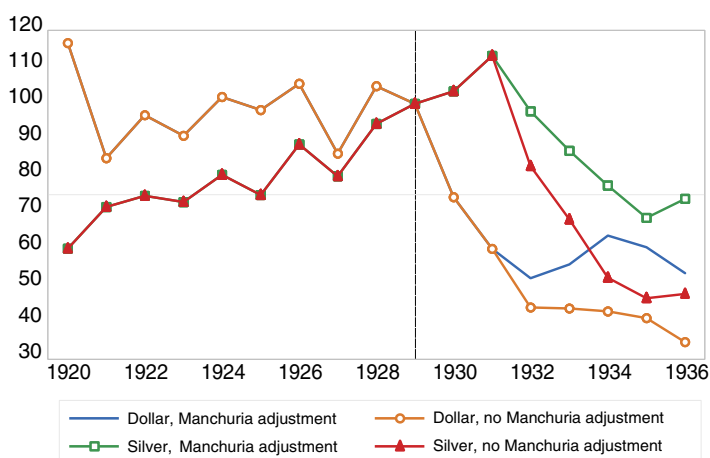

FIGURE 3 Nominal Chinese imports, 1920–1936 [Colour figure can be viewed at wileyonlinelibrary.com]
Source: See text.

produce geographically consistent series. More precisely, Rawski (1982) calculated adjustment factors, based on Chinese-Manchurian and Manchurian-rest-of-world trade flows, so as to produce aggregate external trade indices for China, inclusive of Manchuria, post-1931. We apply his aggregate adjustment factors to the Chinese import data, as reported by Hsiao.

As can be seen, when measured in local currency (silver) terms, there was no Chinese import collapse after 1929: imports continued to rise until 1931.[2] In dollar terms, however, as we saw in Figure 2, imports fell steeply between 1929 and 1931. They fell continuously thereafter, albeit less steeply after 1932 (and the combined imports of China plus Manchuria stopped falling after 1931). In silver terms, imports only started falling in 1932, and they continued to fall rapidly until 1935 (with the decline being less pronounced when Manchuria is included in the figures).

An alternative perspective is provided by quantity indices of trade. The Nankai Institute of Economics produced quantity and price series for Chinese imports and exports (exclusive of Manchuria) from 1931.[3] The Nankai import quantity index is plotted in Figure 4, along with import quantity indices for the other three countries. As can be seen, import quantities started to decline in China after 1929, but at a much slower rate than in our other three countries. Elsewhere import quantities fell at the same rate in the first year of the crisis; the decline was halted in Japan in 1931, in India in 1932, and in the Dutch East Indies in 1936. In sharp contrast the decline accelerated in China in 1932, consistent with the timing of the Depression there, and import quantities continued to fall until 1936.

In conclusion: 1929–1931 saw a nominal trade collapse that was remarkably similar in our four countries when measured in comparable, gold-based currencies. In the Chinese case, however, it is not unambiguously clear that this is the correct way to measure trade values, and in
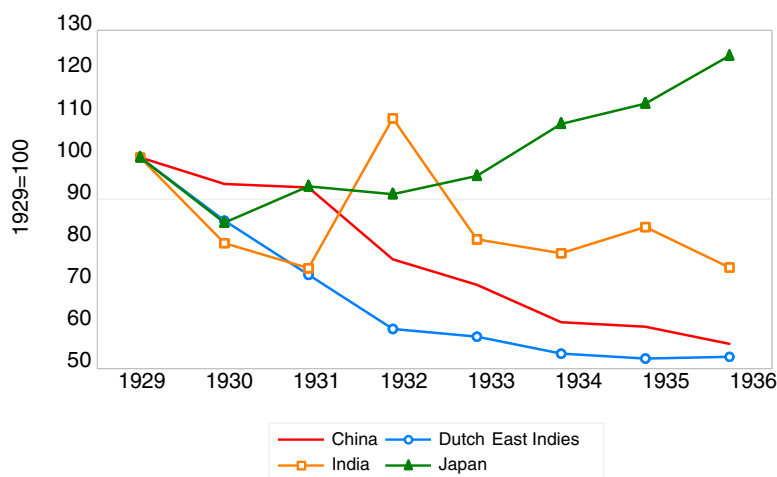

FIGURE 4   Import quantities, 1920–1936 [Colour figure can be viewed at wileyonlinelibrary.com]
Sources: China: the Nankai index, taken from Hsiao (1974, pp. 274–275). Dutch East Indies: the nominal data in Figure 2 are deflated using an unweighted index of the prices of the main imported goods, taken from the same source and graciously provided by Pierre van der Eng. India: the nominal values in Figure 2 are deflated with the import price index implied by Federico and Tena-Junguito's (2018) constant and current price series. They used a Fisher index based on Indian prices for 48 goods (Federico & Tena-Junguito, 2016, p. 80). Japan: this is the constant price series estimated by Yamazawa and Yamamoto in the Long-Term Economic Statistics (LTES) Database, Japan, Volume 14, available at: http://d-infra.ier.hit-u.ac.jp/Japanese/ltes/LTES_14.xlsx.
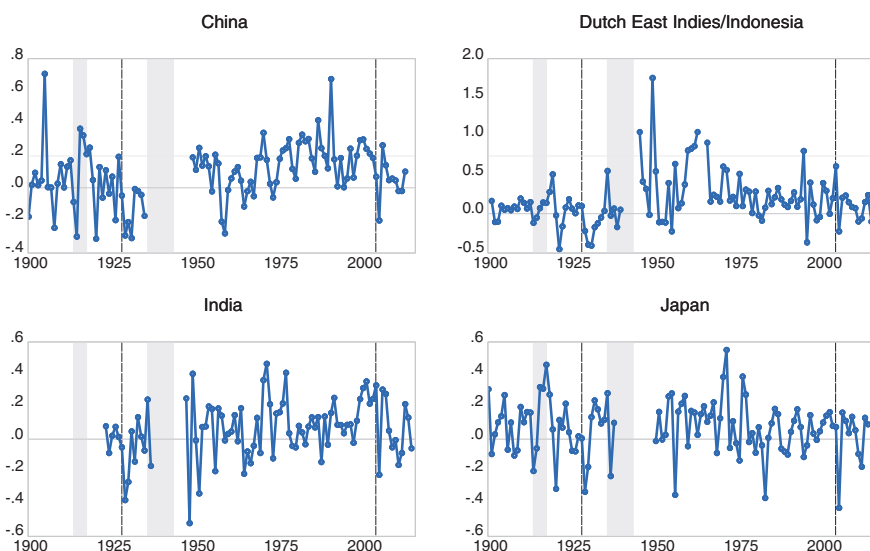
FIGURE 5 Annual log changes in imports, 1900–2019 [Colour figure can be viewed at wileyonlinelibrary. com]

Source: The same sources as for Figure 2, except for the data for post-war Japan, graciously provided by Kyoji Fukao, and the post-1945 Indian data which are from the WTO (https://data.wto.org).

quantity terms the 1929–1930 decline was much milder than elsewhere. In the longer run, however, the Chinese trade collapse was second only to that of the Dutch East Indies.

Figure 5 provides some long-run perspective: it plots annual log changes in import values for our four countries from 1900 to 2019. (The graph omits the data for Indonesia in 1966 since the decline in imports in that year was so enormous that it dwarfs everything else.) The years 1929 and 2008 are marked with vertical dashed lines, while the two world wars are marked with shaded areas.

As can be seen, the post-1929 trade collapse was worse of that of 2008–2009 in every case barring Japan. Even in that case, however, the decline of 1929–1930 (0.33 log points) was followed by another substantial decline in 1930–1931 (of 0.17 log points), whereas the fall experienced in 2008–2009 (0.43 log points) was followed by recovery. The cumulative decline experienced during the Depression was thus greater. The other major import collapses in these four countries were 1921 (China and Japan), 1922–1923 (Dutch East Indies), 1950 and 1953 (India), 1958 (Japan), the afore-mentioned 1966 (Indonesia), 1986 (Japan) and 1999 (Indonesia). Some of these matched the declines seen in individual years during the Depression: what made the Depression stand out was the cumulative decline experienced during it. The fall in imports experienced between 1929 and 1931 was of the order of 0.5 log points or more in all four cases, and in all cases barring the Dutch East Indies/Indonesia was greater than any other decline experienced during this period.[4]

PRICES VERSUS QUANTITIES

During the Great Recession, the trade collapse reflected movements in both prices and quantities. Levchenko et al. (2010) show that in the case of the United States the GTC was more a quantity than a price phenomenon. Was the same true during the Great Depression?

TABLE 1 Prices and quantities during two trade collapses

	Value	**Volume**	**Price**	**Share price**
Panel A. 1929–1931				
China	−0.221	−0.032	−0.189	85.4
Dutch East Indies	−0.272	−0.142	−0.130	47.7
India	−0.280	−0.133	−0.147	52.6
Japan	−0.217	−0.031	−0.186	85.6
World	−0.247	−0.077	−0.167	67.9
Panel B. 1929–1933				
China	−0.359	−0.157	−0.202	56.3
Dutch East Indies	−0.528	−0.241	−0.287	54.3
India	−0.320	−0.094	−0.226	70.6
Japan	−0.053	−0.020	−0.033	62.5
World	−0.351	−0.140	−0.208	59.1
Panel C. 2008–2009				
China	−0.118	0.029	−0.148	125.0
India	−0.222	0.035	−0.257	116.0
Indonesia	−0.308	−0.195	−0.113	36.6
Japan	−0.323	−0.130	−0.194	60.1
World	−0.264	−0.143	−0.120	45.6

Note: first three columns show log changes; the final column shows price changes as a share of value changes.
Sources: For the interwar period, nominal import values as in Figure 2; import quantities as in Figure 4, with the figures for the world taken from United Nations (1962); prices inferred from the values and quantities. For 2008–2009: WTO.

   Table 1 gives log changes in the value and volume of trade experienced between 1929 and 1931 (Panel A) and 1929 and 1933 (Panel B). It also gives the log change in import prices, and the share of the nominal decline accounted for by falling prices. In the case of China, we present the nominal dollar figures of Figure 2, and infer price movements by comparing these with the Nankai quantity index presented in Figure 4. As can be seen, in almost all cases prices contributed more to the interwar trade collapse than did quantity declines. While this is very different to the picture presented by Levchenko et al. (2010), it should be noted that what was true of the United States was not universally true during the GTC either. Panel C of Table 1 shows that experiences then varied greatly across countries. Quantities were dominant in explaining the Indonesian import collapse, similar to the situation in the United States, but prices explained the majority of the Japanese import collapse, and all of the Chinese and Indian import collapses. For the world as a whole, 54% of the GTC was explained by quantity movements, and 46% by prices. In contrast, prices explained 68% of the global 1929–1931 nominal trade collapse, and 59% of the fall in world trade between 1929 and 1933. Overall, it seems safe to conclude that prices played a much more significant role in explaining the interwar trade collapse than the GTC.

OUR DATA

Until now we have used existing aggregate series for our four countries. In order to be able to examine these trade collapses in a more disaggregated fashion, we now turn to new data that

have been collected by us in the context of a long-term project on trade and trade policy in the interwar period. During the course of this project we have constructed comparable disaggregated import datasets for the period 1924–1938, for a representative set of countries and commodities, using national primary sources (i.e., contemporary trade statistics). For the four countries considered here, we used volumes reporting imports by commodity and country collected by the Inspector General of Customs in Shanghai for China; the Department of Commercial Intelligence and Statistics in Calcutta (Kolkata) for British India; the Department of Finance in Tokyo for Japan; and the Departement van Landbouw, Nijverheid en Handel and the Departement van Economische Zaken, respectively, in Batavia (Jakarta) for Java and Madura in the Dutch East Indies (which for the sake of brevity we will from now on refer to as "Java").[5]

When working with these historical statistics, the main challenge is that before the introduction of the Standard International Trade Classification in 1950 (Statistical Office of the United Nations, 1951) imports and exports were usually classified according to the logic of the local tariff legislation. Classifications are therefore inconsistent across countries, and often vary substantially within one country over time as well (this is especially true of the Chinese and Japanese statistics). To get around this problem, we selected from each national publication all items falling within 38 three-digit categories of the original Standard International Trade Classification. The 38 categories were selected on the basis of their importance in world trade, and on the grounds that it was possible to accurately measure total imports for each of them for all of our countries. For each of these categories, and for each of our countries, we transcribed all imports coming from 42 partner countries.[6] These data are generally reported in local currency units (see below) and refer to imports on a c.i.f. (cost, insurance, freight) basis valued in current prices. India and Java reported government imports separately from private imports. We have transcribed both private and government imports, but in this paper only use the former.[7]

Apart from the problems caused by differing product classifications, we also had to deal with a number of challenges regarding: (a) the time-frame of the trade statistics; (b) the local currency units used; (c) the changing geographic coverage of trade statistics over time; and (d) the designation of partner countries.

a. Trade statistics for China, India, and Java refer to calendar years, while those for India refer to fiscal years, running from 1 April to 31 March. For India, we assign trade flows to the earlier of the two calendar years involved, e.g. data for the Indian fiscal year 1928–1929 is assigned to the calendar year 1928.
b. Our data are in local currency units, which for India (rupees), Japan (yen) and Java (guldens/guilders) are consistent over time. As noted in Section 2, China reported its import values in *haikwan taels* until 1931 and in CGU from 1932. We convert both to US dollars, using the silver to dollar exchange rates, and GCU to silver exchange rates, provided by Hsiao (1974, pp. 190–192, 195).
c. Regarding the territory covered by our dataset, several caveats have to be made. For the Dutch East Indies, as noted above, we only use import data for Java and Madura, reported in volume 1 of the trade statistics. The trade of Japan refers to the trade of Japan proper which, according to a note at the back of the title page for the 1927 trade statistics (Department of Finance [Japan] (1928)), does not include the foreign trade of Chosen (Korea) and Taiwan, although these are not reported as trade partners of Japan.[8] The Japanese statistics do list Kwantung and Manchukuo (from 1932) as trading partners. The Chinese trade statistics

report Hong Kong as a trading partner, but most imports from there were shipped through Hong Kong rather than originating in the colony (Keller et al., 2011). We have thus far not attempted to use Hong Kong statistics to reassign imports from Hong Kong to their ultimate source. In the case of India, as already noted, the trade statistics include imports into Burma until fiscal year 1936–1937 (i.e., 1936). From fiscal year 1937–1938 (i.e., 1937) the Indian statistics only report data for India proper, now including Burma as a trade partner. Arthi et al. (2020) statistically "reincorporate" Burma into India for 1937 for each reported item and country by collecting data from Burma's import statistics, adding Indian and Burmese imports, and deducting imports from Burma to India and vice versa. We use those data here.

A similar challenge arises in the case of China, though we were unable to resolve it. After the Japanese invasion the State/Empire of Manchuria, better known as Manchukuo, was established in 1932 by Japan on Chinese soil.[9] The 1932 trade statistics volume discusses the implications (Inspector General of Customs [China] (1933), vol. I, pp. 2–5): the creation of Manchukuo in February/March 1932 "cost China the loss for the time being of three of her richest provinces, and through the subsequent failure of Japan to carry out the provisions of the Dairen customs agreement, the control of cargoes imported and exported through the Kwantung Leased Territory was also lost. As the Manchurian ports and Dairen (situated in the Leased Territory) contributed 35.4% to China's foreign export trade in 1931 and no less than 42.6% of that trade for the first half of the year under review, these ports were a very considerable asset to China in the matter of balancing her trade with abroad. [...] The Custom Houses were kept functioning on behalf of the National Government as long as possible, but had finally to be abandoned under force majeure." In September 1932, these customs houses were declared closed, but data basically cease to exist from July, since the Japanese immobilised or seized the customs records and deposits. This applied not only to the customs offices in the Chinese Manchurian ports, but also to the Chinese customs office in Dairen (Dalian), the main port of the Kwantung territory. In 1929, Dairen had been the second most important customs office in terms of customs revenue in China, behind Shanghai and closely followed by Tientsin (Tianjin). From 1932 imports from Kwantung, previously not listed as a trade partner, appear in the Chinese statistics.

In principle it would be possible to statistically "reincorporate" Manchukuo into China as we did for Burma in the case of India, and the required Manchukuo trade statistics do exist. For the time being, we have decided not to do this for two reasons, one practical, one conceptual.[10] The practical reason is that Manchukuo trade statistics were not available to us due to the current public health measures; the conceptual reason is that the Japanese invasion, the government in Manchukuo, and Japanese investments in this area constitute a very different case from the "mere" administrative separation of India and Burma.[11]

Other internal and external conflicts also affected trade and its recording by China's customs authorities. In 1932, the Japanese invasion seriously affected Shanghai's trade, and subsequent boycotts of Japanese goods led to additional trade disruption. In Manchuria, the trade of Harbin—part of Manchukuo from 1932—had been affected by conflict as early as 1930. Aigun (on the Northern bank of the Amur River) suffered the uncertainty resulting from conflict with the Soviets between 1929 and 1933. Similarly, Tientsin (Tianjin) suffered the consequences of conflict along the Northeastern border between 1931 and 1933, and is repeatedly mentioned as a problem in the trade statistics due to extensive and uncontrollable smuggling until at least 1936.

d. Changes in partner country designations and definitions can also be observed in the trade statistics of all four territories. Take the coverage of Australia. In the Chinese statistics,

imports from "Australia, New Zealand, etc." are reported from 1924 to 1931, while from 1932 both Australia and New Zealand are reported separately. However, since recorded imports from New Zealand after 1932 are rather small, the long-run series can be regarded as mainly representing trade with Australia. We made further adjustments (e.g., regarding Japan/Korea/Taiwan or India/Burma as a trade partner) as systematically as possible, given the definitions in our sources (see, e.g., Arthi et al., 2020, appendix 3 for a discussion of the Indian case).

Representativeness of our series

Figure 6 plots the value of the imports included in our sample, expressed as a share of the total aggregate imports reported in Figure 2.[12] For China, India, and Japan the share of the sample in total imports exceeds 50% on average, while for Java it fluctuates around 33%. In the case of China, the fall in the share from 1932 suggests that the loss of Manchuria and the Dairen customs office in Kwantung probably also changed the commodity or geographical composition of foreign trade. In the case of Japan, the fall of the share after 1934, and especially after 1936, is most likely due to the strategic non-reporting of some of the commodities in our sample. In 1937 and 1938 Japan (probably deliberately) omitted to report imports of various goods including crude oil, kerosene, other mineral oils, copper, iron and steel, automobiles, chasses, and parts and tires for automobiles (see Section 5).

Figure 7 shows that our sample tracks the post-1929 trade collapse well.[13] On the other hand, it understates the growth in Japanese imports after 1934, and especially the spike in 1937. Again, the divergence after 1936 is probably due to the afore-mentioned underreporting and omission of key import goods in the statistics.

INTENSIVE VERSUS EXTENSIVE MARGINS

Since Melitz (2003), international trade theory has largely focussed on the extensive margin of trade: that is to say, on the emergence of trade in goods that had previously been non-traded
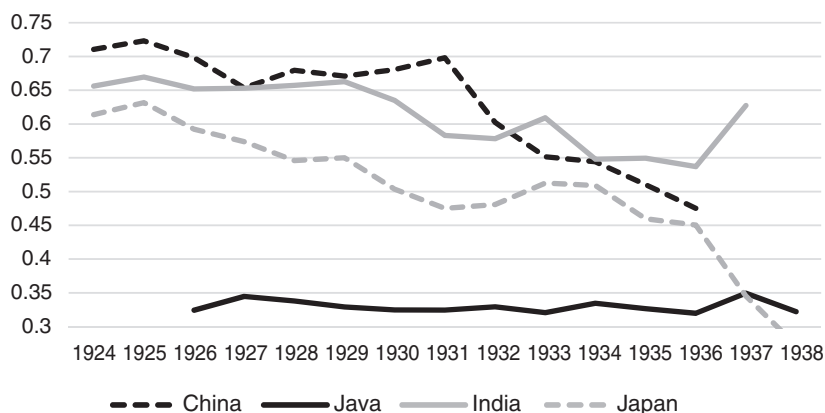
FIGURE 6 Imports in our 38-SITC three-digit category as a proportion of total imports.
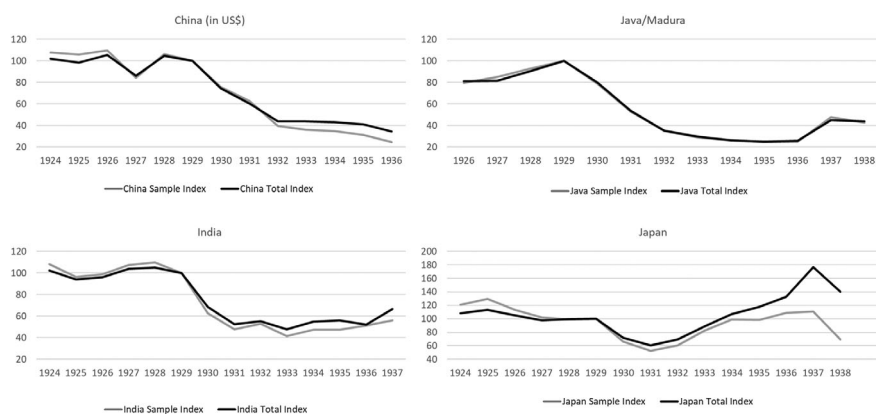*Source:* See text

FIGURE 7 Nominal imports: Sample versus totals (1929 = 100).
Source: See text. Imports measured in local currency units, except for China (measured in US dollars). "Total index" series are those reported in Figure 2

between pairs of countries. Kehoe and Ruhl (2013) examine disaggregated international trade flows, for the 1995–2005 period, and find that the extensive margin matters empirically for trade at times of trade liberalisation or structural change (often involving trade liberalisation) increasing trade flows. Does it also matter empirically at times of collapsing trade flows and rising protectionism?

As we have seen, during the GTC the fall in trade occurred overwhelmingly along the intensive margin of trade: that is, trade collapsed, not because trade vanished altogether for particular commodities or countries, but because it declined for country-commodity pairs that were present in the data both before and afterwards. This is consistent with the finding in Kehoe and Ruhl (2013) that the extensive margin does not explain much of the changes in trade flows that occur across the business cycle: their explanation is that it is costly to establish such connections in the first place. It is also consistent with their finding that, not surprisingly, the extensive margin matters less in the short run than in the longer run: the GTC only lasted one year. The interwar trade collapse lasted longer, and was associated not only with the Great Depression, but with a large increase in trade barriers. A priori, it is not inconceivable, therefore, that the extensive margin might have mattered more than that it did in 2008–2009.

However, de Bromhead et al. (2019a) find that the intensive margin accounted for the entire trade collapse experienced in the United Kingdom between 1929 and 1933. Was the intensive margin also dominant in explaining the post-1929 trade collapse in our four Asian countries? We decompose the 1929–1931 trade collapses in our four countries in the same manner as do Kehoe and Ruhl (2013). That is to say, we compare the log change, between 1929 and 1931, in the value of trade for country-commodity pairs that were imported in both years, and compare this with the log change in total imports during the same period. We do this for each of our four countries using the 38 SITC three-digit categories and 42 partner countries described above. For all four countries, the decline in the intensive margin explains the entire trade collapse between 1929 and 1931. It also explains the entire trade collapse over a longer period such as 1929–1933.

Kehoe and Ruhl (2013) use five-digit SITC categories. Our three-digit SITC categories are obviously much broader, and using them will thus bias our results towards the conclusion that it was the intensive margin that mattered. We therefore repeated the exercise using data for each of our countries that are consistently defined over time and as disaggregated as possible

given the countries' statistical classifications. For China we were able to consistently disaggregate our data into 134 commodity categories[14]; for the Dutch East Indies we have 227 commodities; for India (based on Arthi et al., 2020) we have 114; and for Japan we have 171. For all four countries the intensive margin explains more than 94% of the trade collapse between 1929 and 1931, and more than 92% between 1929 and 1933. The conclusion that it was the intensive margin that explains our four trade collapses, despite the shift towards protection over the period, is robust.

SECTORAL COMPOSITION OF THE TRADE COLLAPSES

During the GTC trade in durable goods fell by a lot more than trade in non-durables, as consumers delayed big-ticket purchases and investors delayed purchases of capital goods. Was the same true during the trade collapse of 1929–1931?

Figure 8 plots the percentage changes in nominal imports in our four countries, distinguishing between durables and non-durables, where the former are defined as automobiles, capital goods and durable industrial supplies and materials, and the latter are taken to be everything else. As can be seen, imports of durables fell by a lot more than imports of non-durables in the cases of Japan and Java, but the same was not true of either China or India. This was not because Chinese and Indian consumers continued to purchase imported automobiles: car imports fell in all four countries by remarkably similar amounts (ranging from 62% to 67%, very similar to the decline recorded in the United Kingdom). Rather, imports of capital goods fell by less in India (37%) than in Java or Japan (61%–62%), and by a lot less in China (just 6%). A plausible explanation would be the industrialisation that was occurring in both countries during the 1930s. Chinese industrial growth during the period outstripped that in not only India or Japan, but Stalin's Russia as well (Brandt et al., 2017); while less spectacular, Indian industry was also benefitting from the infant industry protection afforded it during the period. Rapid industrialisation required imported capital goods, as well as durable industrial materials. The
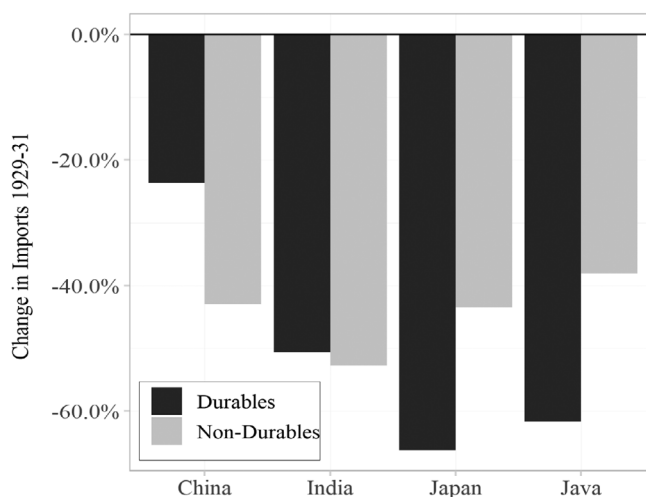

FIGURE 8 Per cent declines in nominal imports, 1929–1931.
Source: See Section 4. Data are in local currency units (but US dollars for China)
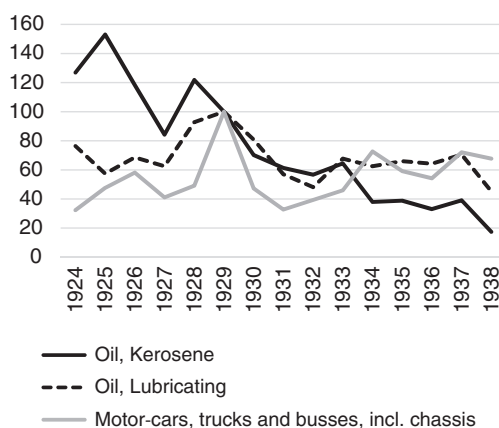
FIGURE 9 Imports of strategic goods, China, 1924–1938.
Source: Own calculations based on the sources described in Section 4

trade collapse associated with the Great Depression was superimposed upon a period of rapid structural change in China and India; once that is taken into account, the commodity composition of the trade collapse was broadly similar to what would have been expected, given the experience of the GTC.

One might also ask whether war (in China) or preparations for war influenced the composition of imports. To this purpose, we searched the journal *Far Eastern Survey* from 1935 to 1938 for articles mentioning strategic goods and war materiel. In the context of China, kerosene, lubricating oils and trucks were mentioned in a 1938 report (Radius, 1938). In Figure 9 we plot these series (as indices) for 1924 to 1938. As can be seen, the post-1929 collapse of imports in the automobile (durable) category was considerable, as was the recovery after 1932. Similarly, lubricating oil imports bounced back after 1932, while kerosene imports fell more or less continuously over the whole period.

As mentioned above, Japanese statistics ceased to report detailed data on a number of goods from 1937, presumably for strategic reasons.[15] We can use this information to identify probable strategic goods, based on observing positive imports in 1936, but zero imports in 1937 and 1938. Table 2 presents a list of 34 such goods. Including the potential false positives fish guano, submarine telegraphic/telephonic cables and shirtings and sheetings (grey), which were imported in only very small quantities before 1937, we can construct an import index for these "strategic" goods and compare this to imports of all other goods (Figure 10). The two categories of goods behaved almost identically during the trade collapse, but from 1935 the trends diverge, with imports of strategic goods falling before vanishing from the data altogether in 1937.

The picture regarding trade in strategic goods and war-related materiel remains unclear and warrants further investigation, for both China and Japan. The relatively unimpressive growth in imports of such goods may be an artefact of statistical reporting (in the case of Japan), or it may suggest either import substitution or a shift in the geographical composition of trade.[16]

GEOGRAPHY OF THE TRADE COLLAPSES

The GTC was relatively balanced geographically: countries cut their imports from all regions in a more or less symmetric fashion. Was the same true during the Great Depression? As already

TABLE 2 "Strategic" goods in our sample

| Import category	1936 import value (thousands of yen)
Automobiles	3673
Brass and bronze (ingots, slabs, other)	562
Chassis	1644
Copper (ingots and slabs)	32,454
Copper (other)	2558
Crude mineral oils	15,906
Ferro-chrome and other non-malleable iron alloys	411
Ferro-manganese	7
Fish Guano	0.15
Gas engines and petroleum engines	14,977
Iron (bands and hoops)	4095
Iron (bars, rods, T. angle, sheets, round/flat and the like)	10,609
Iron (fish-plates)	2
Iron (other)	35
Iron (ribbons)	2352
Iron (special steel A and B)	7881
Iron (wire rods)	4559
Iron pipes and tubes (cast, not coated with metals)	3
Iron pipes and tubes, coated with other metals	20
Iron pipes and tubes, not coated	7794
Iron plates and sheets (coated with other metals, including tinned)	16,283
Iron plates and sheets galvanised	23
Iron wires	1206
Iron, other, in lumps	139
Iron. ingots, blooms, billets and slabs	1705
Kerosene and other illuminating and mineral oils	39,895
Metal or wood working machinery (other)	20,753
Parts of automobiles (other = not tyres)	32,375
Pig iron	27,676
Plate or sheet iron (not coated with metals)	5242
Rails	2869
Shirtings and sheetings (grey)	0.05
Submarine telegraphic or telephonic cables	0.004
Tyres for automobiles	16

Source: See text.
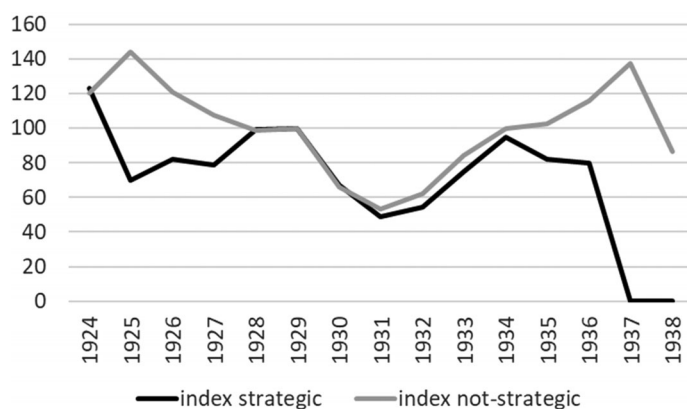
FIGURE 10 Imports of strategic materials, Japan, 1924–1938.
Source: Own calculations based on the sources described in Section 4

noted, while tariff policy in the Dutch East Indies was non-discriminatory, in 1933 the colony adopted a series of non-tariff measures which discriminated in favour of the Netherlands. As for India, it had started to apply "differential" tariffs for iron and steel products as early as 1927. These discriminated in favour of goods "of British manufacture."[17] By 1930 British cotton exports were also enjoying tariff preferences in the Indian market. In 1932 the Imperial Economic Conference in Ottawa instituted a wider scheme of intra-Imperial preferences, with the United Kingdom and India agreeing a trade deal granting Indian tariff preferences to a wide range of exports from the United Kingdom itself, and in some instances to exports from British colonies (as distinct from Dominions) as well (for further details see Arthi et al., 2020).

We are therefore particularly interested in whether within-Empire trade evolved differently to non-Empire related trade. We explore this question in two ways. First, we compare how the imports of the colonies in our sample (Java and India) arriving from their metropolises (the Netherlands and United Kingdom, respectively) declined, in comparison with imports from other important trading partners (the United States and Japan). Second, we compare the experiences of these two colonies with those of the two independent countries in our sample, China and Japan.

It might seem logical to simply look at the percentage declines in imports coming from each source during the interwar trade collapse, but this would be misleading. Figure 11 plots nominal imports arriving from our four source countries (Japan, the Netherlands, the United Kingdom, and the United States) into each of our four Asian countries, measured as before in local currencies (but in US dollars in the case of China). As can be seen, there are very strong trends in the series. In particular, imports from the United Kingdom were trending down in all four countries prior to the Depression, as British exporters faced ever-stronger competition from local producers and Japanese competitors. Similarly, Dutch imports into Java had also been in sharp decline prior to the Depression. Japanese exports had been on the rise everywhere except China, and while they suffered as a result of the Depression and protectionism, they were helped by the 1931 devaluation.

In this longer run context, it seems clear that the Depression saw a dramatic reversal of previous trends. Indian imports from the United Kingdom collapsed between 1929 and 1931, but from then on they remained steady, reversing the prolonged pre-Depression decline. The timing coincides with the shift to Imperial Preferences within the British Empire. In Java imports from
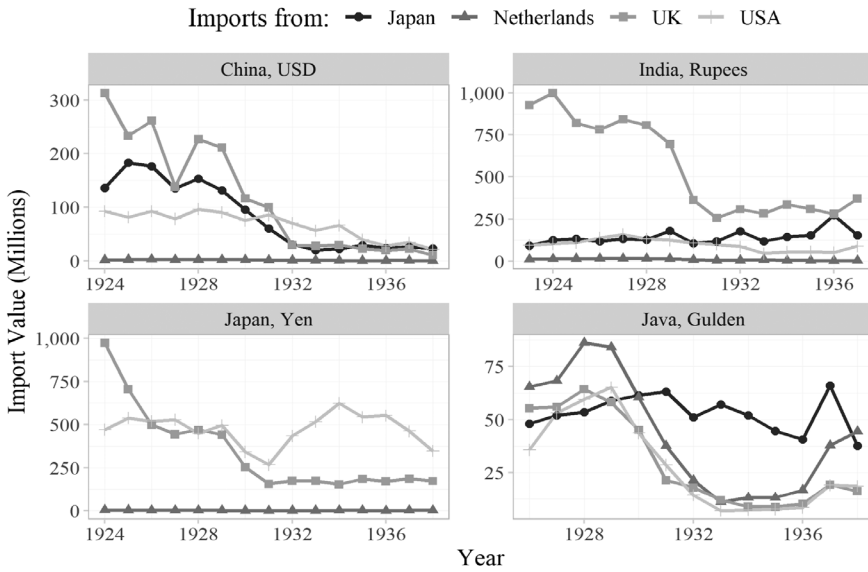
FIGURE 11 Nominal imports, 1924–1938.
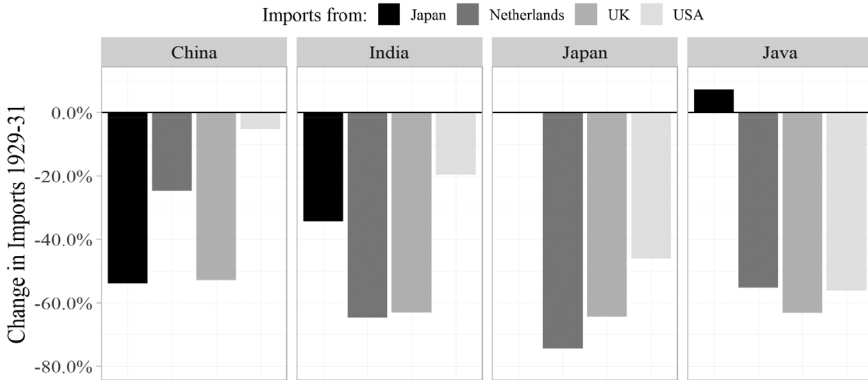*Source:* See Section 4. Data are in local currency units (but US dollars for China)

FIGURE 12 Percentage falls in nominal imports, 1929–1931.
Source: See Section 4. Data are in local currency units (but US dollars for China)

not only the Netherlands, but the United Kingdom and United States as well, collapsed between 1929 and 1933. In contrast, Japanese imports actually rose between 1929 and 1931, before falling steadily for several years.

Figure 12 plots the percentage declines in imports from each source between 1929 and 1931. A common theme is the very large declines in imports from the European colonial powers, reflecting their long-run deteriorating competitiveness referred to above. Japanese imports into China, and American imports into Java, were also particularly badly hit.

Figure 13 provides a final perspective on the issue, plotting the shares in total imports in each of our four countries of imports from Japan, the Netherlands, the United Kingdom, and the United States. In the case of Java, a surge in the share of imports coming from Japan was
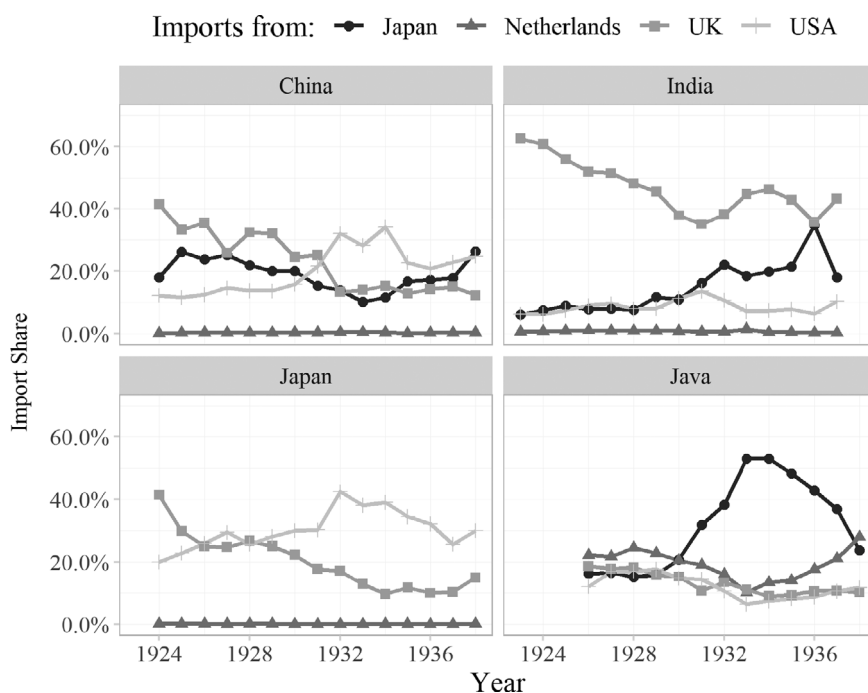
Imports from: — Japan — Netherlands — UK — USA

FIGURE 13 Import shares, 1924–1938 (per cent of total).
Source: See Section 4. Data are in local currency units (but US dollars for China)

halted in 1932/1933, and a decline in the Netherland's share was reversed. In the case of India, similarly, a long-standing and dramatic decline in the share of imports coming from the United Kingdom was halted. Arthi et al. (2020) demonstrate that pro-British tariff preferences, non-tariff barriers, and increasing general tariffs on cotton textiles that hit Japanese exports particularly hard, explain much of this trend reversal. By the mid-1930s protectionism was boosting the United Kingdom's share of Indian imports by more than a third. This is consistent with the fact that similar declines in the share of the United Kingdom in the imports of China, Japan and Java continued after 1932/1933, and that there was no reversal in the increasing Japanese share of Chinese imports.[18] It is tempting to conclude that trade policy also mattered in the case of the Dutch East Indies, with the trend reversals documented in Figure 13 coinciding with the introduction of discriminatory non-tariff barriers to trade in 1933.

Besides Japan, the United States was the other large non-European trading partner of our four countries. Interestingly, its share in Japanese and Chinese imports rose from 1932 to 1934, before declining again in the second half of the 1930s. In Japan, the mid- to late 1930s saw the tightening of intra-imperial trade links, especially regarding Manchukuo (Ayuso-Díaz & Tena-Junguito, 2020). In contrast, the US share of Indian and Javanese imports tended to decline after 1929, while being more stable overall.

The main message is thus that unlike in 2008–2009, the interwar trade collapse was not geographically balanced. During 1929–1931, this largely reflected strong pre-existing trends in the competitiveness of the European colonial powers relative to their American and Asian competitors. From 1931 onwards imperial relations started to matter a lot, most clearly in the case of India, but also in Java and Japan. Discriminatory trade policies mattered for Asian trade flows during this period.
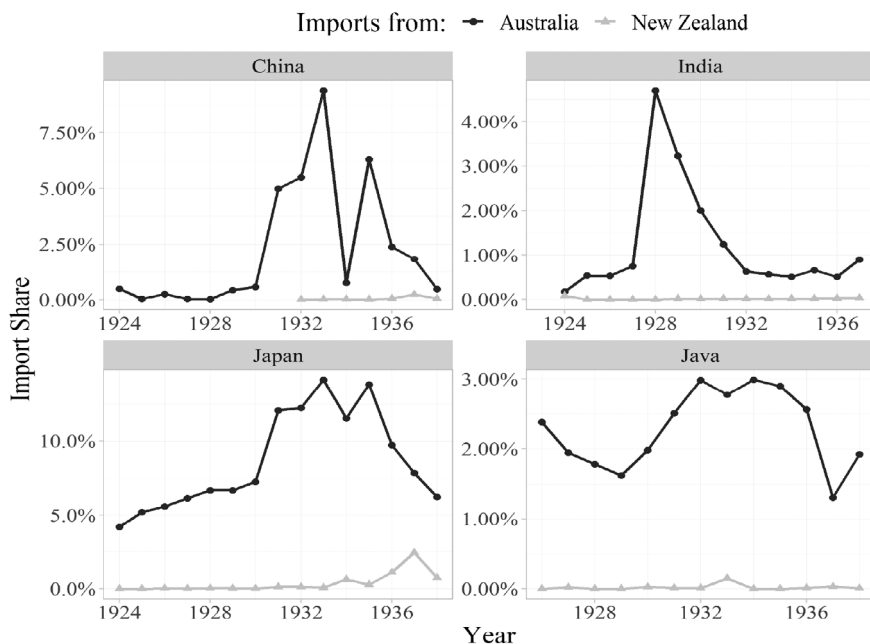
FIGURE 14 Import shares, 1924–1938 (per cent of total).
Source: See Section 4. Data are in local currency units (but US dollars for China)
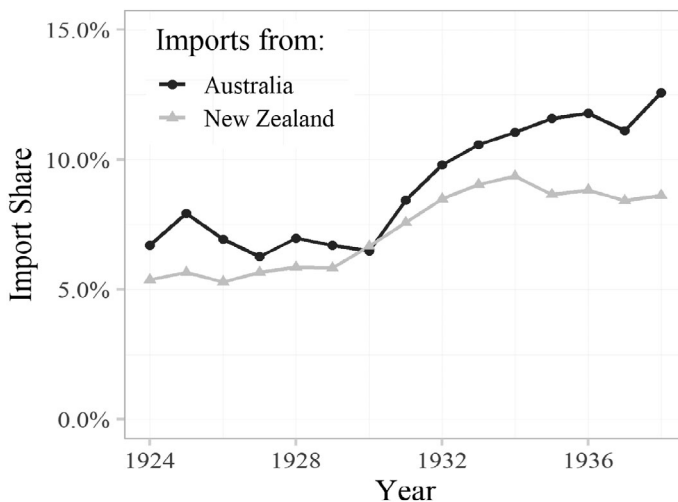

FIGURE 15 Import shares in the United Kingdom, 1924–1938 (per cent of total).
Source: Data underlying de Bromhead et al. (2019b)

AUSTRALIA AND NEW ZEALAND

Finally, we take a short look at the integration of Australia and New Zealand with Asia through the lens of our data.[19] Figure 14 plots these two countries' shares in the imports of our four
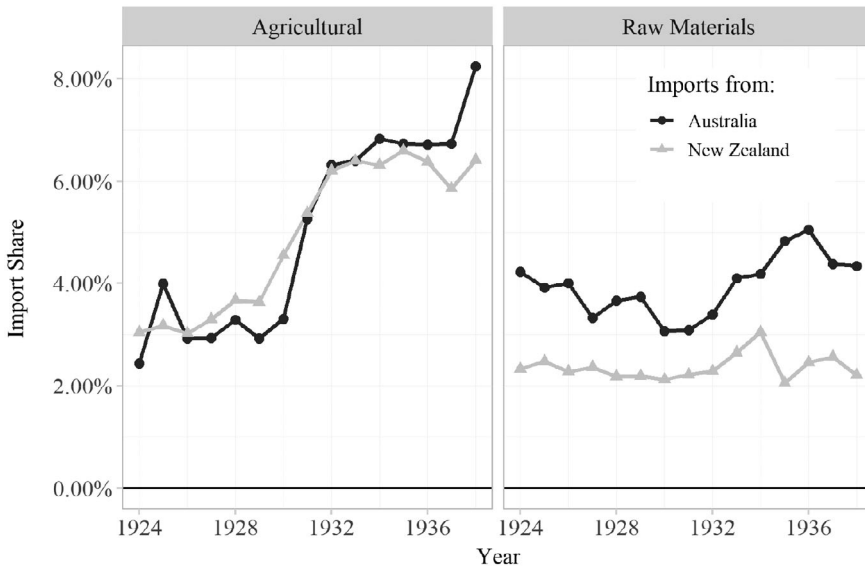
FIGURE 16 Import shares in the United Kingdom by broad goods category, 1924–1938 (per cent of total). *Source:* Data underlying de Bromhead et al. (2019b)

countries over time. Despite the very pronounced spikes in the data, there are no strong trends in any of these series.[20] In particular, there is no pronounced increase in the share of either country in Indian imports after 1931: consistent with Gowa and Hicks (2013), no empire effect can be observed for the "spoke" relationships within the British Empire, in this case linking Australia and New Zealand to India.

This contrasts sharply with the evolution of the two countries' share of imports to the "hub," the United Kingdom, which increased markedly over the same period (Figure 15). Figure 16 demonstrates that most of this increase was in agricultural goods (foodstuffs) as opposed to raw materials (e.g., wool). The sudden increase in Australia's share of UK imports from 1931 onwards is particularly striking, coinciding as it does with the introduction of Imperial Preferences in 1932.

CONCLUSIONS

The interwar trade collapses in our four Asian giants resembled the GTC in some respects, while differing from it in others. They occurred along the intensive margin, despite the sharp rises in protection occurring during the period. Imports of cars were particularly badly affected; more generally, imports of durable goods fell by more than imports of non-durables, except in China and India where rapid industrialisation increased imports of capital goods and durable industrial supplies. Strong underlying trends implied geographically imbalanced import declines between 1929 and 1931; from 1931 on, discriminatory trade policies began to affect geographical patterns of trade. Finally, prices were more important than quantities in driving the trade collapse.

This paper has also presented new, commodity-specific, bilateral trade datasets for China, Java, and Japan. In this paper we have only barely scratched the surface of what can be done with them; we hope that they will be a useful resource for scholars working on interwar trade in Asia and elsewhere.

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ENDNOTES

[1] One CGU was defined as 60.1866 centigrams of pure gold.

[2] This was noted and discussed by commentators of the period, such as Graham (1931).

[3] The indices were constructed using the chain base method and Fisher's ideal formula (Ho, 1930, p. 4; Chi-Ming, 1965, p. 195).

[4] In the case of the Dutch East Indies the two-year decline of 1921–1923 was greater than that of 1929–1931, but since the latter decline persisted until 1936 the cumulative decline experienced during the Depression was still greater. The collapse of 1966 was, however, an order of magnitude greater.

[5] For the detailed titles of the statistics see the Appendix. For 1937–1938 we used data on Burmese imports collected by the Office of Collector of Customs, Rangoon (Yangon), in order to achieve consistency in the figures reported for India, which has already noted reported data for India and Burma jointly until the fiscal year 1936–1937 (which we refer to as 1936). For the Dutch East Indies, we only use volume 1 of the annual trade statistics, reporting data for Java and the residency of Madoera (Madura); data for the remaining parts of the Dutch East Indies were reported separately.

[6] See the online appendix table 15 to de Bromhead et al. (2019b) available at https://cepr.org/content/trade-depression/uk-interwar-trade-data/when-britain-turned-inward (last accessed 7 January 2021) for a detailed matching of domestic items onto the SITC three-digit categories and further classifications used in our analysis for the example of the United Kingdom. Arthi et al. (2020), appendix 2, contains some more detailed information on our Indian data. Arthi et al. (2020), appendix 3 contains the list of countries. It should be noted that India does not report data for three of our SITC categories: fresh meat (011), eggs (025) and maize (025), probably because imports in these categories did not hit the quantitative threshold required to merit reporting.

[7] Government imports made up a relatively small share of total imports, and were often reported in much less disaggregated form. Including them would thus have led to a significant loss of granularity.

[8] See the Appendix.

[9] After the so-called Mukden incident staged by the Japanese military, the Japanese troops stationed in Kwantung and Korea invaded Manchuria in September 1931. They first took Newchwang (Yinkou) and subsequently most of Manchuria, finalising their conquest at Harbin in February 1932. In February 1932 Manchukuo was founded. In 1933, Jehol/Rehe province was conquered and later incorporated into Manchukuo.

[10] In the case of Burma the correction was greatly facilitated by the fact that Burma and India used almost identical commodity classifications. We do not expect this to be the case for China and Manchukuo, which probably used a classification system similar to that of Japan. One might also try to achieve geographical consistency by excluding the trade of Manchurian ports prior to 1932 as well. In this spirit, Inspector General of Customs [China] (1937, p. 16), reports a corrected table of "Foreign trade of China less the Manchurian trade with abroad, 1910–1936." This strategy, however, is not viable at the disaggregated commodity-country level since imports are not reported by commodity, country and port in the statistics.

[11] For example, Manchukuo likely applied very different trade policies from those adopted by China, so as to facilitate Japanese investment and economic integration with Japan. Furthermore, in the Chinese trade statistics imports from Manchukuo are not reported as such from 1932, the statistics only noting that "The statistics for 1933 and subsequent years do not include the foreign trade of Manchurian ports (including Dairen); statistics quoted for any year previous to 1932 do include the foreign trade of these ports; while statistics quoted for 1932 include the foreign trade of these ports for the first half of the year only." (Inspector General of Customs [China] (1937), p. iii).

[12] For China, we convert everything into US dollars, as in section 2, but do not apply the Manchuria adjustment. For Japan, note that the LTES data underlying Figure 2 and used in Figure 6 include imports from Korea and

Taiwan, which are—as noted above—not reported in the contemporary foreign trade statistics we relied on. LTES thus reports import values that are on average (over 1924–1936) 29% higher than the import totals reported in the contemporary foreign trade statistics. If we deduct aggregate imports from Korea and Taiwan from the aggregate LTES series, the difference between the contemporary import totals and those contained in LTES is reduced to less than 2%, while the share of our sample in total imports rises (for 1924–1936) from the average of 53% depicted in Figures 6 to 67%.

[13] Correlation coefficients for the period 1924 to 1936 between the series used in section 2 and total imports reported in the contemporary publications we used all exceed 0.98.

[14] From 1934 we were able to disaggregate Chinese imports into 158 categories.

[15] Porter (1936) and Radius (1938) mention several of these in the context of a discussion of strategic goods.

[16] As already noted, our Japanese import data do not include imports from Taiwan or Korea.

[17] Confusingly, Indian policy since 1923 had been to engage in what was called "discriminatory" trade policy. This meant protecting infant industries "with discrimination."

[18] The findings for China need to be interpreted with caution, however, as the Japanese occupation of Manchuria and the closing of the Chinese customs office in Dairen were of especial importance in the trade of China with Japan, both in substantial and accounting terms, as discussed above.

[19] As previously noted, before 1932, China's statistics reported Australia and New Zealand together. Given New Zealand's low share from 1932, it seems reasonable to discuss the joint exports to China as if they were from Australia.

[20] The spikes in Australian exports to China and India were driven almost exclusively by wheat, while the spike in exports to Japan was driven by wool. For Java, interestingly, iron and steel were the most important commodity group, while wheat and wool exports were negligible.

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APPENDIX

TRADE STATISTICS: PRIMARY SOURCES USED

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