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The anatomy of a trade collapse: The UK, 1929-33

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THE ANATOMY OF A TRADE COLLAPSE: THE UK, 1929-33

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Working Paper 2018-02

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The anatomy of a trade collapse: The UK, 1929-33*

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Abstract

A recent literature explores the nature and causes of the collapse in international trade during 2008 and 2009. The decline was particularly great for automobiles and industrial supplies; it occurred largely along the intensive margin; quantities fell by more than prices; and prices fell less for differentiated products. Do these stylised facts apply to trade collapses more generally? This paper uses detailed, commodity-specific information on UK imports between 1929 and 1933, to see to what extent the trade collapses of the Great Depression and Great Recession resembled each other. It also compares the free trading trade collapse of 1929-31 with the protectionist collapse of 1931-3, to see to what extent protection, and gradual recovery from the Great Depression, mattered for UK trade patterns.

JEL-Classification: F14, N70, N74.
Keywords: Great Depression; Great Recession; trade; protectionism.

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Introduction

The "Great Trade Collapse" (GTC) of 2008-9 has given rise to an extensive literature analyzing its nature and causes (a notable early contribution was Baldwin, 2009). Several stylized facts about the collapse are now commonly accepted:[1]

First, there was no great increase in protection during the GTC, implying that protection can only have played a modest role in explaining it (Kee et al., 2011).

Second, the GTC was by far the most severe post-war trade collapse, and stands out as being unusually synchronized (Martins and Araújo, 2009).

Third, the GTC was far more the result of a decline in the quantity of goods traded, than of a fall in traded goods prices (Levchenko et al., 2010; Bricongne et al., 2012).

Fourth, the GTC was overwhelmingly due to changes along the intensive margin, rather than the extensive margin (as predicted by Schott, 2009; see Levchenko et al., 2010; Haddad et al., 2010; Bricongne et al., 2012).[2]

Fifth, the GTC saw imports in some sectors fall more rapidly than others. Trade in goods fell by much more than trade in services; trade in automobiles and industrial supplies fell a lot, while trade in consumer goods and agricultural goods fell by a lot less (Levchenko et al., 2010; Bricongne et al., 2012); durable goods trade fell by more than non-durable goods trade (Levchenko et al., 2010; Gopinath et al., 2012).[3] It is commonly accepted that such compositional effects can help to explain the size of the GTC, especially when taken in conjunction with the existence of vertical supply chains and inter-

[1] Stylized facts two through five below are discussed by Bems et al. (2013).

[2] That is, it was due more to exports of previously traded goods falling (but not vanishing), than to a decline in the number of goods exported. This is consistent with the more general argument of Bernard et al. (2009) that short-run (i.e. one-year) changes in trade over time are dominated by changes in the intensive margin.

[3] Chen and Juvenal (2015) provide evidence that high quality Argentinian wine exports fell by more than low quality exports, and suggest that this may be indicative of a broader phenomenon.

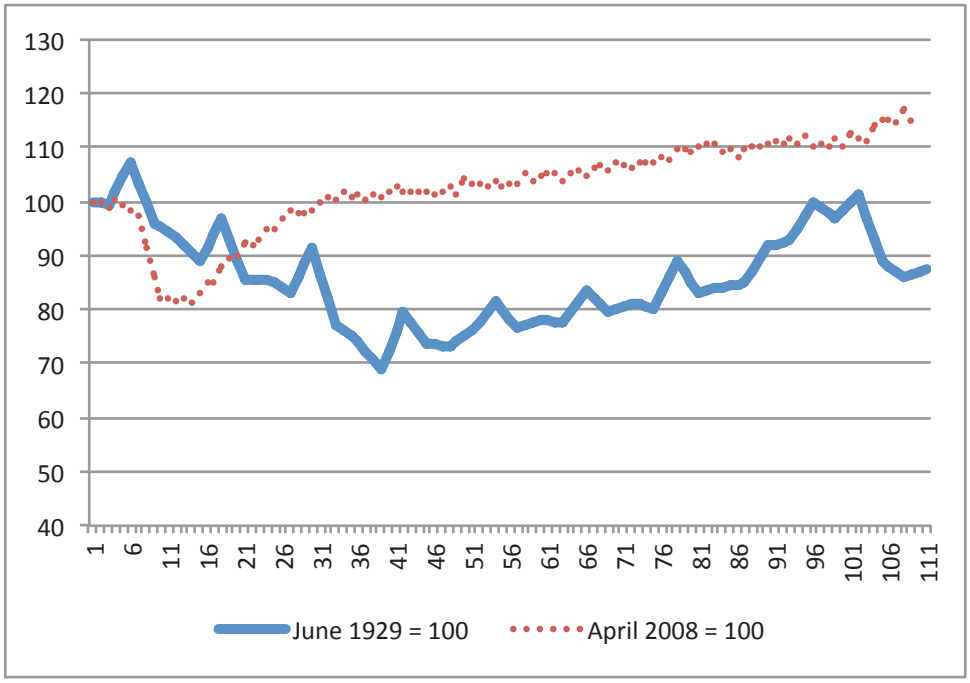
industry linkages (O'Rourke, 2009; Bems et al., 2010, 2011; Bussière et al., 2013; Bems et al., 2013; Eaton et al., 2016).

Sixth, the relative contributions of price and quantity to the GTC varied across sectors. In the case of the US, import and export prices of differentiated goods barely declined, implying that the entire fall in the value of differentiated goods trade was due to a fall in quantity; non-differentiated goods prices fell significantly, however, and thus contributed to the trade collapse in those products (Gopinath et al., 2012; see also Haddad et al., 2010).

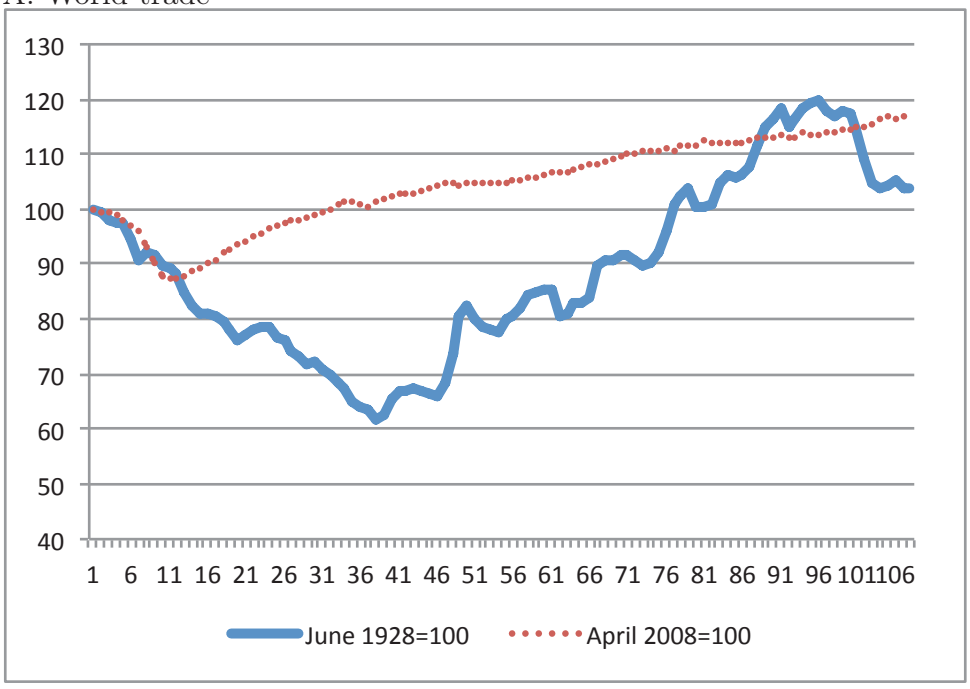
And seventh, Levchenko et al. (2010) find that in the case of the US, the collapse in trade was geographically quite well-balanced, in the sense that imports and exports fell by a lot for all major trading partners.

It would be nice to know if these stylized facts reflect the idiosyncratic features of the world economy in 2008, or if they are in some sense "typical" of great trade collapses. It is difficult to know, absent information on other great trade collapses, which is why it is surprising that there has not been more research to date comparing the experience of 2008-9 with that of the Great Depression. In an early contribution, written in "real time", Eichengreen and O'Rourke (2009) explicitly compared the output and trade collapses of the Great Depression and Great Recession: they found that at the time of writing (April 2009), world industrial output was falling as steeply as it had done during the first year of the Great Depression, while world trade was falling even more sharply (Figure 1). However, shortly afterwards the Great Recession bottomed out, reflecting the superior macroeconomic response of 2009, as compared with its interwar counterpart.

Almunia et al. (2010) took the comparison further, and highlighted the potential importance of compositional factors in explaining the violence of the GTC. During the interwar period, the world economy was still largely divided between an industrial "North" and a primary-commodity-producing "South", while during the Great Depression it was industrial output (along



A. World trade



B. World industrial output

Figure 1: World trade and industrial output during two crises
Source: Eichengreen and O'Rourke (2009), updated.

with output of semi-manufactured raw materials and non-agricultural primary products) that collapsed, not agricultural output (which remained stable). Similarly, it was manufacturing trade, rather than non-manufacturing trade, that collapsed after 1929. These divergent trends in output and trade translated into a terms of trade gain for the North, and a terms of trade collapse for the South, but they also had implications for the overall magnitude of the trade collapse. Almunia et al. (2010) point out that while manufacturing accounted for 70% of world merchandise trade in 2007, it only accounted for 44% in 1929. Had the composition of interwar trade been the same as in 2007, the trade collapse of 1929-30 would have been as big as that experienced during 2008-9.

Since then, there has been comparatively little work comparing the GTC with the trade collapse of 1929-33.[4] In particular, no-one has asked whether the earlier trade collapse shared the same features as the later one. This paper does that, using detailed information from a variety of sources on UK trade between 1929 and 1933. We find that while several stylized facts are common to both episodes, others are not. Some of the divergence between the two episodes is due to the shift towards protection which occurred in the UK at the end of 1931, and so one focus of the paper will be to contrast the largely free trading trade collapse of 1929-31 with the protectionist collapse of 1931-33.[5] We thus begin with a discussion of UK trade policy.

1 Trade policy during the Great Depression[6]

Notwithstanding several departures from 19th century practice (e.g. the 1915 McKenna Duty, the 1920 Dyestuffs Industry Act, the 1921 Safeguarding of

[4]Exceptions include Jacks et al. (2009) and Eaton et al. (2011).

[5]Gordon (1941), League of Nations (1942), and Irwin (2012) provide excelllent introductions to interwar protectionism.

[6]This section draws on de Bromhead et al. (2017), which provides a detailed account of interwar British trade policy and its consequences.

Industries Act, and so forth), British trade policy remained predominantly liberal until 1931. However, in November of that year the Abnormal Importations Act allowed the Board of Trade to impose tariffs of up to 100% *ad valorem* on manufactured goods from outside the Empire, and the Horticultural Products (Emergency Duties) Act soon allowed the Minister of Agriculture to impose similar duties on non-Empire fruit, flowers and vegetables.

In February 1932 an Import Duties Act imposed a general 10% tariff on goods not already subject to duties, though some important primary imports were exempted. Goods from British colonies were exempted, while imports from the self-governing Dominions were temporarily exempted pending the outcome of the Ottawa conference due to begin in July. The new Import Duties Advisory Committee could impose additional duties.

The Ottawa conference led to a series of bilateral trade agreements between the participants, the UK signing agreements with Canada, Australia, New Zealand, South Africa, Newfoundland, India and Southern Rhodesia. Broadly speaking, Britain agreed to maintain or raise tariffs imposed on foreign imports under the terms of the 1932 Import Duties Act, and not to reduce the 10% *ad valorem* tariff without the consent of the Dominions; to continue to exempt Empire products from these tariffs; and to introduce or enhance Imperial Preference on a wide range of agricultural commodities and raw materials of special interest to the Dominions, by raising duties or by protecting goods that had previously been duty free such as wheat. In addition, quotas were introduced for several agricultural commodities, on the basis that policy needed to serve the interests of "the home producer first, Empire producers second, and foreign producers last" Richardson (1936, p. 138).

de Bromhead et al. (2017) analyse a sample of 258 goods imported into the UK from 42 countries, between 1924 and 1938. The sample accounts for roughly half of total British imports, and is representative of British imports

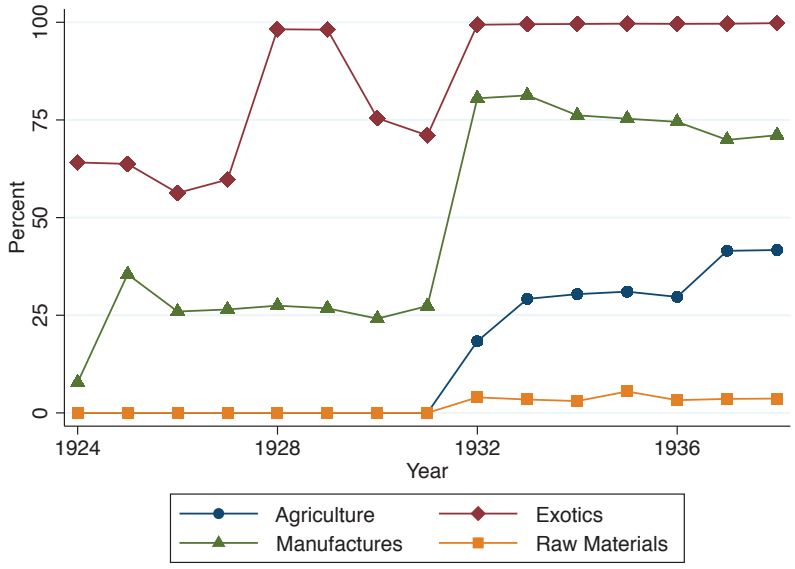


Figure 2: Share of imports subject to import tariffs, by broad category
Source: data underlying de Bromhead et al. (2017).

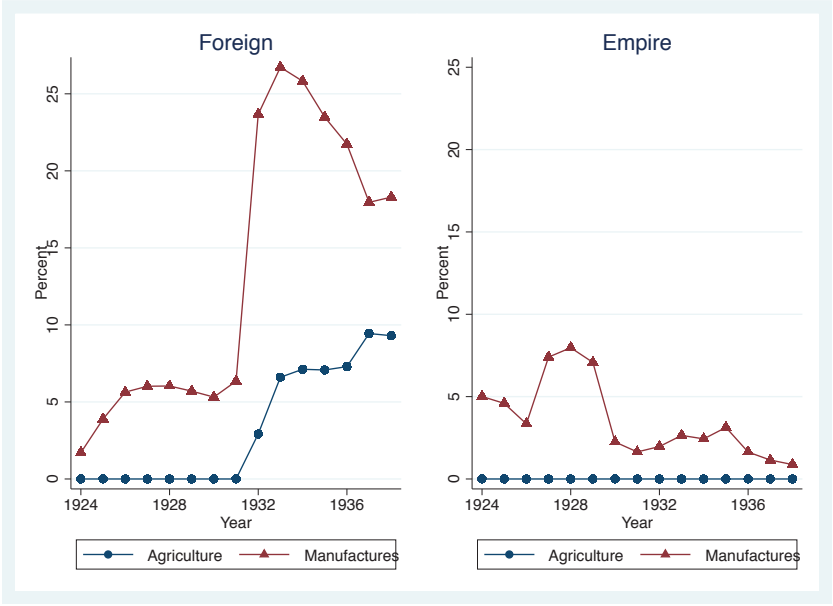


Figure 3: Weighted tariff rates by broad category, 1924-1938
Source: data underlying de Bromhead et al. (2017).

during the period. UK imports during this period can be usefully divided into four broad categories: agricultural products such as wheat or meat; manufactured goods such as copper or machinery; raw materials such as coal, fertilizers, raw cotton or oilseeds; and "exotic" or "colonial" goods, on which revenue tariffs were levied. (Tariffs on goods such as tea, coffee, sugar and tobacco were traditionally very high, reflecting highly inelastic demand.)[7] Figure 2 plots the share of imports in each of these four broad categories that were subject to duties of one kind or another during the interwar period. As can be seen, the shift towards protection in 1931 mostly involved an increase in agricultural tariffs (which had been previously non-existent) and manufacturing tariffs. Figure 3 shows that these tariffs discriminated heavily in favour of Empire countries, and against the rest of the world. Empire suppliers faced no agricultural tariffs at all after 1931, and manufacturing tariffs averaging less than five percent, while foreign countries faced steadily rising agricultural tariffs (as well as quotas in some sectors), and manufacturing tariffs averaging over 20 percent.

In summary: the UK trade collapse of 1929-33 took place under two very different trade policy regimes, a broadly liberal one from 1929-31, and a protectionist one from 1931-33 which saw not only a substantial increase in protection, but active discrimination in favour of the British Empire, and against the rest of the world. The first stylized fact about the GTC clearly does not apply to the interwar period.

[7]Raw silk and petroleum were also included in this category, since although they were raw materials, they became subject to tariffs that were much higher than the tariffs applied to raw materials generally, presumably for revenue-raising reasons. Full details of this four-category classification are provided in de Bromhead et al. (2017), Appendix 1.

2 The 1929-33 trade collapse in comparative perspective

How did the trade collapse of 1929-33 compare with previous and subsequent declines in trade, including the trade collapse of 2008-9? Figure 4 plots annual log changes in the value of UK imports since 1870, while Figure 5 provides similar information for UK exports. The data were taken from the Bank of England's Three Centuries database (Bank of England, 2016, accessed 21 March 2017.) The two shaded areas represent the two world wars, while the two vertical dashed red lines represent the onset of the Great Depression in 1929, and the Great Recession in 2008. As can be seen, the largest one year drop in the value of imports during this period came in 1921 (0.53 log points). However, the cumulative 4 year decline from 1929 to 1933 was slightly larger (0.54 log points). By contrast, the decline in 2009 was much smaller (just 0.076 log points, as compared with 0.142 log points in 1930). The contrast between the trade collapses of the Great Depression and Great Recession emerges even more clearly when it comes to exports. Once again, the largest single fall in the value of trade came in 1921 (0.61 log points), while the cumulative decline from 1929-33 was 0.65 log points, and exports fell in 2009 by just 0.054 log points (as compared with 0.216 log points in 1930).

Finally, Figure 6 plots import and export shares of GDP in the UK. As can be seen, the plunge in the trade ratio after 1929 dwarfs both even the 1921 decline, while the ratio actually rose after 2008 (only declining in 2014).

1921 aside, the Great Depression clearly stands out as the the period that saw the greatest UK trade collapse over the past century and a half. In comparison, the UK's Great Recession trade collapse was a much smaller, and shorter-lived affair.

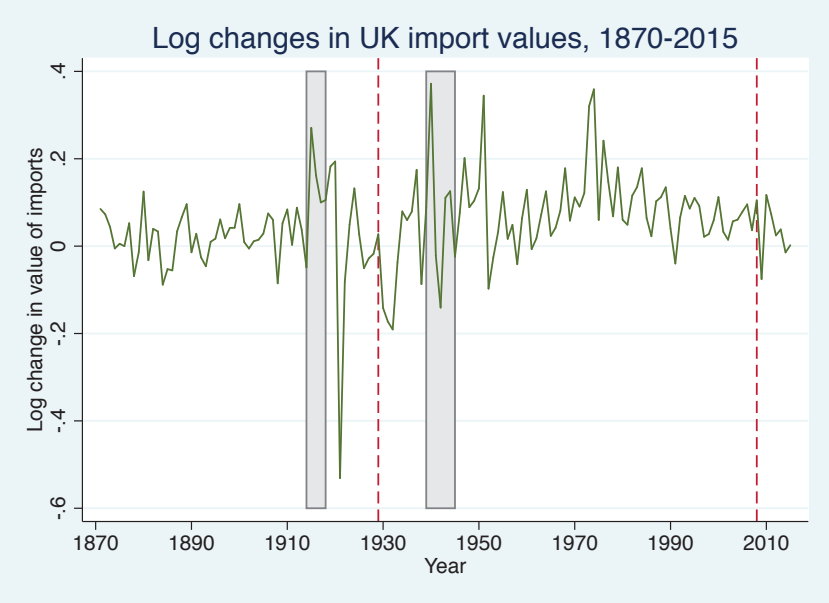


Figure 4: Annual changes in UK imports, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

3 Prices versus quantities during the interwar trade collapse

The nature of the 1929-33 and 2008-9 trade collapses were very different. The Great Depression saw substantial deflation, while the Great Recession did not. Prices of food and raw materials, in particular, fell sharply across the globe after 1929, while manufacturing prices fell by less. Given the international division of labour of the time, between a manufacturing-exporting North and a primary-product-exporting South, this implied that the terms of trade moved sharply in favour of the former, and against the latter. These forces were very much at work in the case of the UK. In 1929, manufactures accounted for 80 percent of its exports, but just 24 percent of its imports, while agricultural goods and raw materials accounted for 64 percent of UK

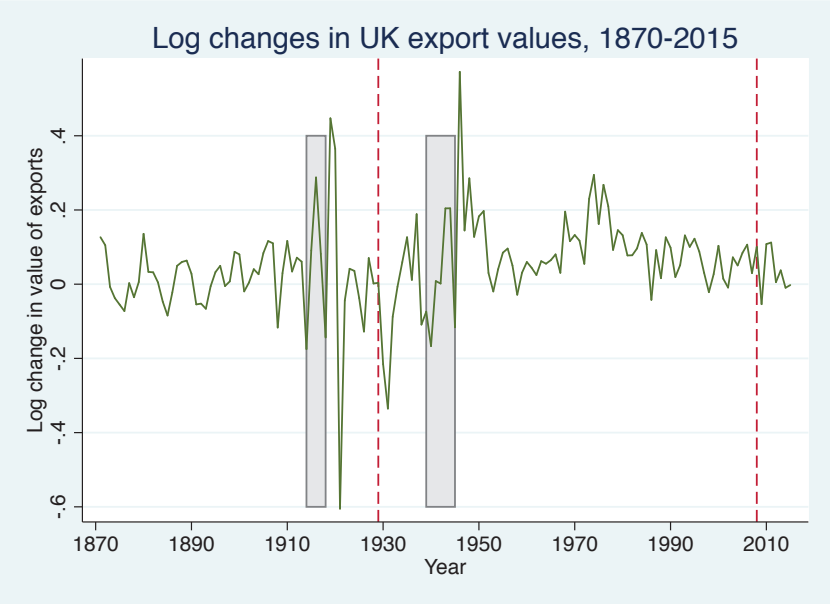


Figure 5: Annual changes in UK exports, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

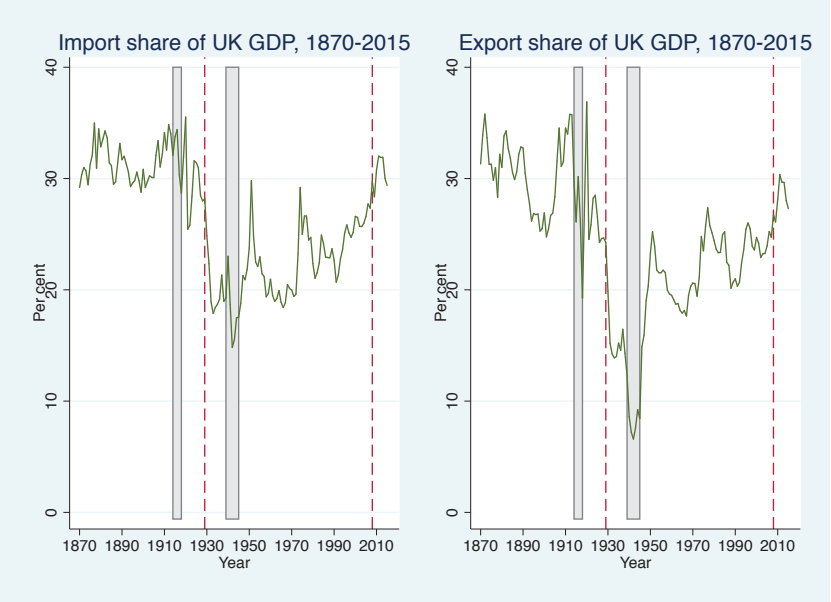


Figure 6: UK trade to GDP ratios, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

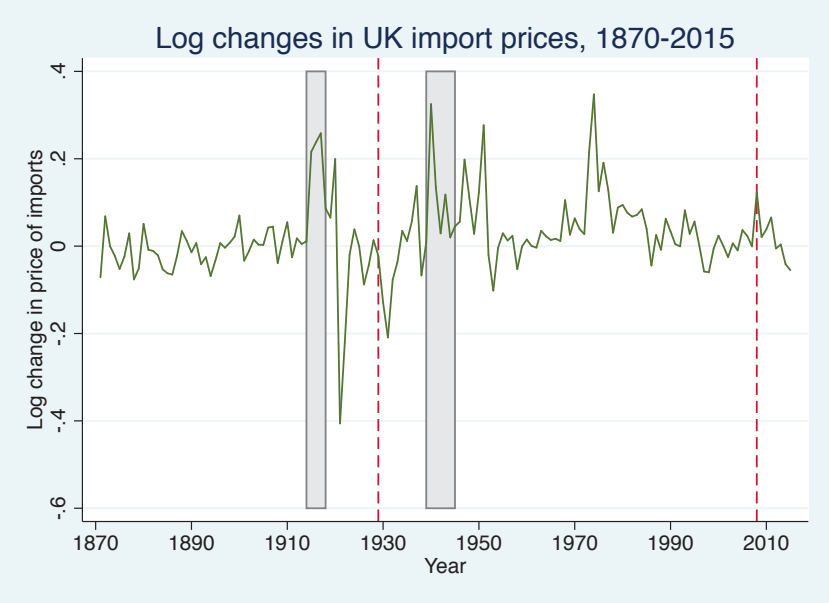


Figure 7: Annual changes in UK import prices, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

imports, but only 19 percent of its exports.[8]

Figures 7 and 8 plot annual log changes in import and export prices, respectively, from 1870 to 2015. Once again 1921 stands out as an exceptional year, but that episode aside, import price declines were greater during the Great Depression than at any other time. Export price falls during 1929-33 were less exceptional, but were still substantial. In sharp contrast, import and export prices actually increased slightly in 2009. Figure 9 shows the impressive improvement in the UK's terms of trade after 1929.

Given the magnitude of price declines during the Great Depression, trade quantities fell by substantially less than trade values. Figures 10 and 11 plot annual log changes in the volume of UK imports and exports, respectively. As can be seen, the volume of UK imports remained steady in 1930 and 1931, before dropping by 0.114 log points in 1932. This decline was, admittedly,

[8]See Table 3 below.

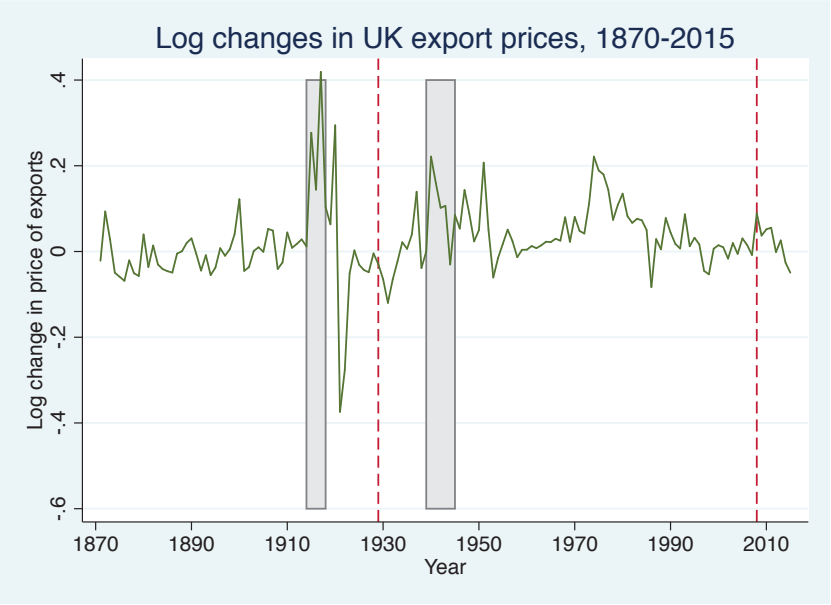


Figure 8: Annual changes in UK export prices, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

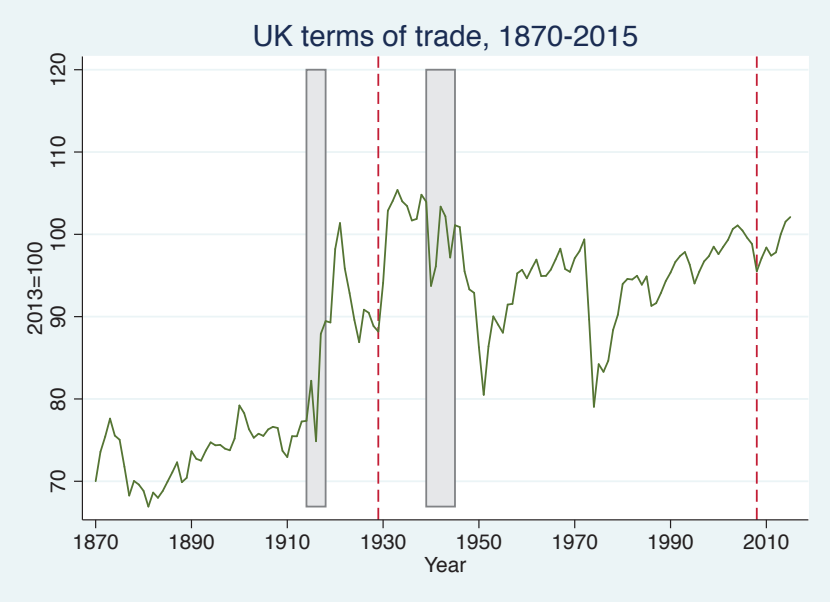


Figure 9: UK terms of trade, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

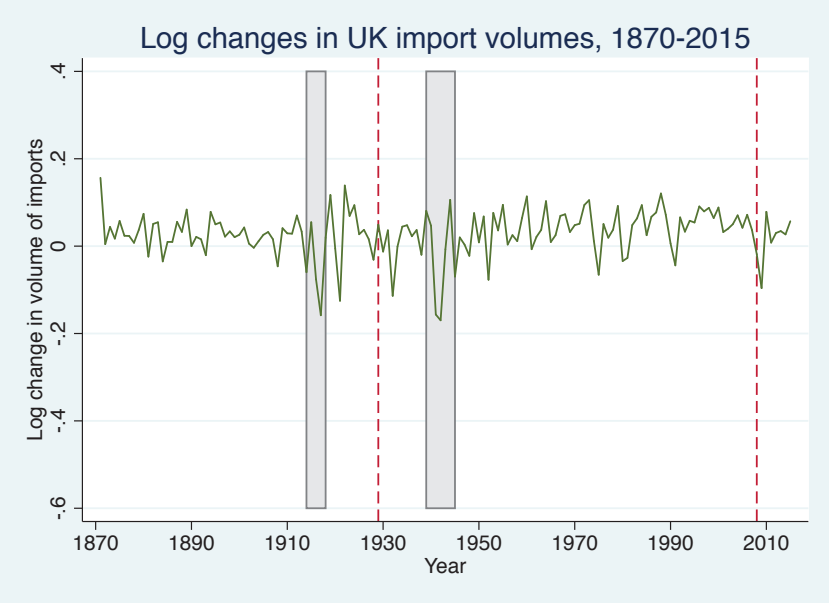


Figure 10: Annual changes in the volume of UK imports, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

smaller than those experienced, not only in 1921 as before (0.125 log points), but in 1917, 1941, and 1942. On the other hand, it was slightly larger than the decline experienced in 2009 (0.096 log points). Once again, 1921 aside, 1932 saw the greatest peacetime decline in UK imports, expressed in volume terms, during the period (though 1929 was not far behind). Export volumes fell by even more during the Great Depression: by a cumulative 0.37 log points during 1930 and 1931, as compared with 0.091 log points in 2008-9 (and 0.23 log points in 1921).

Table summarises the discussion to date. Falling import prices accounted for no less than 83% of the decline in the value of imports between 1929 and 1933. They accounted for essentially all of the decline in every year bar 1932, when they only accounted for 40%. Falling export prices accounted for 42% of the export collapse during the Great Depression. In sharp contrast, the UK trade collapse during the Great Recession was entirely accounted for by

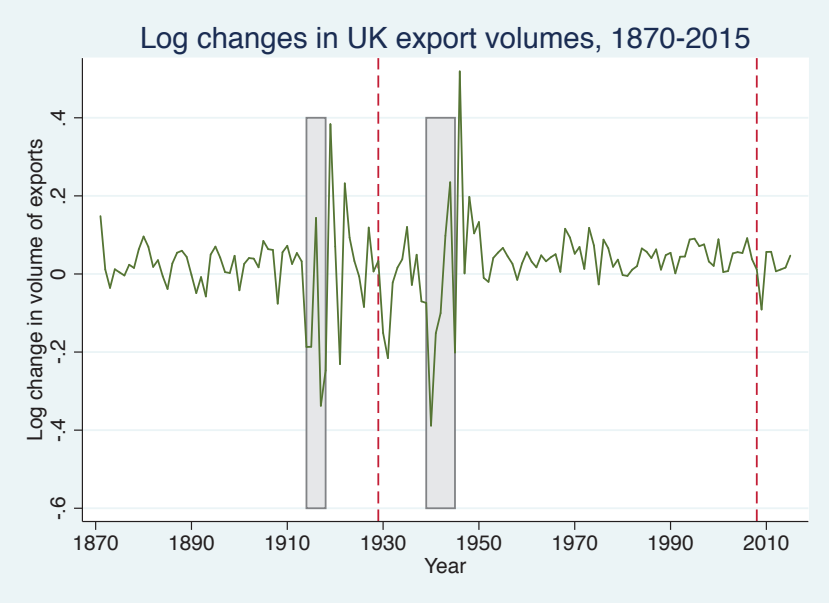


Figure 11: Annual changes in the volume of UK exports, 1870-2015
Source: Bank of England (2016, accessed 21 March 2017.)

falling trade volumes. Our third sylized fact regarding the GTC clearly does not apply to the earlier episode.

4 Intensive versus extensive margins

What were the relative contributions of the intensive and extensive margins to the Great Depression trade collapse? In order to answer this question, we need detailed information on commodity-level trade, by country. As already mentioned, in a companion paper (de Bromhead et al., 2017) we construct such a dataset, for a sample of 258 product categories imported from 42 countries. The data for 1929-33 are taken from the 1933 volume of the Annual Statement of the Trade of the United Kingdom (Statistical Office, H.M. Customs and Excise Department, 1935). The number of varieties (i.e. particular goods imported from particular countries) imported into the UK

Year	Imports				Exports			
	Value	Price	Quantity	Price share	Value	Price	Quantity	Price share
1921	-0.531	-0.406	-0.125	76.4	-0.605	-0.374	-0.231	61.8
1930	-0.142	-0.129	-0.013	91.2	-0.216	-0.065	-0.151	29.9
1931	-0.173	-0.209	0.036	120.9	-0.335	-0.120	-0.215	35.7
1932	-0.191	-0.077	-0.114	40.3	-0.088	-0.066	-0.022	74.7
1933	-0.037	-0.036	-0.001	96.9	-0.007	-0.023	0.016	335.1
2009	-0.076	0.021	-0.096	-27.3	-0.054	0.037	-0.091	-68.8

Table 1: Decomposing three trade collapses
Source: authors' calculations, based on Bank of England (2016, accessed 21 March 2017.)

was 1338 in 1929, 1354 in 1930, 1339 in 1931, 1319 in 1932 and 1298 in 1933. The total number of varieties imported was thus stable between 1929 and 1931, the years when the bulk of the decline in trade took place, and fell by only 3% between 1929 and 1933.

Alternatively, we can decompose the decline in UK imports between 1929 and 1933 in the manner of Kehoe and Ruhl (2013, p. 380). When we compute the log change of the total imports of those varieties which are traded in both years, which we take to be the intensive margin, and compare this with the log change in the total value of all imports, we find that the intensive margin can account for the entire decline in trade.This is true not only for imports overall, but for trade coming from both the Empire and the rest of the world. Despite the many differences between the two trade collapses, the fourth stylized fact about the GTC seems to apply to the interwar period as well. Indeed, it applies not just at a one or two year horizon, but at a longer 4 year horizon as well.

5 The composition of two great trade collapses

Levchenko et al. (2010) divide US trade flows during the GTC into 10 categories, depending on sector and end-use, and distinguishing between durable

and non-durable goods. These are: foods, feeds, and beverages; industrial supplies and materials (both durable, and non-durable); petroleum and products; automotive vehicles, engines, and parts; other consumer goods (both durable, and non-durable); other capital goods (aircraft, computers, and other); and other goods. They find that trade in automobiles declined very sharply, on both the export and import side; that trade in industrial supplies was also particularly badly hit; that the value of petroleum imports (there were no exports) fell more than any other category; and that trade fell by much less in the food and consumer goods categories (especially non-durable consumer goods).

Did these divergent trends reflected a variety of idiosyncratic factors, or more fundamental features of the economy, having to do, for example, with investor and consumer responses in the face of a large and unexpected shock, or the differential impact of credit constraints on various sectors? The official UK trade statistics break down UK exports and imports into 1418 and 1627 categories, respectively (not including parcel post which we excluded from the analysis) (Statistical Office, H.M. Customs and Excise Department, 1935). We divided these trade flows into the same 9 categories as Levchenko et al. (2010) (that is to say, we excluded computers, which were not relevant in the earlier period).[9] The classifications used by Levchenko et al. (2010), as well as by Gopinath et al. (2012) (see later), are based on the "Net Exports of Goods and Services" account in the *National Income and Product Accounts* (NIPA) provided by the U.S. Bureau of Economic Analysis. We use the tables provided in the NIPA handbook (Bureau of Economic Analysis, 2016, Tables 8-B, 5-A and 6-B) to match British interwar trade data onto these classifications.[10] We distinguish between durable and non-durable goods in

[9]There were only ten computers, properly defined, in the world by 1946 (Marks, 2016, p. 178)

[10]To do this, the fine-grained North American Industrial Classification System (NAICS) underlying NIPA was used (see http://www.statcan.gc.ca/eng/subjects/standard/naics/2017/introduction), and especially the detailed 2017 North American Product Classification System (NAPCS) table

the same way as the Bureau of Economic Analysis (2016, p. 5-4) BEA (2016, chapter 5, p. 5-4), defining durable goods as those that have "an average useful life of at least 3 years".[11]Finally, we calculated the decline in trade for each of these nine categories, for both 1929-31 and 1931-33.

The results are plotted in Figure 12. In both panels, the percentage changes in trade during the GTC, taken from Levchenko et al. (2010), are plotted on the horizontal axis, while percentage changes in trade during the Great Depression are plotted on the vertical axis. The top panel plots the cumulative changes between 1929 and 1931, while the lower panel plots changes during 1931-33. Sectors experiencing larger percentage declines in output are shown on the left (2008-9) or bottom (1929-33) of the graphs.

As can be seen, the composition of the 2008-9 American, and 1929-31 UK, trade collapses was strikingly similar, despite the fact that we are considering two different countries in very different eras. Automobiles and industrial supplies were the most affected in both cases, consumer goods and food the least. The correlation across categories between the extent of the import collapse is positive and strong. The correlation is also clearly positive for exports, with trade in industrial supplies and automobiles being severely hit in both crises, and aircraft and consumer non-durables not being as badly affected.

The lower panel of Figure 12 tells a different story however: the cross-category correlation between the US GTC, and the UK trade collapse of 1931-33, was actually negative. One possible explanation is protectionism; another is the fact that the British economy started to recover following the UK's

available at https://www.naics.com/napcs-north-american-product-classification-system/ (last accessed 24 June 2017). This links products to NAICS defined industries.

[11]To distinguish durable from non-durable goods we used the Statistics Canada *Variant of NAICS 2012 - Durable / non-durable manufacturing industries* available at http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=128494 (last accessed 24 June 2017). We grouped raw materials according to the durability/non-durability of the intermediate and final goods produced by the main industries transforming them, which is consistent with NIPA. In practice, we follow the same classification as the post-2009 literature we are referring to.

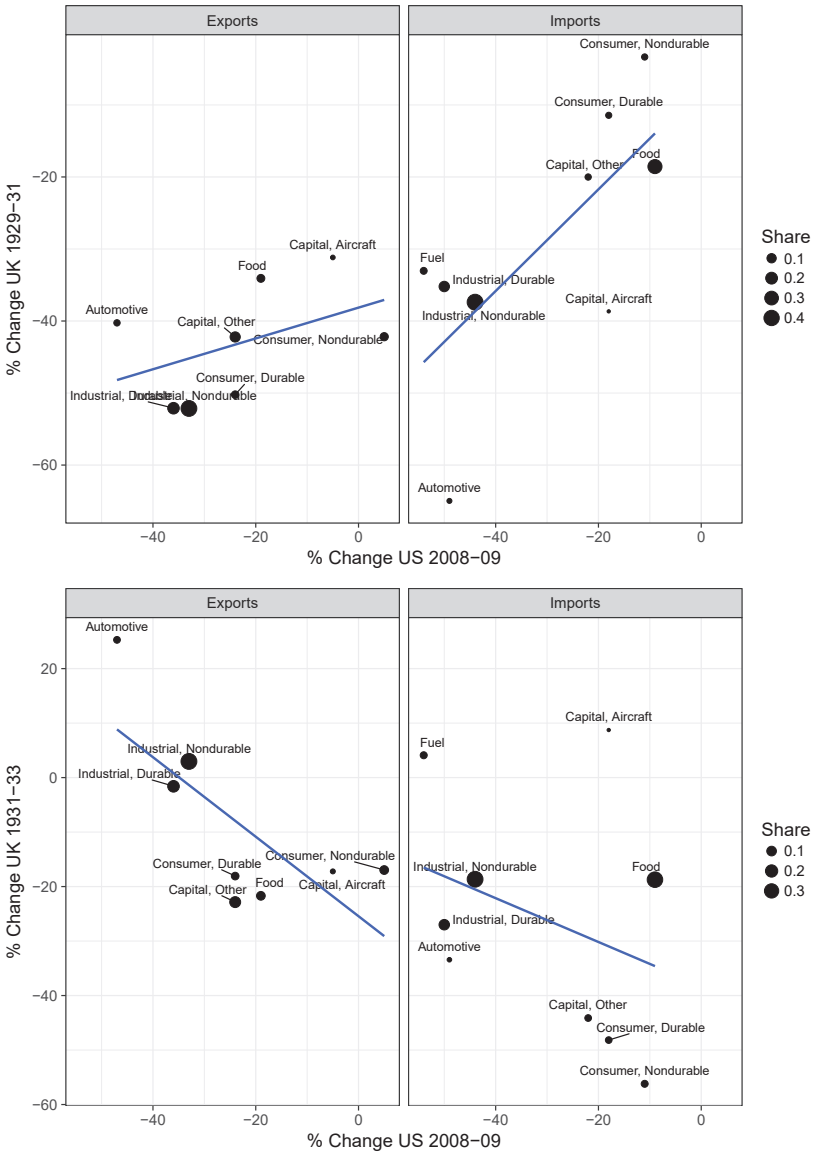


Figure 12: Nominal changes in trade, 1929-33 and 2008-9
Source: authors' calculations, based on Statistical Office, H.M. Customs and Excise Department (1935), and Levchenko et al. (2010).

departure from gold in September 1931. The fact that the value of investment fell more sharply in both periods than did the value of consumption perhaps argues more in favour of the former than the latter explanation (Feinstein, 1972, Table 2, p. T9). Whatever the reason, the reversal of the correlation between the two periods is striking, and reflects, for example, the fact that consumer goods imports plumetted after 1931. We would argue that the 1929-31 experience more clearly matches that of 2008-9: this was a trade collapse coinciding with a more general economic collapse, in a broadly free-trading environment. And so it is suggestive that the composition of the 1929-31 and 2008-9 trade collapses was so similar.

6 Price changes during the two trade collapses

The sixth stylized fact regarding the GTC of 2008-9 has to do with the differing price changes for different types of goods. In particular, Gopinath et al. (2012) find that while US exports and imports of non-differentiated goods saw a 16% price decline on average, differentiated goods prices fell on average by approximately only 1%. Was this an idiosyncratic feature of the US economy in 2008-9, or did something similar occur in 1929-33?

It was possible to calculate unit values for 1196 of the 1418 export categories listed in the UK trade statistics, and for 1329 of the 1627 import categories. Since unit values are famously volatile, we followed Gopinath et al. (2012, p. 307) and excluded all unit value series where prices changed by more than 2 log points. This left us with 1191 export price series, and 1327 import price series. We then classified these price series in the same way as Gopinath et al., distinguishing between manufactures and non-manufactures, and then classifying manufactured goods by end-use; by durability; and by whether the goods were differentiated or not, using the classification in Rauch (1999).[12] Goods that could not be unambiguously assigned to one category

[12]We did so using the same sources as those listed in footnote 10.

were excluded from the analysis.[13] Finally, we calculated the median price change within each category.

The results are presented in Table 2. As can be seen, non-differentiated export and import prices fell by roughly 15-17% between 1929 and 1931, rather similar to the price changes experienced during 2008-9. However, differentiated goods prices also fell, though by much less (9-10%).[14] Breaking these aggregate findings down, it seems as though the big difference between 2008-9 and 1929-31 concerned non-manufactures, and nondurable manufactured goods. For these two broad categories, prices of differentiated and non-differentiated goods fell by very similar amounts between 1929 and 1931. However, prices for durable, differentiated, manufactured goods only fell by 2-3%, much less than the 14-15% price decline for non-differentiated durable manufactures. It seems as though what was true more broadly in 2008-9 was only true for durable manufactures in 1929-31.

Prices also fell more for non-differentiated than for differentiated imports between 1931 and 1933,[15] and prices did not fall at all for differentiated, durable, imported manufactured goods. The two sub-periods thus resembled each other on the import side. However, export prices fell by more for differentiated than for non-differentiated goods, and in particular for nondurable manufactures and durable intermediate goods.[16] We have no explanation for this apparent anomaly, though we recall that the second interwar subperiod was also an outlier when it came to the composition of the trade collapse (Section 5). It may also be that some goods that were classified by Rauch as non-differentiated in the late 20th century were in fact differentiated during the interwar period, since standardization might not yet have occurred in those particular product categories. In that case, Table 2 may

[13] These were typically goods described as "not elsewhere specified". Keeping these goods in the analysis, and allocating their price changes to all relevant categories, left the results almost entirely unchanged. Details available on request.

[14] The differences are statistically significant at the 5% level using Mood's median test.

[15] The difference is once again statistically significant.

[16] The differences are once more statistically significant.

	1929-1931					
	Exports			Imports		
	All	Nondiff.	Diff.	All	Nondiff.	Diff.
All goods	-11.4	-15.1	-9.5	-13.0	-16.7	-9.2
Nonmanufactures	-19.2	-18.1	-20.5	-19.4	-18.6	-21.9
Nondurable manufactures	-16.1	-16.1	-15.8	-16.5	-16.9	-15.9
Durables manufactures	-6.0	-15.0	-3.0	-5.5	-14.6	-2.5
Manufactures						
Consumption, nondurable	-15.5	-47.4	-14.7	-15.4	-41.3	-14.9
Intermediate, nondurable	-13.5	-12.1	-14.4	-12.6	-12.0	-12.9
Capital, durable	0.8	NA	1.2	1.3	NA	1.4
Consumption, durable	-10.0	-16.9	-9.0	-7.9	-25.5	-7.1
Intermediate, durable	-8.6	-13.6	-4.4	-8.1	-17.9	-4.9
	1931-1933					
	Exports			Imports		
	All	Nondiff.	Diff.	All	Nondiff.	Diff.
All goods	-8.0	-5.9	-9.7	-8.8	-10.9	-6.6
Nonmanufactures	-5.9	-6.2	-4.2	-11.1	-10.9	-12.1
Nondurable manufactures	-8.2	-5.7	-10.2	-11.3	-10.9	-12.2
Durables manufactures	-8.0	-6.9	-8.6	-2.3	-10.9	1.1
Manufactures						
Consumption, nondurable	-12.7	7.1	-13.2	-12.3	-5.2	-12.6
Intermediate, nondurable	-9.0	-5.7	-10.6	-12.0	-11.3	-13.0
Capital, durable	-5.5	NA	-5.6	10.6	NA	11.2
Consumption, durable	-13.5	-17.1	-13.5	-1.8	-53.2	1.1
Intermediate, durable	-8.4	-5.1	-11.0	-4.0	-7.0	-1.5

Table 2: UK import and export price changes, 1929-33 (percent)
Source: authors' calculations, based on the data in Statistical Office, H.M. Customs and Excise Department (1935).

be systematically under-stating price declines for goods that were in fact non-differentiated, and systematically under-stating the difference between the price experiences of non-differentiated and differentiated goods.

7 The geography of two trade collapses

Levchenko et al. (2010) find, for the US, that the GTC was remarkably balanced across trading partners. Was the same true for the UK during 1929-33? Table 3 gives the percentage changes in nominal trade flows for each of the four broad categories defined in Section 1, distinguishing between exports to and imports from the British Empire, on the one hand, and the rest of the world on the other.

As can be seen, between 1929 and 1931 the trade collapse was geographically balanced, in the sense that trade flows between the UK and the Empire fell by roughly the same amount as trade flows between the UK and the rest of the world.[17] Consistent with what we saw earlier, imports of industrial raw materials were particularly badly hit, but they fell by very similar amounts from both the Empire and from foreign countries. The picture was very different between 1931 and 1933. Exports to the two groups of countries fell by roughly similar amounts (although manufactured exports to the Empire remained constant, while those to the rest of the world fell by 7%). However, while imports from the Empire rose slightly, imports from the rest of the world fell by 30%. This difference between imports from the Empire and from the rest of the world was general across all four broad categories; it was largest for manufactures, and smallest for colonial goods. Table 4 shows that the prices of goods traded with the Empire and rest of the world fell very similarly, on average, suggesting that the shift towards the former and away from the latter evident in Table 3 was due above all to a relative shift

[17]The one exception concerns British exports of colonial goods such as sugar and tobacco: re-exports to the Empire remained roughly constant, while re-exports to the rest of the world rose dramatically.

	Exports			Imports		
	Share of total (1929)	Percent change	Percent change	Share of total (1929)	Percent change	Percent change
		1929-31	1931-33		1929-31	1931-33
All Countries	1.00	-47.06	-5.45	1.00	-29.44	-21.44
Agriculture	0.07	-34.06	-29.85	0.36	-20.47	-20.65
Manufactures	0.80	-49.38	-3.85	0.24	-20.02	-47.59
Raw Materials	0.12	-39.96	-2.41	0.28	-49.08	3.72
Colonial	0.01	-42.66	38.10	0.12	-30.07	-6.14
Foreign	1.00	-46.10	-6.76	1.00	-28.73	-30.44
Agriculture	0.05	-32.09	-26.96	0.34	-23.03	-29.50
Manufactures	0.75	-48.50	-7.38	0.30	-19.27	-53.87
Raw Materials	0.19	-41.29	-2.63	0.24	-46.20	-1.00
Colonial	0.01	-34.38	74.65	0.11	-34.23	-7.11
Empire	1.00	-48.27	-3.72	1.00	-31.19	1.02
Agriculture	0.10	-35.49	-32.08	0.40	-15.11	-3.85
Manufactures	0.86	-50.35	0.19	0.09	-26.14	6.53
Raw Materials	0.03	-30.28	-1.10	0.36	-53.78	12.68
Colonial	0.02	-49.59	-1.70	0.15	-22.94	-4.70

Table 3: Nominal UK trade flows, Empire versus foreign, 1929-33
Source: authors' calculations, based on the data in Statistical Office, H.M. Customs and Excise Department (1935).

	1929-31					
	Exports			Imports		
	All	Empire	Foreign	All	Empire	Foreign
All	-11.4	-10.4	-11.8	-13.0	-15.1	-13.4
Agriculture	-17.0	-15.5	-13.1	-15.6	-18.4	-16.3
Manufactures	-9.6	-8.5	-10.6	-9.6	-8.2	-9.8
Raw Materials	-20.9	-17.8	-19.8	-22.4	-24.2	-23.4
Colonial	-19.5	-10.3	-18.8	-24.8	-17.9	-25.6
	1931-3					
	Exports			Imports		
	All	Empire	Foreign	All	Empire	Foreign
All	-8.0	-8.3	-7.6	-8.8	-9.8	-7.7
Agriculture	-4.8	-4.9	-5.2	-11.3	-11.6	-9.8
Manufactures	-9.0	-9.5	-8.4	-5.5	-6.6	-5.6
Raw Materials	-7.0	-6.1	-5.9	-11.8	-15.0	-9.6
Colonial	-6.6	-5.2	-5.2	-10.8	-14.9	-5.5

Table 4: UK import and export price changes, 1929-33 (percent)
Source: authors' calculations, based on the data in Statistical Office, H.M. Customs and Excise Department (1935).

in real trade flows.[18]

Figure 13 provides an alternative perspective on the same issue. It plots imperial versus foreign percentage changes in export and import flows, in 1929-31 and 1931-33, for the same nine categories that we considered in Section 5. As can be seen, during 1929-31 categories that saw their trade fall by more *vis à vis* the Empire also saw larger declines *vis à vis* the rest of the world: the same underlying forces were lowering trade with both groups of countries. The same remained true for exports after 1931, but the correlation becomes negative for imports.

The fact that the geographical composition of the import collapse changed

[18]This British shift towards empire was mirrored by a more general balkanisation or international trade, that was the subject of much contemporary discussion: see for example Hilgerdt (1935, 1943); Condliffe (1941), or more recently Latham (1981, Chapter 3) and the many references in de Bromhead et al. (2017).

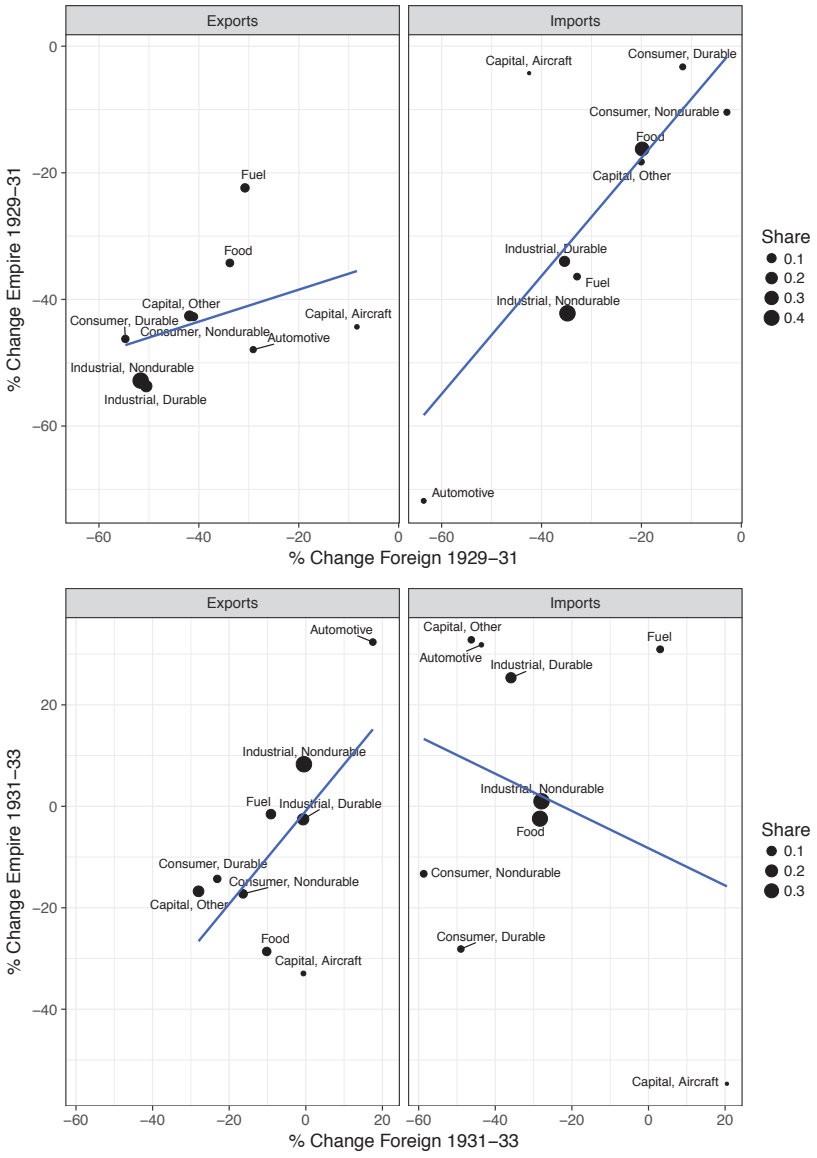


Figure 13: Nominal changes in trade, Empire versus foreign, 1929-33
Source: authors' calculations, based on Statistical Office, H.M. Customs and Excise Department (1935).

so radically after 1931 is consistent with the UK's switch to protection having had a major impact on trade flows (de Bromhead et al., 2017).[19] The fact that there was no such change on the export side suggests that the switch to Imperial Preference in 1932 may have helped Imperial producers exporting to Britain, more than it helped UK producers exporting to the Empire.

8 Conclusion

The GTC of 2008-9 and the trade collapse of 1929-33 took place in very different economic environments. The Great Recession was violent indeed, but much shorter-lived than the Great Depression. The interwar gold standard implied worldwide deflation, of a sort not seen in the later crisis. Trade policies remained broadly liberal during 2008-9, in sharp contest with the dramatic switch to protection experienced after 1929 worldwide (and after 1931 in the UK).

These differences mattered for the nature of the two trade collapses, in a number of ways. Most obviously, price declines accounted for a larger share of the interwar trade collapse, than they did of the 2008-9 GTC. And after 1931, discriminatory trade policies meant that the UK trade collapse became geographically imbalanced, in contrast to the US GTC experience.

Many other features of the two trade collapses are remarkably similar, however. This is especially the case if we compare the GTC with the UK trade collapse of 1929-31, which, like the GTC, was driven by a worldwide collapse in incomes and output, and took place in a country pursuing generally liberal trade policies. Both trade collapses took place along the intensive rather than the extensive margin (Section 4); the same types of goods were particularly badly hit in both instances (Section 5); and prices of differentiated durable manufactured goods barely fell on either occasion (Section 6).

[19] See also Gowa and Hicks (2013). Kitson and Solomou (1990) remains a classic reference on interwar UK protection.

These similarities are supportive of theoretical accounts of the GTC emphasizing the composition of expenditure changes during major economic crises, or the relative sizes of firms operating closer to or further away from the margin between exporting or not.

It should be emphasized, however, that we have only provided evidence for one major interwar economy, the United Kingdom, in much the same way as many writers on the GTC have focussed on the US. It remains to be seen whether the stylized British facts that we have uncovered were common to other economies during the interwar period.

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