

International aspects of the Great Depression and the crisis of 2007: similarities, differences, and lessons

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Abstract We focus on two international aspects of the Great Depression—financial crises and international trade—and try to discern lessons for the current economic crisis. Both downturns featured global banking crises which were generated by boom–slump macroeconomic cycles. During both crises, world trade collapsed faster than world incomes and the trade decline was highly synchronized across countries. During the Depression income losses and rises in trade barriers explain trade’s collapse. Owing to vertical specialization and more intense trade in durables, today’s trade collapse is due to uncertainty and small shocks to trade costs hitting international supply chains. So far, the global economy has avoided the global trade wars and banking collapses of the Depression, perhaps owing to improved policy. Even so, the global economy remains susceptible to large shocks owing to financial innovation and technological change, as recent events illustrate.

Key words: banking crises, gold standard, trade costs, trade collapse, vertical specialization, tariff retaliation

JEL classification: E42, E51, F33, F36, F44, F02, F15, G21, G28, G01, N10

I. Introduction

Despite the severe stagnation that has gripped the world’s economy in the aftermath of the subprime crisis, the Great Depression remains, without question, the longest, deepest, and broadest economic contraction that the industrialized world has ever known. In all 17 of the countries for which data are presented in Figure 1, real GDP *per capita* growth during 1930–33 was far slower than during the period before the First World War (1871–1913), the inter-war period as a whole (1919–39), the quarter-century following the Second World War

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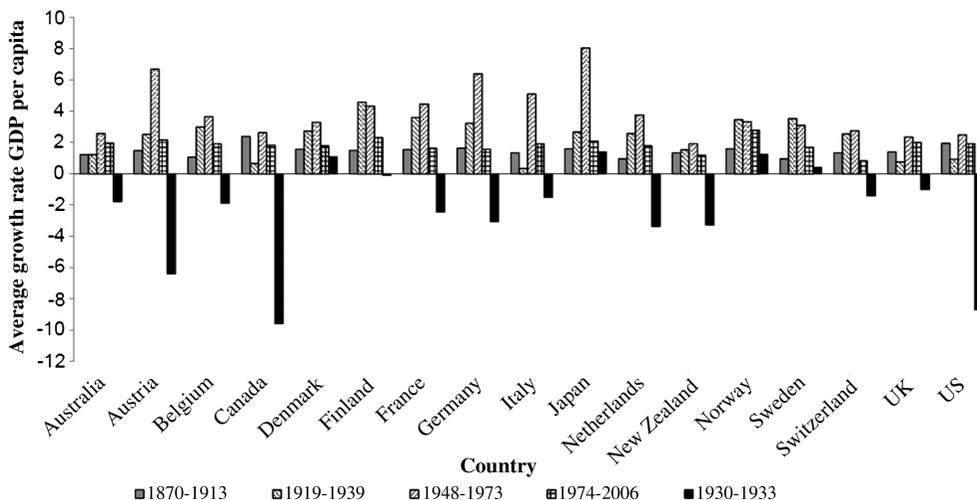
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We are grateful to our discussant, Forrest Capie, conference participants, the editors of this issue, and two anonymous referees for helpful comments. Any remaining errors are the sole responsibility of the authors.

doi: 10.1093/oxrep/grq021

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Figure 1: Average growth rates of GDP for 17 countries by period, 1870–2006

Source: Maddison (2009).

(1948–73), and the subsequent period (1974–2006). More than three-quarters of these countries experienced negative economic growth. Unemployment rates of above 20 per cent were common (Table 1). Banking and financial crises were widespread (Table 2). Trade also declined substantially (Figure 3): exports in 27 leading countries declined by over 50 per cent between 1929 and 1932 while real GDP in these countries fell some 15 per cent during those

Table 1: Unemployment in industry (%)

Country	Australia	Belgium	Canada	Denmark	France	Germany	Netherlands	Norway	Sweden	UK	US
Year											
1920	5.5		4.6	6.1		3.8	5.8	2.3	5.4	3.2	8.6
1921	10.4	9.7	8.9	19.7	5.0	2.8	9.0	17.7	26.6	17.0	19.5
1922	8.5	3.1	7.1	19.3	2.0	1.5	11.0	17.1	22.9	14.3	11.4
1923	6.2	1.0	4.9	12.7	2.0	10.2	11.2	10.7	12.5	11.7	4.1
1924	7.8	1.0	7.1	10.7	3.0	13.1	8.8	8.5	10.1	10.3	8.3
1925	7.8	1.5	7.0	14.7	3.0	6.8	8.1	13.2	11.0	11.3	5.4
1926	6.3	1.4	4.7	20.7	3.0	18.0	7.3	24.3	12.2	12.5	2.9
1927	6.2	1.8	2.9	22.5	11.0	8.8	7.5	25.4	12.0	9.7	5.4
1928	10.0	0.9	2.6	18.5	4.0	8.6	5.6	19.2	10.6	10.8	6.9
1929	10.2	1.3	4.2	15.5	1.0	13.3	2.9	15.4	10.2	10.4	5.3
1930	18.4	3.6	12.9	13.7	2.0	22.7	7.8	16.6	11.9	16.1	14.2
1931	26.5	10.9	17.4	17.9	6.5	34.3	14.8	22.3	16.8	21.3	25.2
1932	28.1	19.0	26.0	31.7	15.4	43.8	25.3	30.8	22.4	22.1	36.3
1933	24.2	16.9	26.6	28.8	14.1	36.2	26.9	33.4	23.2	19.9	37.6
1934	19.6	18.9	20.6	22.2	13.8	20.5	28.0	30.7	18.0	16.7	32.6
1935	15.6	17.8	19.1	19.7	14.5	16.2	31.7	25.3	15.0	15.5	30.2
1936	11.3	13.5	16.7	19.3	10.4	12.0	32.7	18.8	12.7	13.1	25.4
1937	7.4	11.5	12.5	21.9	7.4	6.9	26.9	20.0	10.8	10.8	21.3
1938	7.8	14.0	15.1	21.5	7.8	3.2	25.0	22.0	10.9	12.9	27.9
1939	8.8	15.9	14.1	18.4	8.1	0.9	19.9	18.3	9.2	10.5	25.2

Source: Eichengreen and Hatton (1988, pp. 6–7).

Table 2: Banking crises during the Great Depression.

Crisis countries	Austria, Belgium, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Norway, Poland, Romania, Switzerland, United States, Yugoslavia
Non-crisis countries	Bulgaria, Czechoslovakia, Denmark, Greece, Japan, Lithuania, Netherlands, Portugal, Spain, Sweden, United Kingdom

Source: Grossman (2010, pp. 314–6).

same years. Consequently, the share of exports in world GDP in 1933 was a little more than half the size of that in 1929.

Prior to the 1980s, academic research on the Great Depression concentrated disproportionately on the United States (Kindleberger (1973) is a prominent exception), focusing in particular on whether the downturn was the result of monetary forces (Friedman and Schwartz, 1963), or a decline in some component of real expenditure (e.g. Temin, 1976). Starting in the 1980s, a growing literature, including Choudhri and Kochin (1980), Eichengreen and Sachs (1985), Temin (1989), Bernanke and James (1991), Eichengreen (1992a), and James (2001), began to take a more global perspective (Bernanke, 1995; Eichengreen, 2004). And although the argument that the Great Depression originated in—and emanated from—the United States is still powerful (Romer, 1993), the importance of international factors in driving the Great Depression is better established than ever.

In this article, we focus on two aspects of the Great Depression which had important international dimensions: banking crises and international trade. We conclude with a comparison between the Great Depression and today's global downturn, which we refer to as the Great Recession, and some observations on the path of economic policy and our understanding of how the global economy is evolving.

II. Banking crises

Financial crises were a defining characteristic of the Great Depression, as they have been of the Great Recession. Of course, the term 'financial crisis' encompasses many different classes of episodes, including banking crises, currency crises, debt defaults, and securities-market crises, to name but a few (Kindleberger, 1978, pp. 21–2). We concentrate on banking, rather than currency or securities-market crises for two reasons. First, given that the international gold-standard regime collapsed during the 1930s, virtually every country that had been on the gold standard experienced some sort of currency crisis. All 17 countries catalogued by Bordo *et al.* (2001, web appendix) underwent at least one currency crisis during 1930–36. Second, although a number of stock-market crashes took place during the Great Depression, the scholarly consensus is that, with the possible exception of the October 1929 crash on Wall Street (Romer, 1990), crises in securities markets were not important in bringing it about (Kindleberger, 1973, p. 108; Eichengreen, 1992b), but were most often a consequence of the collapse of the banking and non-financial sectors of the economy.

By contrast, banking crises play a central role in many analyses of the causes of the Great Depression (e.g. Friedman and Schwartz, 1963; Temin, 1976; Bernanke, 1983). Bernanke and James (1991), for example, find that countries that experienced banking crises fared significantly worse during the Great Depression than those that did not. Table 2 classifies

26 countries—primarily European, but including Canada, Japan, and the United States—by whether or not they had banking crises during the Great Depression.

Although there is compelling evidence that banking crises played an important role in the Great Depression, there is no consensus on the channel through which the crises affected real economic activity. Friedman and Schwartz (1963) and Cagan (1965) argue that banking crises increased the public's desired currency-to-deposit ratio, as depositors strove to convert deposits into cash, which reduced the money supply and led to a decrease in prices and output. Fisher (1932, 1933), Minsky (1982), and Kindleberger (1978) view banking crises as a crucial link in the debt-deflation process: just as banks extended credit to ever more marginal borrowers during the preceding economic expansion, the subsequent downturn left these marginal borrowers unable to repay their debts, which led to a decline in prices and an increasing number of debt defaults. Bernanke (1983) emphasizes the role of banks in providing intermediation services, and argues that bank failures during the Depression raised the cost of credit intermediation and worsened the economic downturn. Eichengreen (1992a) and Temin (1993) highlight the role that banking crises played in the international spread of the Great Depression.

Financial crises have long transcended regional and national boundaries. Friedman and Schwartz (1963) describe American banking crises as spreading through a 'contagion of fear,' as the failure of weak banks led to panic withdrawals by depositors in more sound banks, causing them to fail too. Kindleberger (1978, p. 118) describes the international transmission as taking place through a variety of channels: 'psychological infection, rising and falling prices of commodities and securities, short-term capital movements, interest rates, the rise and fall of world commodity inventories.' He presents a table (p. 127) showing the total number of commercial and financial failures in different cities on a monthly basis, nicely illustrating the geographic spread of a crisis outward from London, to the rest of Britain, to British colonies, and to continental and American destinations following its initial outbreak in August 1847. The international dimension of banking crises became, if anything, more important during the subsequent crises during the decades of the 1870s, 1890s, and 1900s (Grossman, 2010).

The interwar period saw two distinct waves of banking crises, both of which were initiated by cyclical downturns. The first took place during the early 1920s and affected Belgium, Denmark, Finland, Italy, Japan, the Netherlands, Norway, and Sweden. Although international linkages did contribute to the spread of these crises, they were primarily the result of the collapse of the economic booms following the First World War (Grossman, 2010). Further, because virtually no country had yet restored the gold standard, the economic downturn of the early 1920s was relatively short-lived (Eichengreen, 1992a, p. 100).

The second wave of banking crises was initiated by a cyclical downturn that began during 1929–30. Crises were centred both in the United States, which experienced banking crises in October 1930, March 1931, and March 1933, and in Europe, where banking crises began in earnest in 1931 with the collapse in May of Austria's Credit-Anstalt. The Credit-Anstalt had been the largest bank in the Austro-Hungarian Empire, and was by far the dominant bank in Austria after the First World War: following its absorption of the failing Bodencreditanstalt in 1929, it held 70 per cent of total Austrian banking assets. The Credit-Anstalt had been over-extended for some time and the economic downturn that began in 1929–30 led to losses on the loan portfolio that exceeded the bank's capital (Eichengreen, 1992a, pp. 264ff.; Schubert, 1991).

Revelations about the precarious state of the Credit-Anstalt—it was considered 'too big to fail' and was, in fact, rescued by the government and the Austrian National Bank—led to

bank runs in Poland and Hungary, the effective suspension of the Austrian gold standard, and heightened concerns about Germany, which also had large outstanding short-term foreign debts. The failure of a large German textile company, the Norddeutsche Wollkammerei und Kammgarntspinnerei (Nordwolle), in June led to a run on, and the collapse of, the Darmstädter und Nationalbank (Danat-Bank) in July, which led to capital flight, suspension of the gold standard, and a further spread of banking crises, particularly to banks with German connections in eastern and central Europe and in the Middle East. Britain, which had run persistent balance-of-payments deficits for several years, now found itself under additional pressure, as the suspensions in Germany and Austria and the freezing of British credit on the Continent, called the British gold standard into question. The mounting pressure on the pound forced Britain to leave the gold standard in September 1931 (Eichengreen and Jeanne, 2000), which led to further banking crises.

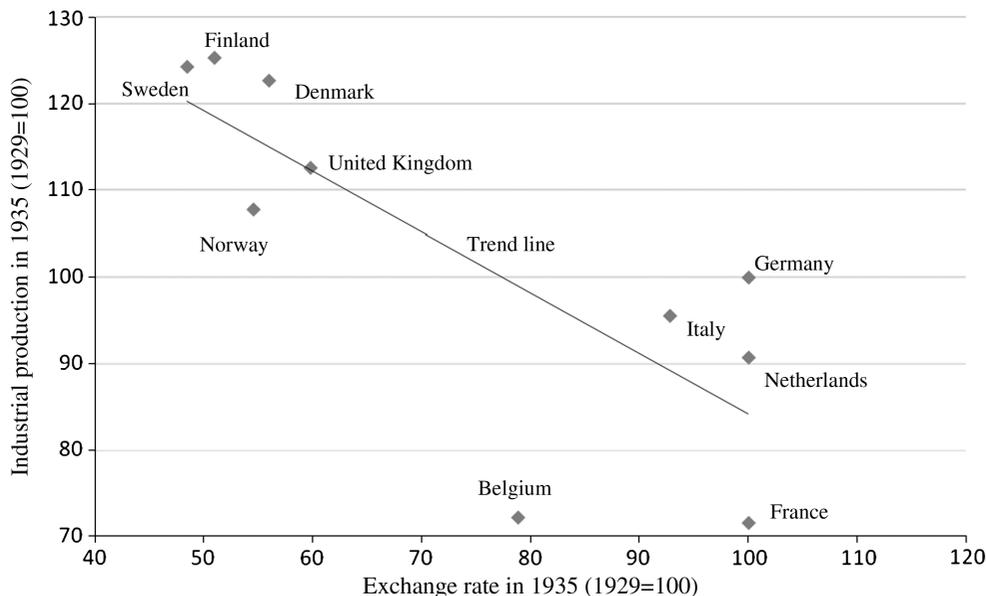
The banking crises of the interwar period—not to mention those of the more recent sub-prime crisis—were very much in the mould of the ‘boom–bust’ crises described by Fisher (1932, 1933), Minsky (1982), and Kindleberger (1978): rapid economic expansion, accompanied by increasing indebtedness, resulting in heightened financial fragility which leads to crises when the economic boom collapses. The collapse of the investment boom after the First World War in Europe and the end of the Roaring Twenties investment boom in the United States, as well as the collapse of the sub-prime mortgage boom more recently each led to banking crises.

We can assess a variety of factors which might have enabled—or prevented—banking crises during the Great Depression by comparing the experiences of countries that had crises with those that did not (Table 2). These include the extent of branching, bank size, banking concentration, the amplitude of the macroeconomic cycle, and regulatory differences (Grossman, 1994).

Banking systems where banks were, on average, more extensively branched typically survived the Depression better than those which were characterized by unbranched (i.e. unit) banks. Extensively branched banks should be less likely to fail than unit banks for three reasons. First, banks with an extensive branch system are likely to have a more diversified loan portfolio than unit banks, which make loans in one area only. Second, branched banks may have a more diversified deposit base and therefore may be less likely to fail owing to purely local deposit runs. Finally, a branch system provides seasonal diversification, easing the stringency in money centres caused by the flow of funds to agricultural areas at harvest time.

Banking systems characterized by larger banks were also less prone to crises than those characterized by smaller banks. Large banks might be less likely to fail than smaller institutions because they are better able to diversify their loan and investment portfolios and thereby reduce the risk from any one non-performing component. Additionally, if leading non-financial firms require larger loans—which small banks do not have the resources to provide—and are less likely to default than small firms, the banks that make these loans may incur smaller loan losses. Finally, banks with substantial resources may be in a better position to acquire banks that are on the verge of failure and thus help to stabilize the system.

Banking systems characterized by a high degree of concentration were also more stable than those that were not. High concentration might increase stability if it reflects the existence of barriers to entry, suggesting that more concentrated banks will be more profitable and, hence, better able to stave off failure during a period of crisis. Further, the existence of a small number of banks suggests that cooperation, such as pooling reserves in times of crisis, will be more feasible. Although formal banking regulation did not account for important differences in financial stability during the Great Depression, having a smaller number of

Figure 2: Exchange rates and industrial production, 1935

Notes: Reconstructed from Eichengreen and Sachs (1985, p. 936).

Data sources: Exchange rates: League of Nations (1938, pp. 108–9). Industrial production: Mitchell (1978).

institutions may have made it easier for government, central bank, and other authorities to exert informal supervision over the banking system. Because bank branching, size, and concentration are typically highly correlated, it is difficult to determine which of these attributes was most responsible for banking stability.

Banking systems which had been purged of many of their weak banks by a crisis earlier in the interwar period also typically survived the Great Depression better than those that had not been so ravaged. For example, the banking systems of both the Netherlands and Sweden suffered crises after the First World War, but were relatively stable during the 1930s, perhaps because many of the weaker banks had already exited.

Finally, the economies and banking systems of countries which abandoned the gold standard promptly typically fared better than those of countries that clung to it. Decoupling from gold was liberating for countries that did so, permitting them to undertake more expansionary monetary policy. The benefits of early devaluation are illustrated in Figure 2, which replicates a figure presented by Eichengreen and Sachs (1985, p. 936). The horizontal axis presents an index of exchange rate value in 1935 relative to its 1929 level. France did not devalue the franc until 1936, so its value in 1935 was equal to that in 1929; by contrast, the currencies of the Scandinavian countries and Britain had fallen by 40 per cent or more from 1929 values. The vertical axis presents an index of industrial production constructed in a similar manner. The industrial production indices in Finland, Sweden, and Denmark in 1935 were more than 120 per cent of their 1929 levels; those of France and Belgium were just over 70 per cent of their 1929 values. The pattern, illustrated by the trend line, is clear: countries that experienced more substantial depreciations exhibited greater industrial recovery (Belgium is an

outlier because it devalued during 1935 and the positive effects of currency depreciation on industrial production were not felt until later). Greater depreciation was also associated with increased export volume, greater incentive to invest (Eichengreen and Sachs, 1985), and a reduced likelihood of enduring a banking crisis (Grossman, 1994).

Banking crises contributed crucially to the length, depth, and spread of the Great Depression. The historical record suggests that banking systems characterized by more extensively branched, larger, and more concentrated firms fared better than those that were not. The record also suggests that ‘history mattered’: banking systems that had undergone crises during the collapse of the macroeconomic booms of the early 1920s often shed their weakest members and emerged more resilient in the face of the economic downturn of the Great Depression. Finally, the experience highlights the important role played by the gold standard in propagating the banking crises of the Great Depression.

III. Trade

(i) How big was the trade collapse?

Between mid-1929 and mid-1932 the world witnessed an unprecedented peacetime decline in international trade. Total exports in a sample of 27 leading countries whose data underlie Figure 3 fell from 9 per cent of GDP in 1929 to 5 per cent in 1932.¹ Total real exports of these nations fell by just over 50 per cent and GDP fell by 15 per cent on average between the peak in 1929 and the trough of 1932. These declines are comparable to those suffered during the recent trade collapse of 2008–9. In the first year of both crashes, trade fell by roughly 20 per cent.² In the recent trade bust and during the first year of the Great Depression the average GDP decline was 4 per cent. Both trade busts also seem to have been highly synchronous across nations. Between 1929 and 1930, 85 per cent of these 27 nations had negative trade growth which is the same proportion reported by Baldwin (2009) for 2008–9.

During the 1930s the trade collapse continued for another 2 years, whereas it appears that today, after only 1 year, world trade is rebounding strongly. Whatever barriers put the brakes on trade seem to have dissipated rapidly, allowing for a quick rebound. During the Depression a sequence of income declines, and tariff and competitive exchange-rate devaluations seem to have dragged trade down in successive rounds. This is famously depicted in the contracting spiral of trade figure—one of the most reproduced figures in all of economics according to Eichengreen and Irwin (1995)—originally published in 1933 in Austria and then by the League of Nations *Economic Survey*. We return to a comparison between the two episodes below.

¹ These countries are those used in the sample of Jacks *et al.* (2009a) and cover roughly 70 per cent of global GDP. They include: Argentina, Australia, Austria, Belgium, Brazil, Canada, Denmark, France, Germany, Greece, India, Indonesia, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, the Philippines, Portugal, Spain, Sri Lanka, Sweden, Switzerland, the United Kingdom, the United States, and Uruguay.

² See, for instance, Eichengreen and O’Rourke (2010). Their values for the ‘volume of world trade’ during the 1930s from the League of Nations imply only about a 13 per cent drop in the year after the peak in world trade. The difference between our 20 per cent decline and theirs could be due to the samples or method of deflation. League of Nations statistics do not report the method of deflation. Figure 3 uses the US consumer price index (CPI) to deflate the dollar value of trade.

A number of studies have highlighted the extent of disintegration of world trade during the Depression. That is, the amount by which trade declined beyond that warranted by autonomous income declines, say, owing to increased barriers to trade. Assume as a benchmark that both imports and domestic sales depend on local incomes with a unit income elasticity. When international trade declines by more than consumption of domestic tradables, it implies that there has been an increase in barriers to international transactions. If this were not the case, domestic sales would decline one-for-one with goods shipped across borders. In this case, although trade has collapsed, integration *per se* between markets is left unaltered, if by integration we have in mind a measure of the barriers to international relative to domestic trade.

The above logic follows closely nearly all conventional international trade literature that relies on the 'gravity' model to explain bilateral trade flows (more on this below). Jacks *et al.* (2009a) show that most trade models and their gravity equations give rise to a unique metric that implicitly measures all barriers to international trade in tariff-equivalent terms. Essentially the gravity model tells us how far actual bilateral trade is from where the model predicts it would be in the absence of all international barriers to trade. By this measure, trade barriers rose, on average, by 25 per cent during 1929–33. In other words, after controlling for income losses, it was as if worldwide tariffs had uniformly risen by 25 per cent. Nevertheless, there was some variance in outcomes. In the US between 1929 and 1933, exports declined by almost 60 per cent, while GDP fell by roughly 30 per cent: a rise in the tariff-equivalent measure of trade costs of 26 per cent. France and Germany saw declines in exports of 50 per cent with falls in GDP of 15 per cent: a tariff-equivalent rise in trade costs of just under 20 per cent.

Hynes *et al.* (2009) take a different approach, employing price data from selected commodities to assess the extent of the disintegration of international markets. Price gaps (i.e., the difference between the price in the exporting country and the price in the importing country, presumably reflecting barriers to trade) on agricultural commodities stood 160 per cent higher in 1933 than in the comparatively 'normal' year of 1913 (Hynes *et al.*, 2009). These rises imply an average 70 per cent increase in the costs of international trade in commodities. The UK and its trading partners within the British Empire saw rises of 62 per cent. UK and non-empire pairs posted rises of 135 per cent. Non-empire country pairs witnessed rises of 200 per cent. The Depression put a large wedge between the prices paid for imports and the prices exporters received.

A slightly earlier literature focused on measuring the change in tariffs as a proxy for changes in trade costs. Smoot–Hawley doubled tariff rates on a range of US imports. Irwin (1998) calculates that in 1922 the average *ad valorem* tariff was 34.61 per cent, while after Smoot–Hawley in 1930 it was 42.28 per cent. This translates into a rise in the *ad valorem* equivalent of tariff rates of about 20 per cent, or a rise in the relative price of imports of 4–6 per cent (i.e. $\frac{1+t_1}{1+t_0}$). Since many tariffs were specific, meaning that they were expressed in terms of monetary units per physical unit, the rise in tariffs reflected the global deflation that began in 1929 and involved more than just active legislation to raise the *ad valorem* tariff. Owing to these effects in the US, the *ad valorem* equivalent average tariff (tariff revenue divided by dutiable imports) rose from about 40 per cent to about 60 per cent. Crucini and Kahn (1996) found *ad valorem* tariff equivalents nearly tripled, from 8 to 22 per cent in other countries. Madsen (2001) reported a doubling of tariff revenues relative to total imports between 1929 and 1932 in a slightly larger sample of countries.

(ii) What caused the trade decline?

How should we understand the decline in world international trade? According to conventional modern trade theories, in general equilibrium the two main factors driving international bilateral trade are terms related to output/income levels of both trade partners and the barriers to foreign trade.³ Barriers to foreign trade, often referred to as ‘trade costs’, consist of all the costs that make foreign goods relatively more expensive than domestic goods. They include, but are not limited to, tariffs, international shipping and insurance costs, exchange-rate volatility, and the availability of trade credit (Anderson and van Wincoop, 2004). Can the world trade collapse be understood simply as a by-product of declines in output/incomes? Or was it the result of restrictive trade policies and other shocks to the barriers of trade? If the latter, these policy shocks could have acted as key drivers of the global depression. Yet another possibility is that a vicious cycle was at work, with causality running from income to trade, trade to trade barriers, trade barriers to trade, and trade back again to income. We explore the record on trade, incomes, and trade barriers next.

From the mid-1920s through to 1929, exports grew by about 50 per cent while production increased by roughly 25 per cent (Figure 3). Although some nations dismantled quantitative controls imposed during the war period, tariffs remained high compared to levels in 1913 (Findlay and O’Rourke, 2007). However, exchange-rate volatility decreased with the re-establishment of the gold standard, thereby reducing uncertainty for agents involved in cross-border transactions. The League of Nations (1931) cites an increased demand for industrial products and a reorganization of industry in Europe as providing further stimulus to cross-border trade.

The trade boom had stalled by early 1929. The initial cause is likely to have been the tightening of US monetary policy. The rise in US interest rates led to sharper rises in interest rates in deficit nations as they attempted to retain capital to finance their current account deficits. Tightening abroad led to reduced demand for American imports and, indeed, US exports began to decline from 1928. This suggests that the primary impulse for the decline in world trade was a real interest-rate shock, which lowered worldwide demand (Eichengreen, 1992a).

The next insult to international trade came with the enactment of the Smoot–Hawley tariff by the United States during the summer of 1930. The impulse for the US tariff rise was mainly political, reflecting a massive logrolling coalition covering a large spectrum of domestic producers. It is incorrect to view Smoot–Hawley as a response to the global downturn. The idea of tariff revision was sponsored as early as 1928 by the Republican candidate Herbert Hoover during the presidential campaign (Irwin and Kroszner, 1996).

Countries reacted to this dramatic rise in tariffs *and* the incipient depression with their own protectionist measures. Germany, Italy, and France pre-emptively raised tariffs on agricultural goods prior to final approval of Smoot–Hawley in 1930. During 1931 roughly 61 nations

³ It is not difficult to show that if a gravity model of trade governs bilateral international trade and domestic trade as well, then these are the two factors that matter. Models that give rise to such a gravity equation include monopolistic competition with complete specialization over a range of goods by country, with or without increasing returns, and consumers with homothetic preferences and a love of variety; the Ricardian model of trade studied by Eaton and Kortum (2002), and models with heterogeneous firms and/or fixed costs to foreign market entry (e.g. Chaney, 2008). Deardorff (1998) argues that in a Heckscher–Ohlin world with trade costs a similar model also holds.

raised tariffs or imposed barriers in response to US policy (Jones, 1934).⁴ Although Great Britain had been the world's cheerleader for free trade since the 1840s, it soon responded with tariff hikes of its own. Because of its free-trade heritage, internal political debate on the issue was intense in 1931, but free trade ultimately lost.

Jones (1934) argues that failure of the First and Second International Conferences for Coordinated Economic Action in 1930–31 meant that international cooperation could not stop the avalanche of protectionism. Britain's general election of 1931 resulted in a National Government that acted on the public's desire to stem the increasing trade deficit and to stabilize sterling. The Tariff Act of 1931 and the Import Duties Act of 1932 meant the loss of a major market for many important countries, although members of the British Empire were exempted by the Ottawa Agreements, which were concluded in the summer of 1932. In France, a quota system was implemented between 1930 and early 1931. Madsen (2001) reports that there were 50 such quotas in existence in 1931 and 1,100 by 1932. In Spain, the Wais tariff raised duties on US automobiles. Italy imposed duties on US autos and other goods as well. Canada responded fiercely to Smoot–Hawley by establishing retaliatory duties on agricultural items and enlarged British preference. There is no doubt that the rampant rise in protectionist measures between 1930 and 1933 dealt a major blow to world trade up to 1933.

Retaliation against Smoot–Hawley was costly. If countries discriminated against US goods, an extra duty was to be levied on their exports to the US. Many countries raised tariffs across the board in response. Moreover, 'most favoured nation' clauses extending preference to US goods were not reciprocated, which led to the quick decline of such treaties. With the enactment of the Reciprocal Trade Agreements Act in 1934, the US tariff system began to make exceptions to high tariffs on a country-by-country basis and so invited a more positive worldwide response generating a revival of trade.

What else besides retaliation to US tariffs drove countries to raise tariffs in the 1930s? Foreman-Peck *et al.* (2000) argue that countries raising tariffs did so with three objectives in mind: to raise production levels to those of 1929; to increase prices to 1929 levels; and to restore trade balance. Since the exchange rate and monetary policy mattered for these outcomes, tariff policy seems to be related more fundamentally to monetary and exchange-rate policies. Countries clinging to gold while others devalued gave themselves an overvalued exchange rate, thus widening their trade deficits. And, in fact, nations with stronger exchange rates seem to have imposed larger increases in their tariffs, *ceteris paribus* (Eichengreen and Irwin, 2010). France, which did not devalue until 1936, underwent a doubling of tariffs (as measured by tariff revenue divided by imports) between 1928 and 1938. The Netherlands, Belgium, and Switzerland posted similar increases and also devalued very late in the Depression. Meanwhile, countries that did devalue, such as Sweden, Denmark, and Canada, saw only slight rises or even declines in tariffs. In the exchange-control countries, tariff changes fell between these two extremes. Nonetheless, Figure 2 in Eichengreen and Irwin (2010) reveals that Britain (early devaluation), Germany (leading exchange-control country), and France (gold-bloc stalwart) had the highest unconditional rises in tariffs. It would appear that other factors also mattered.

Despite the focus on trade policy in the literature, other forms of trade barriers also arose. The surge in the barriers highlighted in the studies cited above also seems to be attributable

⁴ Eichengreen and Irwin (2010) argue that Smoot–Hawley itself had a relatively minor direct impact on Europe and on the domestic economy. Instead, they view the policy as setting a tone for further tariff escalation in Europe. They also cite the financial crisis of 1931 in Europe and its economic impact as a principal cause of further tariff rises.

to non-tariff barriers, greater exchange-rate volatility, rises in foreign shipping costs relative to domestic shipping, and a lack of international trade credit. The demise of the international gold standard raised exchange-rate volatility and increased uncertainty in international transactions, while the relative costs of shipping goods on ocean-going tramp shipping lines rose considerably from the mid-1920s (Estevadeordal *et al.*, 2003). Opinions differ on the importance of the latter since the real freight-rate series presented in Shah Mohammed and Williamson (2004) do not show rises until the 1930s. Different samples, compositional issues, and methods of deflating probably explain these factors. Hynes *et al.* (2009) provide some preliminary evidence that trade credit dried up also contributing to more limited international trade.

(iii) Accounting for the trade decline: trade costs versus incomes

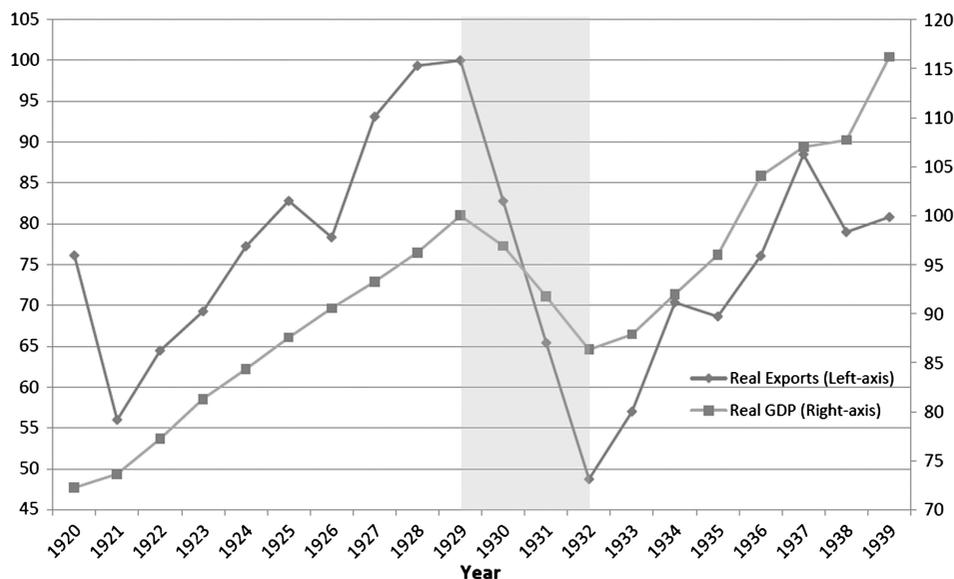
Many would identify the sharp decline in international trade between 1929 and 1933 with the US tariff hike of 1930 and the alleged retaliation by other nations. Most recent research, however, shows that income declines and trade barriers can explain the decline in trade. The answer to the question of which mattered more appears to depend on the particular sample previous studies have worked with and their particular methodology. What do we know?

Three main methodologies have been used to account for the trade collapse between 1929 and 1933. Irwin (1998) and Madsen (2001) estimate aggregate import and export demand equations. Imports are a function of domestic income and relative prices, and exports are a function of foreign income and relative prices. Relative prices are affected by supply and demand conditions, tariffs, exchange-rate movements, and other trade costs. Crucini and Kahn (1996) study a computable general equilibrium model and run simulated counterfactuals using their model. An accounting exercise, similar in spirit to Baier and Bergstrand (2001) and based on the gravity model of bilateral trade is employed by Jacks *et al.* (2009a).

Madsen (2001) estimates reduced form regression equations for aggregate exports and imports. Within his sample, which covers 17 countries between 1920 and 1938, trade barriers account for 41 per cent of the drop in trade between 1929 and 1932, while income declines account for about 59 per cent (Figure 3, p. 865). Madsen argues tariffs could have led to declines in incomes of up to 2 per cent. If so, the role of tariffs is slightly higher. Also, Madsen argues that tariff policy reduced demand during the Depression along inelastic supply curves. This led to deflation in the tradable sector, which further raised the real rate of tariff protection since many tariffs were specific and not *ad valorem*. In this case, Madsen suggests that the impact of tariffs was as important as the output decline in explaining the trade collapse. Irwin (1998) uses a similar partial equilibrium methodology for the United States between 1929 and 1932 where higher tariffs contributed to about one-fifth of the 40 per cent fall in imports. The majority of the fifth was due to higher specific duties arising from deflation and not new legislation in the infamous Smoot–Hawley tariff bill.

Crucini and Kahn (1996) calibrate a general equilibrium model to study the relation between tariffs, imports, and GDP. Their model assumes that foreign goods are used as inputs to production. In this case, Crucini and Khan find that in the US tariffs account for about one-fifth to two-fifths of the decline in imports.

Jacks *et al.* (2009a) calculate the relative role of trade frictions and output declines using a gravity model of trade and reach a different conclusion. This gravity model represents equilibrium bilateral trade levels in a general equilibrium model of production and trade. Consumers typically are assumed to have homothetic preferences (although this is not a ne-

Figure 3: Exports and GDP for 27 countries, 1920–39

Notes: Total exports and GDP in real 1990 US dollars. The countries included are: Argentina, Australia, Austria, Belgium, Brazil, Canada, Denmark, France, Germany, Greece, India, Indonesia, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, the Philippines, Portugal, Spain, Sri Lanka, Sweden, Switzerland, the United Kingdom, the United States, and Uruguay.

Sources: Data for GDP are from Maddison (2003). Exports data come from various sources cited in Jacks *et al.* (2009a).

cessary condition) and almost any plausible production structure can be used. This approach yields the following equilibrium equation for bilateral trade

$$x_{ijt}x_{jit} = x_{iit}x_{jjt}(1 + \tau_{ijt})^{(1-\sigma)^5}$$

This shows that bilateral trade (the product of exports (x) from country i to j and j to i) depends on the following two factors: the product of domestic absorption (x_{iit} or $GDP-Exports$) and a term for trade frictions that encompasses tariffs and non-tariff barriers, real international shipping costs, exchange-rate volatility, etc. In this equation τ_{ijt} is the tariff equivalent of the costs of international trade relative to domestic trade for both countries i and j , and σ is the time-invariant and constant-across-all-countries elasticity of substitution between any two goods, domestic or foreign.

The gravity model suggests a unit elasticity on domestic absorption and point estimates of this elasticity by Jacks *et al.* (2009a) are near unity. In the sample of 27 countries and 130

⁵ The steps to derive gravity are straightforward, as Anderson and van Wincoop (2003) show. Demand for exports from country i to j depend on incomes in j and the prices of i 's goods relative to a CPI. Using market clearing, it is obvious that world sales for country i (i.e. total income) equal total exports—including domestic sales. Use this equation to solve for the domestic price for i , substitute back into the demand equation and note that bilateral exports are a positive function of income in i and j (relative to world income), price indices for each country (i.e. multilateral resistance terms), and a negative function of trade costs. To arrive at the above equation, which has eliminated the price index terms using the domestic gravity equation, see (Jacks *et al.* 2009a).

unique country pairs mentioned above, the authors find that *at the average* declines in incomes account for 15 per cent of the fall in trade, and trade costs account for 93 per cent of the fall. Multilateral forces (i.e. a term that accounts for third-market effects—in essence a ‘price deflator’ for bilateral effects) acted to keep trade buoyant and trade would have been 0.133 log points lower had this factor not risen between 1929 and 1933.⁶ This could happen if tariffs or demand management policies had sufficiently stimulative effects and hence positive spillovers. To the extent that income and trade costs are related, there can be biases in the accounting procedure. Madsen (2001) argued that trade costs might have had a negative impact on incomes so that the share of trade costs would be understated. If, however, declining incomes led to higher tariffs and other trade barriers, and some evidence shows this to be the case, the role of trade costs may be overstated.

(iv) The global trade slump and the global depression: symptom, cause, or vicious circle?

Recent empirical contributions to the literature on the synchronization of business cycles suggest that a doubling of trade intensity would raise the bilateral correlation in output movements by roughly 0.06, relative to an average correlation of roughly 0.3 (Frankel and Rose, 1998). Greater trade integration in the 1930s would be expected to raise countries’ exposure to the large economic shocks from abroad. Indeed, the French depression is often characterized as emanating in part from a major loss of export markets. And Eichengreen and Sachs (1985) detected that the devaluations of the early 1930s were partially ‘beggarthy-neighbour’ policies.

One simple dynamic story that also fits the facts is that the rise in real interest rates in 1928–9 in the US led to a slowdown in capital exports from the US and a decline in US exports (Eichengreen, 1992a, pp. 227–8). As capital flows ceased, commodity exporters liquidated stocks in an attempt to avoid debt default, then devalued in order to do the same. Their incomes plummeted as supply rode down an inelastic demand curve. Next, US tariffs, imposed more for political than economic reasons, compounded the shock to incomes by reducing exports further. Devaluations beginning in 1931 with sterling’s departure from gold also inspired tariff retaliation and more loss of foreign demand. This decline in demand and expected future reduced demand for domestic tradables led to even larger drops in output owing to the loss of foreign markets and the exit of producers. In this story a vicious circle (i.e. a trade multiplier) is the main culprit in the sad story of the interwar trade bust and a contributor to the Great Depression.

Some back-of-the-envelope calculations suggest the potential for explaining the income losses owing to trade declines. In the US, where exports fell by 60 per cent between 1929 and 1933, even a high trade multiplier of 3 would have decreased overall income only by 9 per cent. The overall fall in income was 30 per cent. The US had a comparatively small export share, near to 5 per cent in 1929, but in other small open economies the trade

⁶ Note that the product of the domestic absorptions (GDP minus exports), the theoretically preferred measures of size, is equal to $y_{ii}y_{jj} \left(\frac{x_{ii}x_{jj}}{y_{ii}y_{jj}} \right)$. This product fell on average by only 0.09 log points while the product of bilateral trade fell on average by 1.41 log points. The remainder of the log point fall (93 per cent) then has to be attributable to rises in trade costs, assuming that these barriers are not related to incomes and absorption and that the elasticity of substitution is constant.

collapse might have played a larger role. In Canada, for instance, the export share of income was 17 per cent. An export multiplier of three and the fall in exports of 45 per cent could have led to a 25 per cent fall in GDP compared to a 30 per cent actual decline.

Several contributions add to our understanding of the microeconomic links between trade and the Depression. Crucini and Kahn (1996) and Irwin (1998) propose general equilibrium models of trade in crucial intermediate goods for US final production. When the US raised tariffs on intermediate goods, which are crucial to the production process, the marginal productivity of the factors of production fell and incomes declined. Both Irwin and Crucini and Khan suggest that the output losses from rising tariffs were very small relative to the 30 per cent drop in overall GDP, with a maximal effect of -2 per cent. Perri and Quadrini (2002) examine Italy—a small open economy where output effects are likely to be larger—using a dynamic general equilibrium model. Their key assumption is also that imports were important complements to domestically produced factors of production. Unlike the model presented by Irwin, where labour and capital are fully employed, Perri and Quadrini's model allows for changes in utilization of such inputs. With higher tariffs, Italy's exports became relatively more expensive, reducing demand abroad and ultimately shifting resources into the non-tradable sector or forcing lower employment of capital and labour partially due to sticky nominal wages. Tariffs and sticky wages in their model explain roughly half to three-quarters of the downturn in Italy in the 1930s. In the Irwin model for the US, wage rigidity does not raise the contribution of tariffs and trade losses to income losses since sectoral reallocation is so small and since the model does not allow for unemployment of resources.

More broadly, other authors have suggested important interactions between trade policy, monetary forces, and international capital markets. Eichengreen (1989) argues that tariffs might have been beneficial to the extent that they were domestically deflationary. In this argument, tariffs helped avoid a rise in real wages owing to sticky nominal wages and limited real increases in the value of debt. This result holds even after taking into account retaliation although there are some offsetting effects that render the net effect unclear.

Devaluations, long derided as 'competitive devaluations', were another means to protectionism and recovery, but they too had a variety of side effects. First and most obviously they led to expenditure switching and thus had a beggar-thy-neighbour effect (Eichengreen and Sachs, 1985). Second, the impact of associated monetary loosening might have been to stimulate the economy. A positive spillover via lower international interest rates could have helped boost output abroad, too. The positive effect of devaluation and monetary expansion would have been the largest when all nations undertook such expansion simultaneously. The evidence from the academic literature to date suggests that devaluations stimulated production and exports (Eichengreen and Sachs, 1985; Campa, 1990).

One factor limiting the benefits of devaluation might have been foreign debt. Devaluations can be contractionary when debt is denominated in foreign currency or a fixed amount of gold—as indeed it was in the 1920s and 1930s (League of Nations, 1931, p. 219). Whether devaluations are expansionary or contractionary in the presence of hard-currency-indexed debt depends theoretically on several factors such as the openness to trade, the level of capital-market imperfections, and overall indebtedness (Céspedes *et al.*, 2004). Of course, default was an option that was often taken, but the output effects of such actions are unclear. To date, no study we are aware of has examined this important issue so this remains fertile ground for further research.

Overall, the collapse of global trade seems to have been as much a symptom as an important cause in the global Great Depression. The precise impact on incomes of falling trade

seems to be sensitive to how trade patterns are modelled and how important trade was for a particular country. In the US, a large, relatively closed economy, the bulk of the evidence suggests that falling income and tariffs pushed trade down in equal proportions and that trade's impact on income was small. In smaller open economies it appears that trade barriers might have played a bigger role than incomes in bringing trade down, and falling trade may have played a more important role in the collapse of incomes than in the US.

IV. Lessons from the Great Depression

(i) Banking crisis and monetary policy

The banking crises of the Great Depression, like many of their predecessors, originated with a boom–bust macroeconomic cycle. This was particularly true in the United States, where the Roaring Twenties was followed by the Great Depression. As the bust took hold, a contagion of fear led to large-scale short-term capital movements and currency and banking crises in many countries.

American macroeconomic policy-makers during the early 2000s again bear substantial responsibility for encouraging—through loose monetary, fiscal, and regulatory policies—the housing boom, excessive leverage, and, ultimately, the collapse of the sub-prime bubble. Troubles were further compounded by poor regulation of risk management procedures, which created the potential for contagion and financial panic within the ‘shadow’ banking system and also a regulatory system that allowed institutions to grow ‘too big to fail’ that ended in crisis (it should be added that the modern crisis has not spared banking systems composed of large, extensively branched, or highly concentrated banks). The proliferation of new, and largely unregulated, financial derivatives allowed financial institutions all over the world to take part in the boom—and the bust. The modern episode serves as a reminder of the importance of macroeconomic policy and macro-prudential regulation of systemic actors when market failures are part of the landscape.

Responding to crisis during the Great Depression was difficult because of the absence of institutions with an explicit mandate to maintain financial stability. Regulation and supervision, where it existed, was not especially effective. Deposit insurance systems did not exist. And lenders of last resort were too timid to halt crises at home and were wary of contributing to efforts to head them off abroad. Inadequate regulation and supervision bear a large part of the blame for the financial crises associated with the Great Recession, much as they did during the Great Depression. Improving the regulatory and supervisory framework will be a major challenge for politicians in the months and years ahead.

On the other hand, some lessons of the Great Depression *have* been learned: policy-makers' responses to the recent crisis have been far more effective and forthcoming than those of their predecessors. Extraordinary actions by governments and central banks once the panic started have clearly helped to avoid the total meltdown that occurred during the Great Depression. Principal among these actions were concerted coordination and cooperation among monetary authorities in Japan, Europe, and the US, expansionary monetary policy via orthodox and not-so-orthodox policies, and fiscal stimulus policies.

The structural reforms that followed the Great Depression consisted of a set of severe constraints on banks and other financial institutions—a sort of financial ‘lockdown’ (Grossman, 2010). This heavily regulated environment was extremely successful at prevent-

ing a recurrence of Depression-style financial crises. For more than 25 years following the end of the Second World War, the industrialized world's financial system was completely crisis-free! Of course, the financial lockdown was not costless: financial system development was retarded during its duration. The lockdown was eased during the wave of deregulation that began during the late 1960s and early 1970s. Perhaps not surprisingly, this easing was followed by the re-emergence of financial crises during the 1970s and 1980s.

It is tempting to suggest that a return to a highly constrained financial system would be a fitting response to the Great Recession. And although some tightening of regulations (e.g. on new financial products and on proprietary trading, as well as more stringent capital requirements) is clearly in order, given the modern consensus that liberalized financial markets are desirable (James, 2001, p. 208), a return to financial lockdown is unlikely. Further, the globalization in financial markets and improvements in communications technology of the late twentieth century means that a lockdown could not be implemented without a coordinated international effort, which is demonstrably not forthcoming at the moment, or a complete shutdown of cross-border financial flows, which also seems to be a non-starter. Nonetheless, the crises of the Great Depression and the Great Recession suggest that something more constrained than the lax regulatory structures of the 1920s and the 2000s is warranted.

(ii) Lessons from two trade busts

Loss of demand via trade linkages was a key factor in the internationalization of the Great Depression for many countries. The global economy today is also characterized by extensive global trade linkages. And, indeed, a trade collapse has accompanied the recent financial crisis and global recession. The reported fall in real exports in both busts in the first year of the downturn was of the order of 20 per cent. Global output fell on average 4 per cent in both periods. Today's trade bust stands out from other recent recessions in that the trade collapse has been highly synchronized (Yi, 2009; Baldwin, 2009). Similarly, in the first year of the Depression, 85 per cent of countries, just like today, had negative export growth. There are many superficial commonalities between the two trade busts.

The difference between then and now appears to be that trade has already started to rebound, while it continued to spiral downwards for another 2 years during the Great Depression. In the 1930s, nations' incomes fell and trade multipliers magnified the impact. Tit-for-tat commercial and exchange-rate policy was not totally synchronized and led to a succession of beggar-thy-neighbour policies with highly negative outcomes.

The fact that trade dropped equally as quickly and evenly across nations in both busts does not mean that similar factors are to blame. Today, it seems plausible that uncertainty and changes to the structure of trade are responsible for the decline. In the Depression, income declines, tariffs, and other trade barriers mattered most, as our review of the literature has highlighted.

A rapidly expanding literature analysing the recent trade collapse supports our conjecture regarding the recent collapse.⁷ Some evidence exists that world trade has become more sen-

⁷ Chor and Manova (2010) study trade credit. Alessandria *et al.* (2010) study the interaction between the credit crunch and inventories in US automobile imports. Levchenko *et al.* (2009) focus on compositional issues and to a lesser extent vertical specialization. Jacks *et al.* (2009b) found evidence that trade fell faster relative to incomes when vertical specialization was more important. Eaton *et al.* (2010) allow for composition, demand shocks, and trade costs. They also find a role for the composition of trade, arguing that the drop in demand for durables was much larger and these are heavily traded. For a range of views see the chapters in Baldwin (2009).

sitive over time to output movements (Freund, 2009). One reason is that a substantial share of trade among the largest economies consists of consumer durables and investment goods which are more volatile than total output (Engle and Wang, 2008). In moments of uncertainty, consumers and producers put such purchases on hold. International trade may therefore suffer disproportionately during recessions. Exporters of these goods, such as Germany and Japan, have seen some of the sharpest falls in exports, which appears consistent with this observation. Today the share of such manufactures in world trade is close to 65 per cent, whereas in 1929 it was roughly 35 per cent. If both trade collapses were due in part to a rise in uncertainty, then these statistics might imply the shock to confidence was greater in 1929. Indeed, manufacturing trade seems to have fallen much more steeply than food and raw material trade in the Depression or today (Saint-Etienne, 1984). Still, the consensus on the Depression is that trade barriers mattered more than uncertainty.

The profound structural changes that have taken place in the last two decades in the international supply chain are also suspected to be a key difference. International production sharing or *vertical specialization* makes trade increasingly sensitive to changes in the costs of international trade (Yi, 2003). Intuitively, the more times a good crosses a border on its way to becoming a final good, the more border costs each good faces. Today, a small rise in all international trade costs could make such trade more costly and cut off a large number of cross-border transactions. These costs are broadly defined and include transportation costs, commercial policy variables, insurance costs, financing costs, and a range of other frictions. Incipient protectionism highlighted by the Global Trade Alert and the drying up of trade credit (Chor and Manova, 2010) associated with the financial meltdown could have triggered a magnified fall in trade even if they imply seemingly small rises in the relative costs of trade. The latter explanation is appealing, since once trade credit conditions went back to normal, trade would be expected to snap back sharply as it seems to have done. The fact that trade is on a global rebound, too, makes the production-sharing story even more attractive.

The production-sharing hypothesis also suggests a reason for the sharp and coordinated downturn and for an enhanced transmission of shocks. While there is evidence that trade enhances the co-movement of output and income shocks in both periods, today's move to vertical specialization might be able to explain the greater synchronicity in the world trade shock (Di Giovanni and Levchenko, 2010). Surprisingly, a 'decoupling' argument made recently in the academic literature holds that nations' business cycles are increasingly less synchronized. Domestic demand from within large economies or regional demand (Eurozone, East Asia) is more important than broader linkages between emerging markets and industrialized nations (Kose *et al.*, 2008). The global recession and trade decline of 2008–9 would seem to provide evidence to the contrary. Evidence from the interwar period suggests that trade mattered in the Depression for output co-movement (Foreman-Peck *et al.*, 2000; Mathy and Meissner, 2010), but the channel is likely to be quite different from that today.

Is it impossible to insulate an economy from international forces? Although trade is still a major force for transmitting shocks, monetary policy in many countries is not as tightly bound to other nations as it was in 1929 and 1930, when the gold standard was still in operation, although the European Monetary Union (EMU) is a notable exception. The evidence on whether monetary policy and fixed exchange rates heighten co-movement today is mixed, in any case, in the recent period (compare Baxter and Koupiritsas, 2005; Clark and van Wincoop, 2001; and Artis and Zhang, 1997). Also, major advances in economic structure and policy have changed the landscape from the 1930s. Counter-cyclical fiscal

policy and large shares of expenditure accounted for by national governments and the service sector are now facts of life.

Co-movement is still an issue, although it is unclear how bad it could have been in the absence of counter-cyclical fiscal policy that went into motion in 2008–9. It is still unclear—and too early to know—to what extent monetary, fiscal, and trade factors have mattered in the current downturn for co-movement. Significant gaps in our knowledge owing to poor data on financial and trade linkages coupled with economic theories that lag behind the rapidly changing structure of international trade and finance plague the real-time assessment of these forces.

Two other important factors that helped the global economy to avoid a 1930s-style trade collapse are floating exchange rates (issues within EMU notwithstanding) and the World Trade Organization (WTO). Floating exchange rates between Japan, Europe, and the United States have allowed for smoother adjustment and less reliance on an implicit exchange-rate guarantee for producers. Moreover, less concern about exchange-rate levels in the advanced economies have liberated monetary policy-makers (EMU is, again, an exception), allowing them to adopt simultaneous, if not fully coordinated, expansionary monetary policies. If the gold standard *mentalité* contributed to tariffs, then we clearly no longer have this problem.

The WTO has demonstrated itself quite capable of imposing sanctions on egregiously protectionist policies: the WTO seems to work. Although the Global Trade Alert has focused on a number of acts of ‘murky protectionism’, there has been no return to near autarky levels of tariffs like that of the 1930s. Multilateralism has held strong on the trade front, especially for the EU, meaning better outcomes in a significant bloc of nations.

In terms of the structure of production and consumption, the global economy has, indeed, changed radically. The recent trade collapse seems to be due to uncertainty and small trade costs changes interacting with supply chains. During the Depression, income losses, tariffs, and other policy problems were most important in explaining the trade decline. Despite having learned how to impede successive rounds of tariff rises and keep income buoyant, today’s Great Recession has produced an almost equally impressive trade decline in its first year. The fact that trade is rebounding quickly is cause for optimism and a reminder that some lessons have been learned, although challenges remain.

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