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Author

Eichengreen, Barry

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UNIVERSITY OF CALIFORNIA AT BERKELEY

Department of Economics

Berkeley, California 94720

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**The Origins and Nature
of the Great Slump, Revisited**

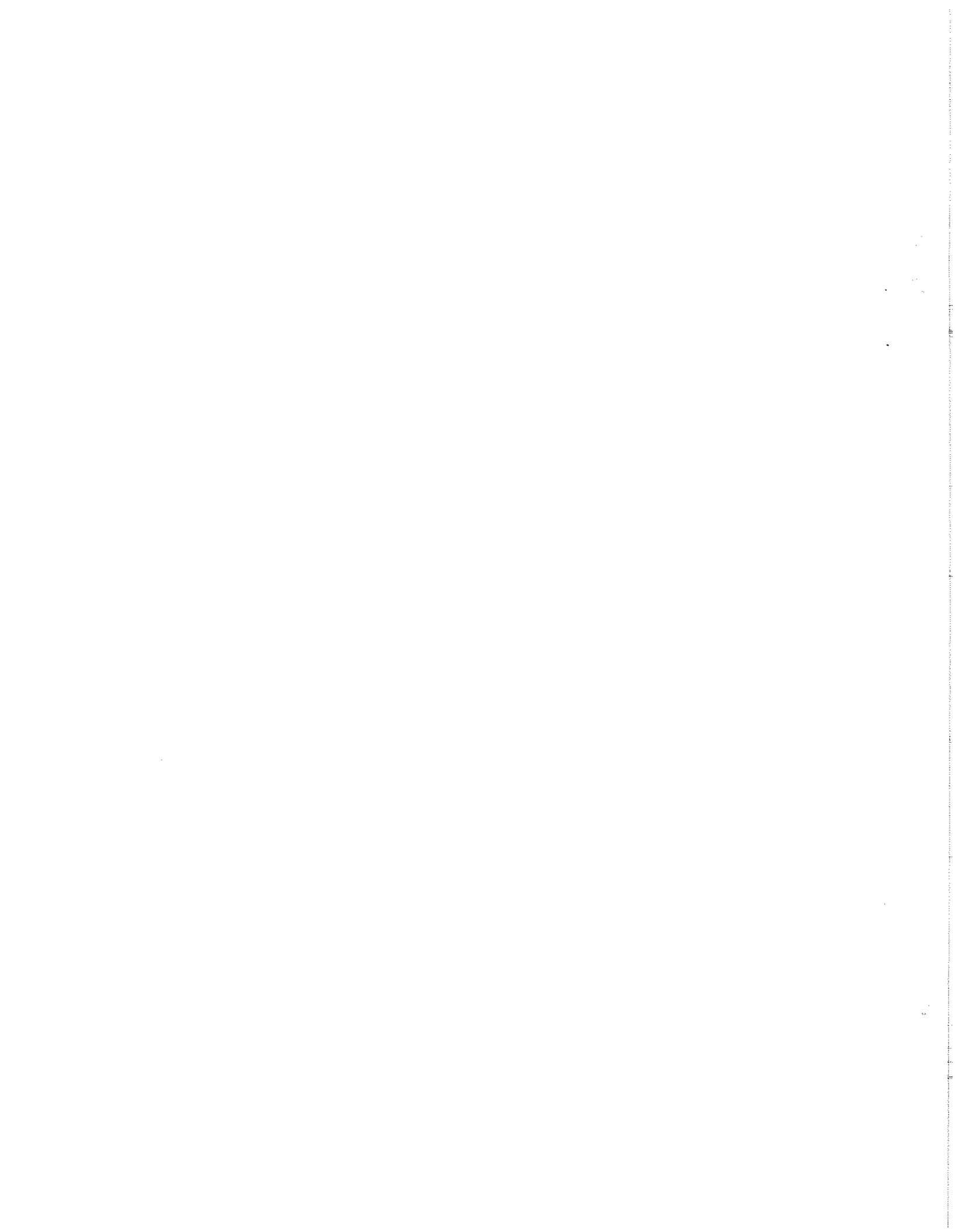
Barry Eichengreen

University of California at Berkeley

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More than a decade has passed since the Economic History Society last published a survey of the depression of the 1930s.¹ That survey, Peter Fearon's The Origins and Nature of the Great Slump, 1929-1932, proved to be one of the best-selling numbers in the "Studies in Economic and Social History" series underwritten by the Society.² The appeal of Fearon's pamphlet was that it treated the Depression of the 1930s as a global phenomenon. Rather than focusing on events in the United States, as had the most influential works of preceding years, Fearon treated the U.S. as but one of many countries succumbing to the slump and emphasized the linkages between them.³ Fearon resurrected an earlier literature in which the depression of the 1930s was seen as resulting from instabilities that had developed over the course of previous decades. Implicit in his account, fully half of which was devoted to World War I and the 'twenties, was the notion that the origins of the slump were somehow connected to structural features of the interwar economy.

A disturbing feature of Fearon's survey was the lack of consensus it revealed on the central issues. The events requiring explanation were clearly identified: the onset of the slump, the persistent downward spiral, the inception of recovery. But for each of these events there seemed to be many potential explanations and little agreement among scholars.

The reader may ask, given this state of affairs, what justifies another survey of such familiar terrain. The answer, I contend, is that the last decade has witnessed a hidden revolution in the macroeconomics of the 1930s. On many of the central issues raised by the earlier literature, a striking degree of consensus has emerged. Where a decade ago all was confusion and disarray, to a surprising extent agreement is now evident.

There are two reasons for using Fearon's pamphlet as the point of departure for this survey. First, in his attempt to view the Depression as a global phenomenon and to link the economic crisis of the 1930s to developments in previous decades, Fearon anticipated trends in the subsequent literature. Second, the comparison serves to highlight how much attention has been devoted subsequently to the macroeconomics of the interwar years. Only six items are common to the bibliographies of both his survey and mine.⁴

I

One of the most enduring themes in research on the depression is that changes in economic structure during World War I and the 1920s were responsible for crisis of the 1930s.⁵ Four variants of the hypothesis recur frequently in the literature. Not all of them have emerged from recent scholarship unscathed.

The first is changes in the composition of production. In the literature on Britain this transformation is couched in terms of the decline of the staple trades (iron and steel, coal, textiles, shipbuilding) and the rise of the "new industries" (chemicals, electrical engineering, motor vehicles). Analogous shifts are evident in other countries where dependence on the staple trades never reached comparable levels. The rapid pace of structural change in industry is portrayed as heightening vulnerability to cyclical instability.

Not only is the mechanism unclear, however, but recent research calls into question the notion that structural change was exceptionally rapid between the wars. For Britain, where changes in the composition of industrial production have received close attention, Matthews, Feinstein and Odling-Smee

find that structural change, measured as the dispersion of growth rates across industries, was slower between the wars than after World War II, when no comparable episode of cyclical instability occurred.⁶

Alternatively, it could be that the direction rather than the pace of structural change heightened the economy's vulnerability to cyclical disturbances. The growing importance of consumer durables was one such change. The automobile epitomized the shift: auto production in the United States rose from fewer than 2 million units in 1919 to more than 5 million in 1929. The importance of the sector was evident in the decline in U.S. industrial production in 1927, which coincided with Henry Ford's decision to shut down his assembly line for six months to retool for the Model A.

The question is whether this had important implications for the cycle. Did it constitute a "consumer durables revolution?" Data for the U.S. show a rise in the share of durables in consumption from less than 9 per cent in the first two decades of the 20th century to 11 per cent in the 1920s. Motor vehicles, furniture, household appliances, radios and phonographs, to which 4.3 per cent of U.S. consumption spending had been devoted in 1900-19, accounted for 7.3 per cent in 1920-29.⁷ These are modest but noticeable changes. But the U.S. was clearly in the vanguard of this movement. In the U.K. the consumer durables revolution was delayed by at least a decade.⁸ That there is little literature on the consumer durables revolution in other countries is probably indicative of the fact that the sector was of still less importance there.

Insofar as the depression was unusually severe in the United States, it is worth exploring the possibility that the growth of the sector contributed to the cyclical instability of the American economy. Consumer durables being

costly, their demand is notoriously sensitive to cyclical conditions (see Figure 1). In periods of uncertainty, households hesitate to tie up their savings -- or, if they purchase on the installment plan, their future incomes -- in durable goods of limited resale value.⁹ Thus, the shift in production and consumption toward consumer durables may have heightened the sensitivity of American industry to cyclical fluctuations.

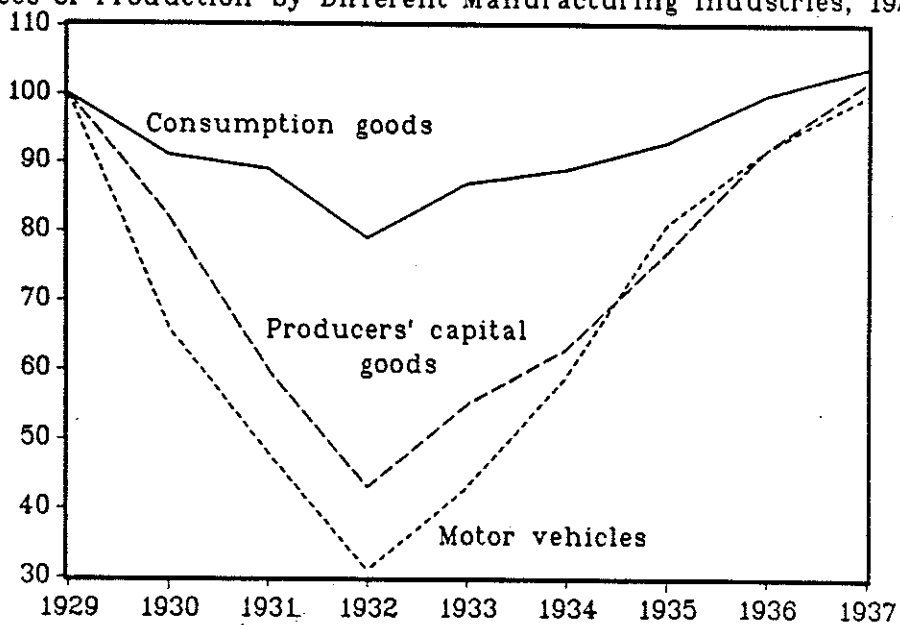
The installment contracts under which consumer durables were purchased in the U.S. may have reinforced the economy's responsiveness to the cycle. Durables were sufficiently expensive that many households could purchase them only on credit.¹⁰ This provided an additional channel through which disruptions to financial markets, typical of economic downturns, could magnify cyclical instabilities. Moreover, in contrast to present-day installment contracts, households that missed installments and had their durables repossessed received no credit for previous payments.¹¹ When income turned down, as in 1929, a small increase in the risk of job loss, raising the danger than an installment payment would be missed, thus acted as a deterrent to households that otherwise might have been willing to enter into new installment contracts. Households already in possession of such contracts had an exceptional incentive to compress other forms of spending so as not to miss a payment and risk repossession.

Thus, there is some reason to think that the growth of consumer durables spending heightened cyclical sensitivity, but mainly in the United States.

Accompanying these changes in the composition of industrial activity were changes in primary production. Eastern European and Russian grain exports had been disrupted by the war, prompting producers elsewhere to step into the breach. U.S. farmers boosted acreage and exports. Canadian acreage

Figure 1

Indices of Production by Different Manufacturing Industries, 1929-37



Source: League of Nations, World Production and Prices, 1937/38

— CONS CARS - - - CAP

under wheat was expanded by 80 per cent between 1913 and 1918. Argentine producers raised their exports of meat, those in New Zealand their production of meat and dairy products. An abundance of cheap credit, together with limited supplies of manufactured goods, fueled a boom in farm land prices during and after the war. When interest rates rose in 1920 and Eastern European grain supplies came back on stream, commodity prices turned down and land prices collapsed. Having shifted resources into the production of grain, meat and dairy products, farmers now hesitated to withdraw that capacity from production.¹² They found themselves saddled with low output prices and a heavy burden of mortgage debts.¹³ The danger that they would default on those debts if crop prices renewed their decline posed an obvious threat to the financial system, while the pressure farmers applied for cheap credit and tariff protection continued to shape policy throughout the decade.¹⁴

The second potential change in economic structure highlighted by the recent literature concerns the operation of labor markets. The 1920s was marked by high unemployment throughout the industrial world. The official unemployment rate in Britain, calculated on an average annual basis, fell below double digits only once after 1920. Trade union returns for Germany show unemployment never falling below 6.8 per cent after 1922. The available statistics for most other industrial countries paint the same dismal picture.¹⁵ Only in the U.S., for which Lebergott's estimates show unemployment reaching a low of 2.9 per cent in 1925, was the record reasonably satisfactory.¹⁶

The pervasiveness of high unemployment before the depression struck points to the possibility of a deterioration in the flexibility and adaptability of labor markets during or after World War I. Collective

bargaining is said to have restricted the downward flexibility of wages. Rates of unionization reached unprecedented levels during and immediately after World War I. A third to a half of the British labor force between the wars was covered by collective agreements.¹⁷ Powerful German unions are said to have placed upward pressure on wages in the second half of the 1920s.¹⁸ Unionism in the U.S. scaled new heights, leading employers to raise wages in order to ward off the threat of organization.¹⁹ Yet it is also true that levels of union density in many countries gave back ground after World War I. The vast majority of workers were still not covered by collective bargaining agreements. There is little evidence outside the United States of a change in the wage determination process. T.J. Hatton's prewar and interwar comparisons for Britain do not indicate a decline in labor market flexibility. Nor does Mark Thomas's analysis of labor market flows.²⁰

The difference in the U.S. was the rise of personnel departments and internal labor markets in key sectors dominated by large enterprises. Under their guidance, workers and firms increasingly agreed to implicit contracts committing themselves to an entire sequence of wage bargains, which reduced the cyclical sensitivity of wages.²¹ This appears to have been a distinctively American phenomenon. As yet, there is no evidence for other countries of a significant spread in the importance of internal labor markets.²² Robert Gordon's time-series analysis reveals a decline after World War I in the responsiveness of wages to fluctuations in GNP for the U.S. but not for Britain and Japan.²³

Any analysis of interwar labor markets is incomplete without a discussion of unemployment benefits and other policy-induced labor market distortions. The bad name acquired by the hypothesis of benefit-induced

unemployment in the U.K. is attributable to the strong terms in which the argument has been couched. Benjamin and Kochin's assertion that the vast majority of British unemployment between the wars was caused by excessively generous insurance benefits has not withstood scrutiny.²⁴ But subsequent studies for Britain using both microeconomic and macroeconomic data continue to turn up a small impact of benefits on unemployment.²⁵ David Corbett's study of Germany yields a picture similar to that which has emerged for Britain, one which features "at most a very modest role for relief benefits in inducing search unemployment."²⁶ But the main effect of overly-generous unemployment benefits would have been to raise the "natural" or equilibrium rate of unemployment. Except insofar as the replacement rate (the ratio of benefits to wages) rose with the deflation that accompanied recessions, it is not clear that insurance schemes should have reduced the cyclical sensitivity of wages.

The third change in economic structure receiving attention in recent years is the operation of the international monetary system. Britain's return to gold in 1925 and France's de facto stabilization in 1926 marked the re-establishment of a truly international gold standard. A number of factors limited that system's capacity to accommodate balance-of-payments disturbances and heightened its vulnerability to destabilizing shocks. The share of foreign exchange in international reserves rose by more than 50 per cent between the end of 1913 and the end of 1928.²⁷ A loss of confidence in sterling or the dollar which led to the liquidation of foreign exchange reserves was sure to apply intense balance-of-payments pressure to Britain and the United States, the principal reserve currency countries, and unleash a deflationary scramble for gold, threatening the stability of the entire

international system.

Further contributing to the fragility of the interwar gold standard was the prevalence of policies insulating domestic output and employment from external disturbances. Violations of the "rules of the game," in which policymakers prevented domestic credit from rising and falling with international reserves, became increasingly frequent as the period progressed.²⁸ The markets therefore subjected the stated commitment to gold to early and repeated tests.²⁹

Moreover, central bankers and governments failed to adequately appreciate the collective-good nature of international monetary stability. International support operations like those undertaken in response to the crises of 1890 and 1907 proved difficult to arrange.³⁰ To defend the convertibility of currency into gold, countries had to rely on their domestic resources, despite the extent to which one country's crisis threatened to undermine confidence in other currencies. More generally, the cross-border repercussions of domestic monetary policies were inadequately taken into account. The surplus countries, the United States and France, raised interest rates and restricted domestic credit in a noncooperative struggle to obtain gold reserves, forcing other countries to do likewise.³¹

Three factors limited the extent of international cooperation: domestic political constraints, international political disputes, and incompatible conceptual frameworks.³² Domestic interest groups with the most to lose were able to stave off adjustments in economic policy that would have facilitated international cooperation. The dispute over war debts and reparations disrupted international negotiations, contaminating efforts to redesign and cooperatively manage the gold standard system. The competing conceptual

frameworks employed in different countries prevented policymakers from reaching a common understanding of their economic problems, much less from agreeing on a solution.

The fourth and final change in structure emphasized in the recent literature concerns the pattern of international settlements. These changes trace back to World War I. As soon as European merchandise exports to Latin America were curtailed in 1914, U.S. producers leapt in to fill the void. Having set up marketing and distribution networks, they proved difficult to dislodge. In Asia, the new competitor -- Japan -- was different, but the consequences were the same. Like their U.S. counterparts, Japanese exporters, having incurred the fixed costs of establishing a marketing infrastructure, proved difficult to dislodge following the armistice.³³ The consequence was a deterioration in the competitive position of European exports, aggravated in some cases, notably Britain's, by the decision to return to the gold standard at an overvalued exchange rate.³⁴

Moreover, World War I had transformed the United States from a net foreign debtor to a net foreign creditor. Net interest transfers, traditionally a debit item in the balance-of-payments accounts, turned positive overnight. Superimposed upon this current account imbalance were war debts and reparations. The victorious powers received nearly \$2 billion of transfers from Germany between 1924 and 1929. A substantial portion thereof was passed on from Western Europe to the United States as principal and interest on war debts. The U.S. received about \$1 billion on war debt account between mid-1926 and mid-1931.

In the 1920s New York surpassed London as the leading international financial center. The surge of U.S. lending was a response to these shifts in

the pattern of balance-of-payments settlements. U.S. lending to Central and Eastern Europe served to recycle European balance-of-payments deficits.³⁵

Debate centers on the rationality of the process. In principle, a country running a current account deficit has available two options: financing it or adjusting to eliminate it. A temporary deterioration in the external position should be financed: the deficit country should borrow to smooth the time profile of spending. The impact of a permanent deterioration in international competitiveness should be eliminated through adjustment (a competitiveness-enhancing decline in real wages and a permanent cut in domestic spending).³⁶ Those critical of U.S. lending to Germany in the 1920s suggest that the underlying disturbance to the balance of payments, namely reparations, was long-lived, and that too much financing and too little adjustment took place.³⁷ U.S. lenders and German borrowers should have recognized that Germany would be unable to sustain her rising burden of external debts.

Recent research lends mixed support to this view. Whether Germany's debt would have grown unsustainably hinges on the rate of growth of consumption relative to the rate of growth of domestic production.³⁸ Adam Klug's review of the evidence for 1925-29 suggests an annual growth rate of real net national product of 2.4 per cent and of real consumption of 3.1 per cent.³⁹ Only if Germany had been consuming significantly less than she produced at the start of the period could consumption have grown more quickly than production without violating the national budget constraint. But as is evident in the fact that Germany was already borrowing in 1924, consumption was too high to remove the discrepancy.

Before concluding that U.S. lenders were reckless or irrational, it is

important to note that contemporary experts systematically overestimated the growth rate of German output in the 1920s, in some cases sufficiently to suggest that the country was solvent.⁴⁰ Their judgments concerning the advisability of international lending therefore hinged on the realism of the assumption that Germany's rapid growth would continue indefinitely. In fact, the 1920s were widely viewed, especially in the U.S., the leading creditor of the period, as a new era of continuous growth. Cyclical downturns were regarded a thing of the past. Assuming growth and lending continued uninterrupted, there was no reason to doubt that the process could be sustained.⁴¹

All four changes in economic structure could have helped set the stage for the post-1929 depression. The first two -- the rising importance of consumer durables and the declining flexibility of labor markets -- were limited mainly to the United States. Together they go some way toward explaining why the post-1929 decline of activity in the U.S. was exceptionally severe. The other two -- the growing fragility of the gold standard and shifts in the pattern of international settlements -- were global phenomena. The fragility of the gold standard heightened the danger of capital flight and intensified the pressure for national central banks to choose between policies to restore internal and external balance. Shifts in the pattern of international settlements increased the dependence of the global commercial and financial system on continued lending by the United States. Any interruption of lending was sure to force severe dislocations on the borrowers. The consequences became readily apparent starting in 1928.

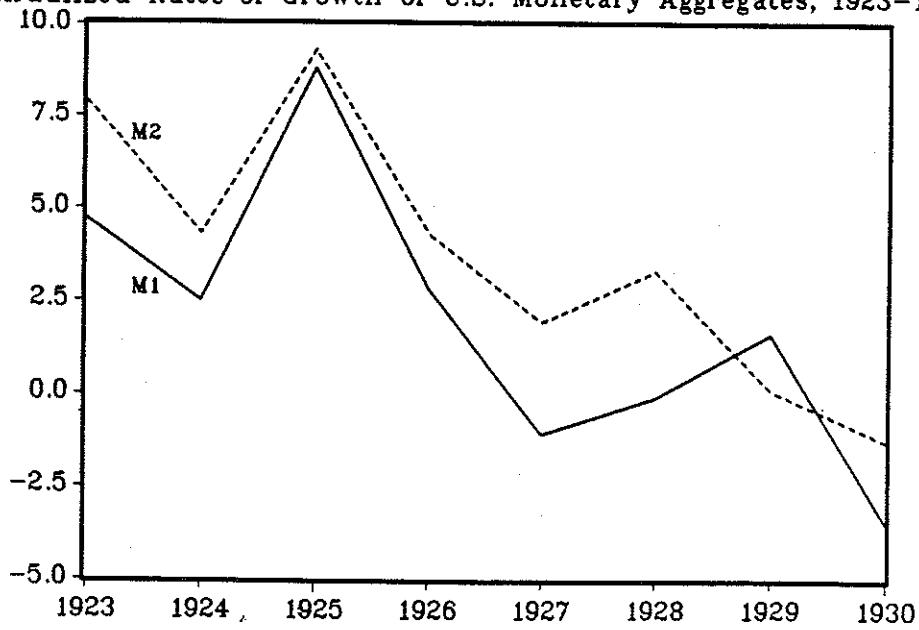
II

For many years, the least conclusive strand of literature on the Great Depression was that concerned with its onset. A consensus now seems to have emerged that increasingly stringent U.S. monetary policy contributed significantly to the onset of the slump. Alexander Field and James Hamilton presented evidence showing that, in response to growing Federal Reserve concern over stock market speculation, U.S. monetary policy turned in a restrictive direction in 1928.⁴² The rate of growth of U.S. monetary aggregates decelerated, as shown in Figure 2. American interest rates rose. The Fed sterilized gold inflows.

In terms of its impact on economic activity worldwide, U.S. monetary policy might seem to have been a small tail wagging a large dog. Restrictive monetary policy in the U.S. had such powerful effects because it induced restrictive monetary policy in other countries. Monetary restriction by the Fed brought U.S. foreign lending to a halt. Unpropitiously this coincided with the movement of gold toward France, where capital inflows were required to rebuild French money balances following the franc's stabilization.⁴³ As the U.S. and France siphoned off gold and financial capital from the rest of the world, foreign central banks were forced to raise their discount rates and to restrict the provision of domestic credit in order to defend their gold parities. Superimposed upon already weak foreign balances of payments, these shifts in U.S. and French policy provoked a greatly magnified shift in monetary policy in other countries. Table 1, based on official statistics compiled by the League of Nations, shows that between 1927 and 1928 the rate of growth of monetary aggregates, while falling by 2 percentage points in the U.S. and Canada, fell by 5 percentage points in both Europe and Latin America.

Figure 2

Annualized Rates of Growth of U.S. Monetary Aggregates, 1923-1930



Source: Hamilton, Monetary Factors.

— M1 - - - - M2

Between 1928 and 1929, monetary growth rates fell by an additional 4 percentage points in North America but by an additional 5 percentage points in the rest of the world. This shift in policy worldwide, and not merely a shift in policy in the U.S., was the source of the contractionary impulse that set the stage for the 1929 downturn.

This view of the importance of U.S. policy might be interpreted to mean that the U.S. initiated the slump. Some, such as Peter Temin, argue instead for shared causation.⁴⁴ In fact, there is no incompatibility between the two views. The shift in policy in the U.S. may have provided the initial impulse, but it produced a crisis rather than merely a deceleration in growth because it was superimposed upon the already critical position in which other countries found themselves. French policies, as described above, were partly to blame. In addition, the failure of other countries to adjust to changing international competitive conditions and their consequent dependence on foreign borrowing did much to heighten the fragility of their external position, allowing the contractionary shift in U.S. policy to elicit an even more dramatic shift abroad.

With central banks clinging to the gold standard and to the restrictive policies required for its defense, economic activity weakened. Recessionary tendencies were evident in Germany, Argentina, Brazil, Australia, Canada and Poland even before the slump surfaced in the United States. The common characteristic of these countries was that they had imported capital on a large scale in the 1920s. Because of their dependence on capital imports, with the evaporation of U.S. lending the deterioration in their balance of payments positions was especially dramatic. Their central banks were forced to adopt an especially draconian response. It is no coincidence that these

Table 1
 Percentage Change in "M1" Between
 Ends of Successive Years
 (in percentage points)

	1926-27	1927-28	1928-29
North America	5.20	3.04	-0.91
Central and South America	12.14	7.53	2.66
Europe	11.54	7.82	2.45
Far East	1.38	5.37	0.20

Notes: All figures are unweighted averages of data for constituent countries. North America includes Canada and United States. Central and South America includes Argentina, Brazil, Chile, Colombia, Uruguay, Venezuela, El Salvador and Mexico. Europe includes Belgium, France, Netherlands, Poland, Switzerland, Austria, Germany, Bulgaria, Czechoslovakia, Hungary, Italy, Yugoslavia, Denmark, Finland, Norway, Sweden, U.K., and Ireland. Far East includes Australia, New Zealand, and Japan. M1 is in parentheses because definitions of sight deposits differ slightly across countries.

Source: League of Nations' Memorandum on Currency and Central Banks (various issues) except for 1926-27 for the United States, which is taken from Friedman and Schwartz (1963). (League of Nations data for U.S. for 1926 are missing deposits of state and local authorities.)

were the first countries to enter the slump.⁴⁵

Initially, the curtailment of U.S. foreign lending produced by higher domestic interest rates moderated the impact on the U.S. economy of restrictive Federal Reserve policy. Eventually, however, the American economy began to weaken. The question is why the U.S. output and employment, once they began to decline, spiralled downward so precipitously. One contributing factor was the deterioration of U.S. export markets. Since a number of other countries entered the recession before the United States, U.S. exports peaked before U.S. industrial production.⁴⁶ The growing importance of consumer durables, for reasons described above, could have lent an additional fillip to the early stages of the slump. So could have the 1929 stock market crash. Economic historians long dismissed the crash as a factor in the decline of output and employment on the grounds that equities were only a fraction of total household wealth and that the marginal propensity to spend out of wealth was small. Recently Christina Romer has suggested additional channels through which the Great Crash could have contributed to the onset of the depression.⁴⁷ The rise in stock market volatility, Romer argues, inaugurated a new era of uncertainty. Not knowing whether the crash signalled a decline in incomes and employment prospects, households deferred their purchases of big-ticket items. Thus, Romer's analysis neatly ties the consumer durables revolution of the 1920s to the economic instability of the 1930s.⁴⁸

The Fed did not loosen significantly in response to the deeping slump. Admittedly, the New York Federal Reserve Bank purchased more than \$100 million of government securities in the wake of the crash. But these purchases were initiated to bail out New York banks that had extended broker's loans. Once those loans were discharged, expansionary open market operations were halted.

In addition, the New York Fed's intervention had not been authorized by the Federal Reserve Board but was undertaken independently. Benjamin Harrison, Governor of the New York Reserve Bank, was called on the carpet; the conflict helped to shift authority over monetary policy to Washington, D.C., where there existed less agreement on the need for policy activism.

The question is whether whether U.S. monetary policy again became tight after the New York Fed's post-crash operations were unwound, say starting around the middle of 1930. Temin's conclusion for the U.S. -- that money was not tight since interest rates were low -- has been challenged on the grounds that low nominal rates in 1930 could have reflected anticipated deflation rather than accommodating monetary policy.⁴⁹ Low nominal interest rates could have concealed high real rates that served to depress investment and consumption. Evidence from commodity futures markets suggests, in fact, that prices were not expected to decline.⁵⁰ But futures prices for agricultural commodities, which depend on the weather and other factors unlikely to affect the industrial and service sectors, may be imperfect indicators of overall price expectations.⁵¹ This observation led James Hamilton to analyze the correlation between commodity futures and the aggregate price level.⁵² He concluded that the 5 per cent decline in the U.S. price level in the first year of the slump (September 1929 to September 1930) was not anticipated. In contrast, about half of the decline in consumer prices in the second and third years of the depression could have been forecast by market participants. These conclusions are consistent with Daniel Nelson's survey of the financial press.⁵³ They imply that ex ante real interest rates were higher than nominal interest rates after September 1930, signalling a role for tight money in the intermediate stages of the slump. This conclusion does not apply to the first

year of the depression, however.

Thus, while there does not appear to be a satisfactory single-factor explanation for the exceptionally rapid contraction of the American economy, a more eclectic approach has considerable explanatory power. The stage was set for the U.S. recession by the contractionary turn in monetary policy. Interacting with existing imbalances in the pattern of international settlements, the shift in Fed policy provoked an even more contractionary shift in policy abroad. Hence U.S. exports weakened. Next the Wall Street crash led consumers to defer spending on big-ticket items, magnifying the cyclical sensitivity of the durables sector to the downturn. In the second half of 1930, another contractionary turn in monetary policy reinforced deflationary tendencies. And the decline in the flexibility of American labor markets limited the economy's ability to adjust.

III

The decline in U.S. economic activity was transmitted to other countries through several mutually-reinforcing channels. These channels operated powerfully because national economies were linked together by the fixed exchange rates of the gold standard.⁵⁴ Price deflation in the U.S. produced price deflation abroad, since the U.S. accounted for more than a third of the global demand for primary products. Less-than-accommodating Federal Reserve monetary policy, reinforced by the shift from bank deposits into currency induced by financial instability, attracted a steady stream of gold toward the U.S. and drained reserves from foreign central banks, forcing them to restrict domestic credit in order to defend gold convertibility. The decline of U.S. merchandise imports, instigated by the contraction but reinforced by the

Smoot-Hawley Tariff, created difficulties for foreign manufacturers.

So long as they remained committed to the fixed exchange rates of the gold standard, other countries could do little to insulate themselves from the destabilizing impulse emanating from the United States. A reduction in the central bank discount rate, open market purchases or an increase in public spending stimulated net commodity imports, encouraged capital outflows and caused a loss of international reserves. Unless the expansionary initiative was reversed quickly, a convertibility crisis ensued. Before departing from gold, countries importing the destabilizing impulse from abroad thus had virtually no capacity to offset it.⁵⁵

Britain and Germany are two prominent examples of countries bound by the gold standard in 1931.⁵⁶ But even the U.S. and France, the two countries with the largest shares of international reserves, faced essentially the same constraints. The U.S. and France each possessed roughly 30 per cent of the world's monetary gold reserves. If any countries had the capacity to relax global credit conditions by loosening credit at home, it was one of these two. Yet both ran up repeatedly against the external constraint.

Milton Friedman and Anna Schwartz have criticized the Fed for failing to prevent the decline in U.S. money supply following Britain's devaluation in September 1931. It is hard to see what else could have been done, however, by a central bank committed to defending the fixed dollar price of gold. Prior to the passage of the Glass-Steagall Act in 1932, the Fed had to worry about the problem of free gold. Government securities did not qualify as collateral for Federal Reserve notes in circulation; the Fed consequently could engage in expansionary open market operations only to the extent that it possessed free gold. With the reserve losses it experienced following the devaluation of

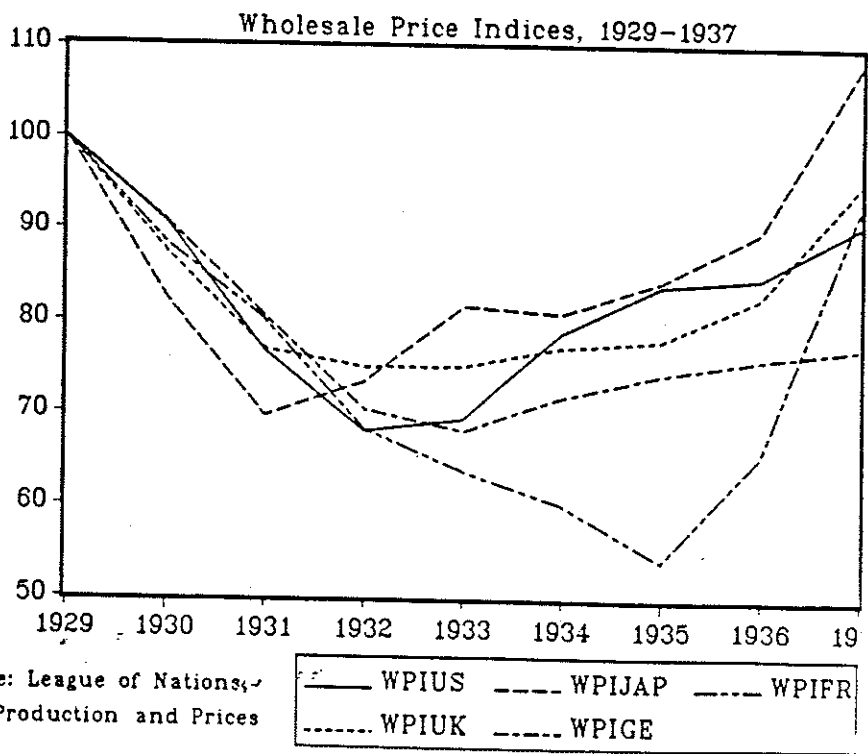
sterling, the Fed's free gold fell to less than half a billion dollars. Hence the scope for expansionary open market operations was limited.⁵⁷

In 1934-35 it was the turn of France. The Flandin reflation, based on government budget deficits financed by the issue of short-term debt, much of which was discounted by the Bank of France, led within months to the loss of 15 per cent of the central bank's international reserves. The government fell, and its successor abandoned Flandin's reflationary program. Once the crisis passed, the new Laval Government resumed its predecessor's policy of deficit spending financed by central bank discounts of Treasury bills -- though, in contrast to Flandin, Laval denied that his government engaged in the practice. The result, in any case, was renewed reserve losses and another crisis of the franc.⁵⁸

There is little question that countries on the gold standard were unable to insulate themselves from the fall in international prices so long as they remained on gold. (Figure 3 illustrates the coherence of price level trends through 1931.) More controversial is the mechanism through which falling prices led to a persistent fall in output. The traditional explanation is that money wages failed to keep pace with falling prices. Figure 4 confirms the tendency in several countries for real wages in manufacturing to rise in the early stages of the slump. This rise in real wages increased production costs, depressing output and discouraging employment. In a closed economy the effect of real wages on output is theoretically ambiguous, but the effect is unambiguously negative in an open economy whose export sales depend on relative costs.⁵⁹ Evidence for a variety of countries suggests that this negative effect dominated in the early stages of the slump.

It is not easy to understand why nominal wages persistently lagged

Figure 3

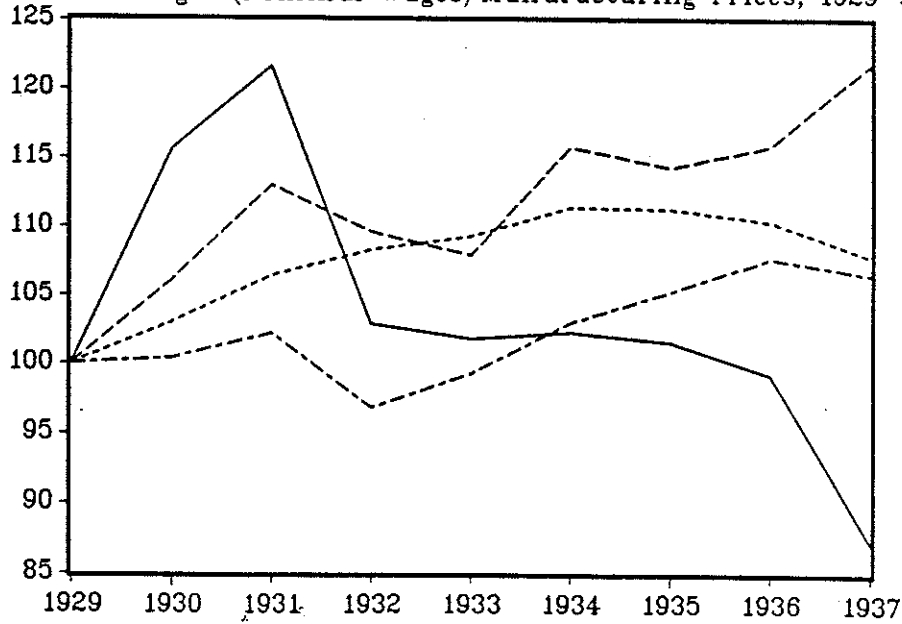


behind falling prices even while unemployment scaled unprecedented heights. In part, policy was to blame. In the United States, President Herbert Hoover pressed employers to forswear wage cuts, hoping that stable labor incomes would sustain demand.⁶⁰ But firms responded by laying off costly workers and limiting hours of work.⁶¹ Similarly, the National Industrial Recovery Act is blamed for the anomalous rise in U.S. real wages in 1933-34, when unemployment was still hovering at 20 per cent.⁶² In Britain, unemployment benefits were not reduced at the same pace as prices and wages, allowing the replacement rate to scale new heights. As the demand for labor fell, workers were encouraged to share the available employment, alternating three days of work with three days on the dole, rather than offering to work full time at lower hourly rates.⁶³ Where as pay was negotiated through collective bargaining, union leaders pushed for the highest wages consistent with the employment of their currently active members; they saw little reason to moderate their demands in order to improve the employment prospects of idle workers who had dropped off their membership rolls.⁶⁴

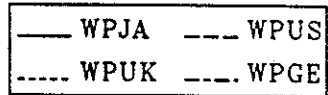
A final factor contributing to the failure of wages to adjust lies in what economists refer to as coordination failure.⁶⁵ Employees in both the public and private sectors would have been willing to accept lower wages had they been confident in the willingness of others to do likewise. Workers would have been willing to accept lower wages had they been confident of the willingness of rentiers to accept lower nominal rents and interest on bonds. Similarly, rentiers would have been willing to accept lower money incomes if they were convinced that workers would accept lower wages and that the cost of commodities would decline accordingly. Only government intervention could break this logjam. This is what the Laval Government in France attempted in

Figure 4

Product Wages (Nominal Wages/Manufacturing Prices, 1929-37)



Source: Eichengreen and Hatton (1988), p.15.



1935. The resistance of public sector unions to nominal wage cuts doomed its efforts to failure.

Scholars skeptical on a priori grounds that nominal inertia in labor markets could have persisted for years have emphasized alternative channels through which deflation depressed output and employment. One such channel was by disrupting the operation of the banking system. The fall in prices made it difficult for debtors to repay their loans, weakening bank balance sheets and undermining confidence in national banking systems. Banking crises and financial panics resulted, especially in countries whose universal or mixed banking systems were particularly vulnerable to the decline of industry profits.

Banking panics disrupted the provision of financial services and the financial system's ability to efficiently allocate capital across competing uses. Small firms in need of working capital found themselves unable to obtain it at any price, forcing them to curtail operations. Enterprises with profitable but risky investment opportunities found themselves unable to obtain the external finance required to exploit them. It is not obvious how the operation of market forces could have brought to an end the self-reinforcing spiral of bank failures and declining output. In the absence of intervention by a lender of last resort, declining output which led to bank failures and disintermediation simply reinforced the decline in output, worsening the financial crisis and further depressing economic activity.

The damage caused by financial instability has been most persuasively documented for the United States.⁶⁶ But bank failures and financial crises were a pervasive feature of the 1930s in other countries as well.⁶⁷ Only countries like Britain and Canada, whose banking systems were highly

concentrated, widely branched and less than intimately connected to industry, were immune from banking panics and their effects.⁶⁸

The monetary and nonmonetary effects of financial crises were containable only through lender-of-last-resort intervention. Here the gold standard again figured as a constraint. Where gold and foreign exchange reserves had already fallen to the legal minimum, the extension of additional domestic credit violated a basic provision of the gold standard. Countries had the option of suspending or modifying gold cover restrictions, but either action threatened to undermine confidence in convertibility. To defend the gold standard, central banks were forced to restrain the impulse to intervene, sacrificing the stability of the domestic banking system. It is no coincidence, then, that banking panics were most prevalent in countries which held fast to the gold standard.⁶⁹

Indeed, where the gold standard prevailed, lender-of-last-resort intervention could be not only difficult but counterproductive. The provision of additional liquidity when the ratio of gold reserves to monetary liabilities approached its statutory minimum signalled that the authorities attached a higher priority to the condition of the banking system than to the maintenance of gold convertibility. Fears of devaluation induced depositors to withdraw their bank balances and to shift into gold or foreign currency. The faster liquidity was injected into the banking system, the faster it leaked back out. Lender-of-last-resort intervention only encouraged the liquidation of deposits and provoked capital flight. Suspending gold convertibility was therefore a precondition for effective intervention to stabilize the banking system.⁷⁰

Circumventing this dilemma required internationally-coordinated lender-

of-last resort intervention. If the free reserves of the entire group of gold standard nations had been made available to the country experiencing the speculative crisis, it no longer followed that the provision of liquidity courted devaluation. Similarly, if reflationary monetary and fiscal initiatives had been coordinated internationally, the pursuit of such policies no longer would have been inhibited by the gold standard constraints. Expansion at home still would have weakened the balance of payments, but expansion abroad would have strengthened it. Had domestic and foreign intervention been coordinated, their impact on the balance of payments could have been eliminated.⁷¹

Why then was coordinated reflation so difficult to arrange? One problem was that statutory restrictions inspired by the memory of postwar inflation limited central banks' freedom of action. The Bank of France and the German Reichsbank were essentially prohibited from engaging in expansionary open market operations. The Federal Reserve System effectively found itself in the same position before collateral requirements on Federal Reserve notes were modified in 1932.⁷² But these restrictions were themselves symptomatic of deeper disagreements among countries over the appropriate response to the depression. In Britain, the slump was attributed to inadequate provision of money and credit under the prevailing depressed business conditions. There existed a well-articulated model of the benefits of monetary reflation, courtesy of Keynes's Macmillan Committee evidence, and a powerful counter-example in the form of the depressing effects of Bank of England policy in the 1920s.⁷³ In France, in contrast, monetary expansion was regarded as the problem rather than the solution. In light of France's pre-1927 experience with inflation, monetary expansion was associated not with prosperity but with

financial and political chaos. The depression itself was viewed as a consequence of excessive credit creation undertaken in the 1920s by central banks that failed to abide by the rules of the gold standard game. Cheap credit had fueled unhealthy speculation, setting the stage for the crash of 1929. For central banks to again intervene when prices finally had begun to fall to more realistic levels threatened to provoke another round of speculative excesses and, ultimately, an even more catastrophic depression. It would be healthier in the long run, in the prevailing French view, to purge speculative excesses from the system by liquidating enterprises that had overextended themselves prior to the crash. A similar liquidationist view conditioned U.S. monetary policy until Franklin Delano Roosevelt took office in 1933.⁷⁴ Given the prevalence of these incompatible conceptual frameworks, it is not hard to see why policymakers in different countries found collaboration so difficult.

IV

The alternative to coordinated reflation was for countries to disengage themselves from the international system in order to reflate unilaterally. Two means of doing so were currency depreciation and trade restrictions, both of which helped to insulate the balance of payments from the effects of expansionary initiatives. Several of the primary-producing nations that had been battered first by the collapse of U.S. lending and then by the decline of commodity prices began to surreptitiously abridge gold convertibility as early as 1929. Britain led some two dozen countries, mainly her Scandinavian trading partners and members of her Commonwealth and Empire, off the gold standard in September 1931. A bloc of countries, led by France and including

the United States until April 1933, clung to the gold standard but adopted increasingly comprehensive tariffs and quotas to neutralize the balance-of-payments effects of currency depreciation abroad. Germany and much of Eastern Europe used tariffs, quotas and clearing arrangements to the same end.

The older literature on the depression indicts these tariffs and quotas for greatly exacerbating the slump. The Smoot-Hawley Tariff imposed by the U.S. in 1930 is blamed for having unleashed a global wave of retaliatory trade restrictions. Simple income-expenditure models have been used to argue that, by obstructing exports, trade warfare destroyed one of the few remaining sources of autonomous demand.⁷⁵ Curiously, these analyses essentially ignore the expenditure-switching effects of tariffs. As a tax on imports, a tariff switches demand from imports toward domestic goods; taken in isolation, an tariff like Smoot-Hawley is likely to redistribute the depression internationally (moderating it in the country imposing the tariff, whose industries benefit from the tariff-induced shift in expenditure toward it, but intensifying it in other countries, whose industries experience a decline in demand), without significantly altering the severity of the depression worldwide.⁷⁶

Retaliation changes the story. Insofar as foreign tariffs neutralized the expenditure-switching effects of Smoot-Hawley, leaving the international allocation of spending roughly unchanged, the macroeconomic effects would have been minimal. Insofar as import tariffs placed modest upward pressure on prices, they tended to moderate the impact of debt deflation on national financial systems. But insofar as the monetary authorities failed to respond, upward pressure on prices exacerbated the scarcity of real money balances, tending to raise interest rates at the worst possible time. Since the two

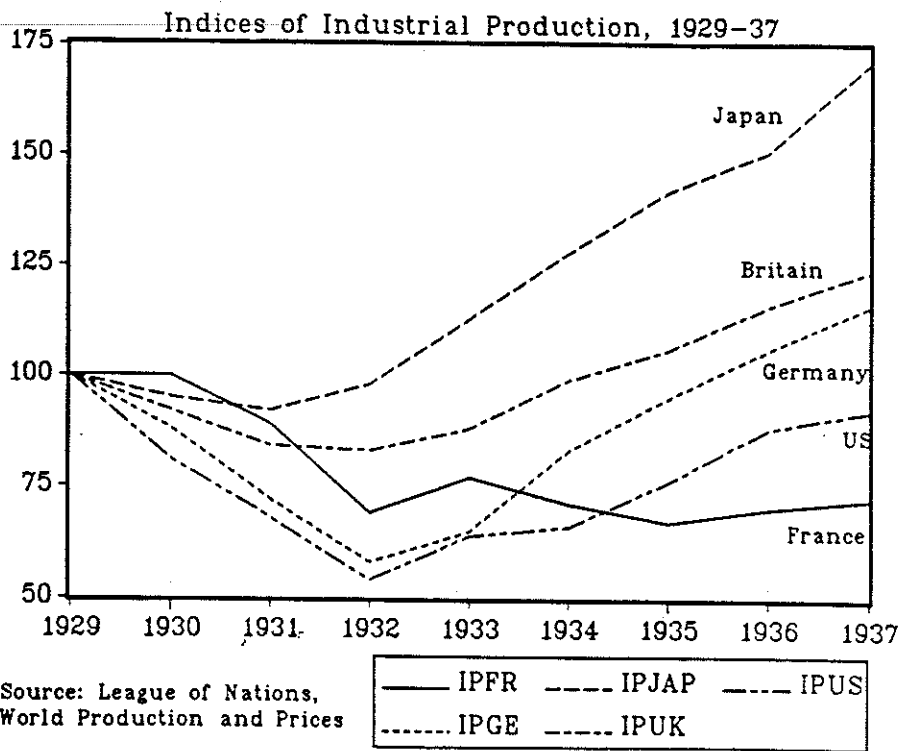
effects worked in opposite directions, on balance the aggregate effects of trade restrictions in the 1930s were probably small.⁷⁷

This is not to deny that tariffs and quotas had implications for the composition of spending within countries. They aggravated the difficulties of some industries and moderated those of others.⁷⁸ The point is not that tariffs should be ignored by scholars conducting industry studies for the 1930s; rather, it is that those concerned to understand the sources of the macroeconomic crisis have probably paid undue attention to protectionism. Only to the extent that tariffs switched demand toward sectors exhibiting increasingly returns to scale were they likely to have had a significant effect on aggregate levels of output and productivity.⁷⁹

Perhaps the most important effect of trade warfare in the 1930s was in aggravating the balance-of-payments problems of debtor nations. The United States was the largest primary-commodity importer of the period; the Smoot-Hawley Tariff surely increased the difficulties faced by commodity exporters seeking to service their debts. The first wave of Latin American defaults followed by less than a year the imposition of Smoot-Hawley. Default in Latin America and Eastern Europe intensified the balance-of-payments pressure on the creditors. Interest and dividends earned abroad were the component of the British balance of payments that deteriorated most markedly in the year leading up to the 1931 sterling crisis.⁸⁰ Protectionism can therefore be allotted some responsibility for the collapse of the gold standard system.

The more important means of loosening the link to the international system was currency depreciation. By suspending gold convertibility and allowing the currency to depreciate, countries could enhance the competitiveness of their exports. The exports of countries that abandoned the

Figure 5



gold standard recovered more quickly than those of countries that clung to it.⁸¹ As with tariffs, however, this effect only redistributed the impact of the depression internationally and could be neutralized by competitive depreciation abroad. More significant was that currency depreciation provided additional scope for the unilateral pursuit of expansionary policies. Countries that allowed their currencies to depreciate could expand their money supplies without having to worry about the consequences for the balance of payments. Depreciation removed the pressure to cut government expenditure and raise taxes in order to defend the exchange rate. The adoption of more expansionary policies enabled countries with depreciated currencies to edge their way toward recovery. Moreover, countries continued to benefit from the more expansionary policies facilitated by currency depreciation even if other countries depreciated their currencies as well.

The timing and extent of depreciation can explain much of the variation in the timing and extent of economic recovery.⁸² Britain's early devaluation, for example, helps to explain the early date of her recovery so evident in Figure 5. Japan's early and extensive depreciation helps to explain her unusually rapid growth in the 1930s. U.S. recovery coincides with the dollar's devaluation.⁸³ France's delayed recovery was clearly associated with her unwillingness to devalue until 1936. Table 2, which expands the sample of countries to all those for which comparable data on industrial production are available for the 1930s, confirms the generality of the point. There is a strong contrast between relatively rapid recovery in countries that abandoned the gold standard and the persistence of the slump in countries which maintained it.

Countries that devalued did not all pursue reflationary initiatives to

Table 2.
Percentage Growth of Industrial Production, 1929-36

	1929-32	1929-33	1929-34	1929-35	1929-36
Gold Bloc Countries	-28.17	-22.60	-21.84	-20.60	-13.94
Exchange Control Countries	-35.70	-31.70	-21.24	-10.28	-2.30
Sterling Area Countries	-8.75	-2.53	8.88	18.05	27.77
Other Countries with Depreciated Currencies	-17.48	-1.63	3.26	14.13	27.06

Note: Figures are calculated as unweighted averages of country data.

Gold Bloc: Belgium, France, Netherlands, Poland, and Switzerland

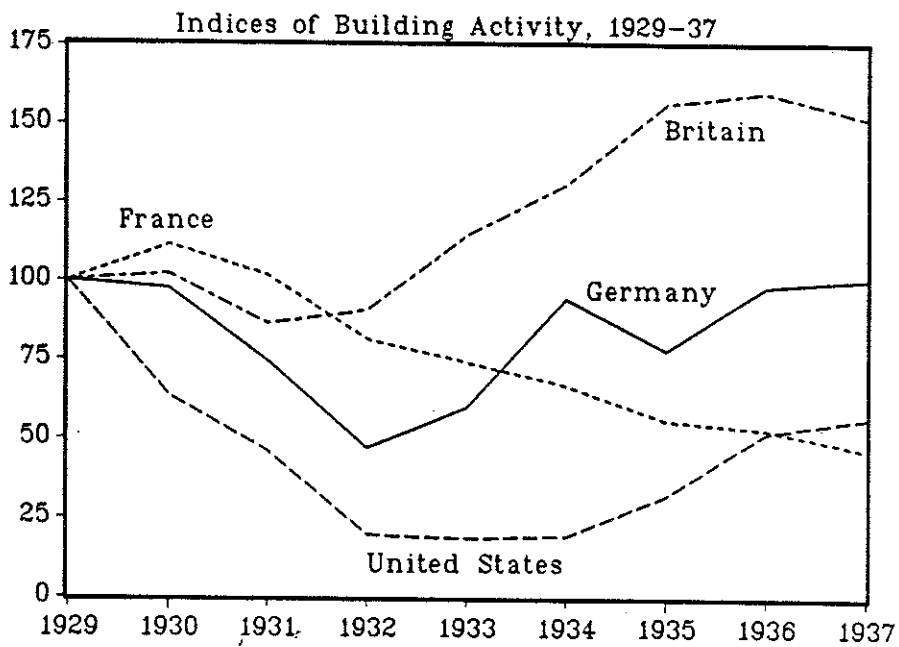
Exchange Control: Austria, Czechoslovakia, Germany, Hungary, and Italy

Sterling Area: Denmark, Finland, New Zealand, Norway, Sweden, and the UK

Other Depreciators: Brazil, Colombia, Chile, Mexico, Costa Rica, Guatemala, Nicaragua, El Salvador, and the U.S.

Source: League of Nations, Monetary Review (various issues).

Figure 6



Source: League of Nations, World
Production and Prices, 1937/38, p.27.

— BUILGE	--- BUILUS
..... BUILFR	----- BUILUK

the same extent. In a few cases, policymakers expanded domestic credit aggressively following the abandonment of gold. Prices and domestic demand rose in its wake. Interest-sensitive sectors like construction were special beneficiaries of cheap money (see Figure 6). Since the expansion of domestic credit stimulated domestic demand and placed upward pressure on prices, there was little growth of exports. Recovery instead was led by the home market. More commonly, policymakers hesitated to capitalize upon their newfound freedom. The association of currency depreciation with inflation, inherited from the 1920s, remained strong. Policymakers waited for evidence that depreciation did not automatically auger inflation before turning to reflationary policies. Limited expansion of domestic credit meant limited stimulus to domestic demand and little upward pressure on prices (see Figure 3). Exports were not crowded out. The improvement in the trade balance, along with the reflux of financial capital, strengthened the balance of payments. Eventually capital inflows helped to relax domestic credit conditions and put upward pressure on money supplies (Figures 7 and 8). One reason why complete recovery was so long in coming, however, was that central bank and treasury officials, curiously fearful of inflation when deflation was the real and present danger, remained hesitant to act. In only a few countries was expansionary monetary policy used systematically.

Because monetary expansion remained tentative, currency depreciation in the 1930s was beggar thy neighbor. Countries depreciating their currencies and shifting demand toward the products of domestic industry satisfied their growing demands for money and credit by importing gold and capital from abroad. Their reserve gains were reserve losses for countries still on gold. The central banks of gold standard countries were forced to retrench.

Figure 7

Monetary Base (Notes, Coins, Central Bank Sight Liabilities), 1929-1937

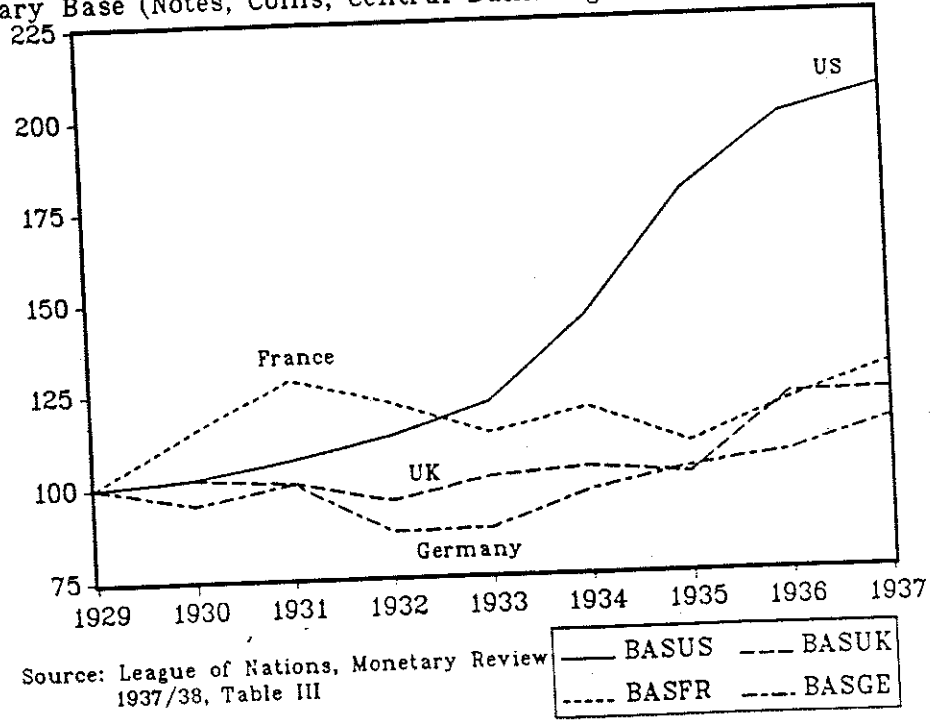
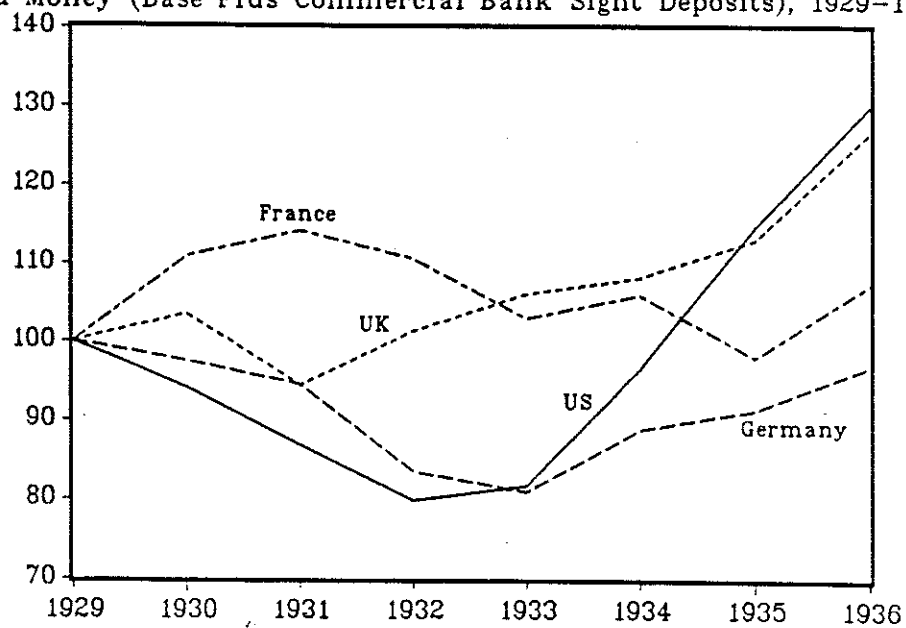


Figure 8

Broad Money (Base Plus Commercial Bank Sight Deposits), 1929-1936



Source: League of Nations, Monetary Review
1937/38, Table III.

— M1US	--- M1GE
..... M1UK M1FR

Precisely when exporting to countries with newly-depreciated currencies became more difficult, domestic demand was compressed. But the real problem in the 1930s was not that competitive depreciation took place; to the contrary, it was that depreciation was not more widespread and that it did not occasion more expansionary domestic policies.

Thus, the recent literature, by emphasizing the contribution of domestic and international monetary initiatives to economic recovery in the 1930s, has inverted the prior tendency to dismiss monetary policy as ineffectual and to regard fiscal policy the critical policy variable. Upon reflection, this is not surprising. In the U.S., the most important fiscal change of the period, in 1932, was a tax increase, not a reduction. Observed budget deficits were small. Cyclically-corrected budget deficits were smaller still.⁸⁴ Even in the presence of large fiscal multipliers, the increment to aggregate demand attributable to fiscal policy remained modest until rearmament spending got underway in the second half of the 1930s.⁸⁵ In contrast, in countries like the U.S. (and to a lesser extent the U.K.), the expansion of currency and bank deposits was enormous. The one significant interruption to monetary expansion in the U.S., in 1937, revealingly coincided with the one significant interruption to economic recovery.⁸⁶ Nor is there evidence for Britain of a liquidity trap that would have rendered monetary policy ineffectual.⁸⁷ Even in Sweden, renowned for having developed Keynesian fiscal policy before Keynes, monetary policy did most of the work.⁸⁸ Clearly, the tendency to dismiss monetary policy in the 1930 on the grounds that one "cannot push on a string" has been pushed too far.

From the most recent generation of studies, a coherent picture of the Great Depression has emerged. It links the slump of the 1930s to changes in economic structure that took place during World War I and the 1920s: to the expanding production of consumer durables and the declining flexibility of labor markets in the United States, to the growing fragility of the international monetary system, and to the dependence of the pattern of international settlements on U.S. lending. Each of these changes served to magnify the impact of the principal shift in economic conditions at the end of the 1920s: increasingly restrictive U.S. monetary policy and the reinforcing policy shift it elicited from foreign countries.

With the disintegration of the financial system, the economy's self-correcting mechanisms were rendered weak and ineffectual. Policy initiatives were required to initiate recovery. Abandoning the gold standard was a necessary precondition for their adoption. By stabilizing money supplies and banking systems, governments succeeded in bringing the downward spiral to a halt. As they abandoned the gold standard and allowed domestic credit conditions to relax, economic recovery gradually got underway. In most cases, the expansion of domestic credit remained tentative, however, and domestic financial stringency was eliminated mainly through capital inflows. Capital inflows for countries with depreciated currencies meant capital outflows for countries still on gold. Hence currency depreciation had beggar-thy-neighbor effects. But more widespread depreciation still would have been helpful for recovery, especially insofar as it occasioned more rapid expansion of domestic credit.

The traditional distinction between two views of the depression of the

'thirties, which attribute it to structural instabilities in the world economy and to misguided policies, loses much of its force in light of recent scholarship. Policy may have provided the initial destabilizing impulse, but changes in economic structure strengthened the propagation mechanism. More fully understanding both the policy choices and the structures shaping their effects is the obvious agenda for research.

1. This is a greatly revised version of a paper first presented to the meeting of the European Network on the Economic History of the Interwar Years. For helpful comments I am grateful to Michael Bernstein, Michael Bordo, Alexander Field, Adam Klug, Lars Jonung, Martha Olney, Peter Temin, Eugene White and especially Mark Thomas.
2. Where American scholars universally refer to this episode as the Great Depression, their British counterparts reserve the term for the period 1873-93, like Fearon denoting the depression of the 1930s as the Great Slump. In this article I use Great Depression and Great Slump interchangeably to refer to the decline in economic activity that began in 1929.
3. Two of the most influential and certainly most widely-cited studies of the Depression published in the 1960s and 1970s were Friedman and Schwartz, A Monetary History of the United States, and Temin, Did Monetary Forces Cause the Great Depression? Both focused almost exclusively on the United States.
4. In this survey I have consciously sought to emphasize new directions in research on the macroeconomics of the 1930s. This is why important earlier studies are omitted. Moreover, owing to space limitations it is impossible to provide a comprehensive listing of recent contributions to the literature. Specialists in British economic history may consult Broadberry, The British Economy Between the Wars. A comprehensive survey of the recent literature on the United States is Peter Fearon, War Prosperity and Depression. Peter Temin's Robbins Lectures, Lessons from the Great Depression, also summarize and synthesize the recent literature from an international perspective.
5. Two influential statements of the view are Svernilson, Growth and Stagnation in the European Economy, and Steindl, Maturity and Stagnation in American Capitalism. More recently, Peter Temin, Lessons from the Great Depression, linked the depression of the 'thirties to World War I, and Michael Bernstein, The Great Depression, related it to changes in economic structure in the 1920s.
6. See Matthews, Feinstein and Odling-Smee, British Economic Growth, and also Von Tunzelmann, "Structural Change and Leading Sectors."
7. These are Olney's estimates, from "Consumer Durables in the Interwar Years." For the period 1900-1919, I have taken unweighted averages of her figures for the first two 20th century decades.
8. See Bowden, "Consumer Durables Revolution."
9. This mechanism is emphasized by Mishkin, "Household Balance Sheet." Inability to ensure that they were properly maintained made durables difficult to rent, while informational asymmetries worked to limit resale value. The main informational asymmetry -- that sellers had more information about reliability than did buyers -- is developed by Akerlof, "Market for Lemons." Romer, "The Great Crash," emphasizes that the early phases of the depression were characterized by unusual levels of uncertainty.

10. See Olney, "Credit as Production Smoothing Device."
11. See Olney, Buy Now, Pay Later, from where the points in the remainder of this paragraph are also drawn.
12. The plausibility of this mechanism, in which temporary relative price movements have permanent effects, is supported by recent theoretical work in economics analyzing permanent effects of the U.S. dollar's temporary appreciation in the 1980s. See Avinash Dixit, "Hysteresis, Import Penetration and Exchange Rate Passthrough." Dixit's model, in which there are fixed costs to entering and exiting a market, seems particularly suitable to analyzing agricultural supply decisions in the 1920s.
13. Farm foreclosure rates in the U.S. averaged more than 10 per 1,000 farms between 1921 and 1925 and rose significantly in the second half of the decade. The comparable figure for 1913-1920 was 3 per 1,000. See Alston, "Farm Foreclosures," Table 1.
14. The concentration of U.S. bank failures in regions heavily exposed to agricultural risk is emphasized by Temin, Monetary Forces. The role of the agricultural lobby in the passage of the U.S. Smoot-Hawley Tariff in 1930 is reviewed by Eichengreen, "Political Economy of the Smoot-Hawley Tariff."
15. These unemployment rates are tabulated and their construction is discussed in Eichengreen and Hatton, "Interwar Unemployment," pp.6-7.
16. Lebergott, Manpower, p.512.
17. Thomas, "Institutional Rigidity in the British Labour Market."
18. The notion that high real wages were the source of German unemployment in the second half of the 1920s has come to be known as the "Borchardt thesis." See Borchardt, Perspectives on Modern German History. A recent analysis that is generally supportive of the Borchardt thesis is Corbett, "Wage Woes."
19. This is, for example, the explanation for Henry Ford's famous decision to double daily wages to \$5, in Raff, "The Five Dollar Day at Ford."
20. Hatton, "Institutional Change and Wage Rigidity;" Thomas, "Institutional Rigidity."
21. The leading study of personnel departments is Jacoby, Employing Bureaucracy. It builds on the literature on implicit contracts in economics, viz. Azariadis, "Implicit Contracts and Involuntary Unemployment."
22. See Thomas, "Institutional Rigidity;" "How Flexible Were Wages?"
23. Gordon, "Why U.S. Wage and Employment Behavior Differs." Gordon's conclusions are consistent with the findings of Cagan and Sachs of a decline in U.S. wage and price flexibility over the course of the 20th century. Cagan, "Changes in Recession Behavior;" Sachs, "Changing Cyclical Behavior." Note that the argument is not that American labor markets were

perfectly flexible before the war. (For evidence that they were not, see Carter and Sutch, "The Labor Market in the 1890s.") It is only that the extent of wage flexibility declined further between the prewar and interwar periods.

24. Benjamin and Kochin, "Searching for an Explanation." A good review of the subsequent literature critical of the hypothesis is Hatton, "The British Labour Market in the 1920s." An authoritative recent study, if not the final word, is Dimsdale, Nickell and Horsewood, "Real Wages and Unemployment in Britain."

25. This was my conclusion based on the analysis of a survey of London households, as reported in Eichengreen, "Unemployment in Interwar Britain." It is also the conclusion of Dimsdale, Nickell and Horsewood, "Real Wages and Unemployment" on the basis of their analysis of aggregate quarterly data.

26. Corbett, "Unemployment Insurance and Induced Search."

27. Lindert, Key Currencies and Gold, pp.12-15. The implications of this fact for the stability of the system are emphasized by Hamilton, "Role of the Gold Standard."

28. Eichengreen, "International Monetary Instability Between the Wars," pp.94-96.

29. Hamilton, "Role of the Gold Standard."

30. The importance of international support operations under the prewar gold standard is argued by Eichengreen, "Credibility and Cooperation Under the Gold Standard." The contrast with the interwar period is a theme of Eichengreen, Golden Fetters.

31. Two treatments of monetary policy in the 1920s as a noncooperative game are Eichengreen, "Central Bank Cooperation Under the Interwar Gold Standard," and Broadberry, "Monetary Interdependence and Deflation."

32. See Eichengreen and Uzan, "The 1933 World Economic Conference," for further development of these points.

33. Again, see Dixit, "Hysteresis."

34. See Redmond, "The Sterling Overvaluation in 1925."

35. The recycling analogy is explicit in Schuker, "American 'Reparations' to Germany."

36. See for example Sachs, "The Current Account and Macroeconomic Adjustment."

37. Schuker, "American 'Reparations' to Germany."

38. If the growth rate exceeded the interest rate, the debt/GNP ratio would decline in the absence of additional borrowing. Insofar as domestic spending fell short of domestic production, the excess could be used to repay foreign debt, thereby reducing it as a share of GNP. See Cohen, "How to Evaluate Solvency."

39. Klug, "American Loans to Germany."

40. Klug, ibid, argues that contemporary observers had exaggerated the destructiveness of the war and the fall in output in the latter stages of the hyperinflation. Thus, they overstates the rate of growth of output from an artificially low base in 1924-25 to the end of the 1920s.

41. In theory, there was no reason Germany ultimately had to repay the principal or even stop borrowing. She could continue to borrow as her economy grew, devoting a constant fraction of GNP to debt service. Conditions under which this result obtains are spelled out in Eichengreen, "Trends and Cycles in Foreign Lending." See also Klug, "American Loans to Germany." The belief that recessions were a thing of the past also can be invoked to rationalize the rise of the New York stock market on the grounds that high stock prices were rational assuming that economic growth (and hence dividends) would now proceed without interruption. This explanation for the stock market boom is advanced by Sirkin, "The Stock Market of 1929," and has been criticized recently by White, "When the Ticker Ran Late."

42. Field, "A New Interpretation of the Great Depression;" Field, "Asset Exchanges and the Demand for Money;" Hamilton, "Monetary Factors in the Great Depression."

43. Eichengreen, "The Bank of France and the Sterilization of Gold." See also Moure, "The Bank of France and the Gold Standard." Dornbusch, Sturzenegger and Wolf, "Extreme Inflation," citing a number of historical and contemporary episodes, show that this increase in the demand for real money balances is a standard response to credible stabilizations.

44. Temin, Lessons from the Great Depression.

45. Other factors such as the weakness of primary commodity prices may have also contributed to the difficulties of many of these countries. But some, notably Germany, were primary-commodity importers to whom the argument does not apply. The debate over whether the onset of the slump in Germany was due to the curtailment of capital inflows or to independent sources of weakness in Germany, as argued by Peter Temin, seems to have been resolved in favor of the former. See Temin, "Beginning of the Great Depression in Germany," and, for a recent assessment of the debate, Balderston, "Beginning of the Depression in Germany." Alternatives like Temin's have not been suggested, in any case, for the other countries to experience an early onset of the depression.

46. Fleisig, Long-Term Capital; Eichengreen, Golden Fetters, chapter 8.

47. Romer, "The Great Crash." Much other work on the 1929 crash was stimulated by its 1987 counterpart. See for example Santoni and Dwyer, "Bubbles or Fundamentals," and Rappoport and White, "Was There a Bubble?"
48. Romer's argument is buttressed by time-series evidence linking production in industries producing consumer durables to the volatility of equity prices.
49. Temin, Monetary Forces. Schwartz, "Understanding 1929-1931."
50. Hamilton, "Monetary Factors."
51. This point is emphasized by Cecchetti, "Prices During the Great Depression."
52. Hamilton, "Was the Deflation During the Great Depression Anticipated?"
53. See Nelson, "Was the Deflation of 1929-30 Anticipated?"
54. Choudri and Kochin, "The Exchange Rate," provide evidence on the operation of these linkages for countries that went off the gold standard at different times. The point has been reemphasized by Eichengreen, Golden Fetters, and Temin, Lessons from the Great Depression.
55. This is the theme of Eichengreen, "Relaxing the External Constraint," Temin, Lessons from the Great Depression, and Bernanke and James, "The Gold Standard, Deflation and Financial Crisis."
56. Cairncross and Eichengreen, Sterling in Decline, chapter 3; Borchardt, "Could and Should Germany have Followed Great Britain?"
57. It might seem perplexing that free gold was so scarce in light of the fact that the U.S. had been importing gold for much of the period. The explanation is that the supply of eligible paper which qualified as backing for as much as 60 per cent of Federal Reserve notes in circulation declined along with business activity in the early stages of the slump. As eligible paper became scarce, the Fed was forced to substitute gold, locking up its reserves. Eichengreen, Golden Fetters, chapter 10.
58. Jackson, The Politics of Depression; Eichengreen, Golden Fetters.
59. In a closed economy, the real wage-employment relationship is theoretically ambiguous because higher real wages, while increasing production costs, also stimulate demand. See Dimsdale, Nickell and Horsewood, "Real Wages and Unemployment in Britain." In an open economy, demand is given by global conditions so only the first effect operates. See Eichengreen and Sachs, "Exchange Rates and Economic Recovery;" Temin, Lessons from the Great Depression. Newell and Symons, "Macroeconomics of the Interwar Years," use the closed-economy model to analyze the world as a whole, and find that the negative relationship between real wages and output dominates.
60. Barber, New Era to New Deal.

61. Bernanke, "Employment, Hours and Earnings."
62. See Weinstein, Recovery and Redistribution. Additional econometric analysis of the impact on wages of the NIRA codes is provided by Eichengreen, Golden Fetters, chapter 11.
63. The prevalence of this alternating pattern, known as the OXO system, should not be exaggerated. Thomas, "Labour Market Structure," suggests that as of 1934 fewer than one in four British workers on short-time participated in formal OXO schemes.
64. See Crafts, "Long-Term Unemployment," who draws on the "insider-outsider" models of unemployment developed by Lindbeck and Snower in their book, The Insider-Outsider Theory.
65. A clear statement of the approach can be found in Cooper and John, "Coordinating Coordination Failures." This is essentially a formalization of Keynes's theory of wage relativities and wage rigidity: Keynes, General Theory.
66. Bernanke, "Nonmonetary Effects of the Financial Crisis."
67. Bernanke and James, "The Gold Standard, Deflation and Financial Crisis" present evidence of the importance of bank failures for output trends in more than 20 countries.
68. On the British case, see Grossman, "The Shoe that Didn't Drop," and on Canada see Haubrich, "Non-monetary Effects of Financial Crises." The contrast between the performance of the U.S. and Canadian banking systems is also a theme of White, "Banking Crisis of 1930."
69. The linkage between the gold standard and financial panics is emphasized by Eichengreen, "International Monetary Instability," Bernanke and James, "The Gold Standard, Deflation and Financial Crisis," and Temin, Lessons from the Great Depression.
70. Two examples of the destabilizing effect of lender-of-last-resort intervention under the gold standard were the Austrian and German banking crises in the summer of 1931. See Eichengreen, Golden Fetters, chapter 9.
71. Eichengreen, "Central Bank Cooperation;" Broadberry, "Monetary Interdependence and Deflation."
72. Eichengreen, "The Bank of France;" James, The German Slump.
73. An excellent recent analysis of monetary thought in official circles in the early 1930s is Clarke, Keynesian Revolution.
74. On U.S. policy in the Hoover years, see Barber, From New Era to New Deal.
75. An example of this modeling approach is Friedman, Impact of Trade Destruction.

76. This still-controversial conclusion was emphasized by Kindleberger, World in Depression, and Fearon, Origins and Nature. It is also the conclusion of Eichengreen, "Political Economy of Smoot-Hawley," and Temin, Lessons from the Great Depression, among others. My own estimates suggest that, absent retaliation, Smoot-Hawley would have raised U.S. output by perhaps 5 per cent.

77. Estimates in Eichengreen, "Political Economy of Smoot-Hawley," suggest that the favorable price-level effect probably dominated the damaging interest-rate effect in the 1930s.

78. Capie, Depression and Protectionism, calculated effective rates of protection for Britain as a way of estimating the sectoral impact of the 1932 General Tariff.

79. Kitson and Solomou, Protectionism and Revival, provide some evidence for Britain that the 1932 General Tariff shifted activity in this direction.

80. Moggridge, "The 1931 Financial Crisis."

81. Eichengreen and Sachs, "Exchange Rates and Economic Recovery."

82. Eichengreen and Sachs, "Exchange Rates and Economic Recovery;" Campa, "An Extension to Latin America;" Temin, Lessons from the Great Depression.

83. This point is also emphasized by Temin and Wigmore, "The End of One Big Deflation."

84. This is the conclusion of Brown, "Fiscal Policy in the Thirties," for the U.S., Middleton, Towards the Managed Economy, for Britain, and Jonung, "The Depression in Sweden and the United States" for Sweden.

85. The only case for which the effects of rearmament on recovery have been systematically assessed is Britain. See Thomas, "Rearmament and Economic Recovery."

86. This episode is analyzed by Romer, "The Great Expansion," who arrives at essentially the same conclusions as in this paragraph.

87. Mills and Wood, "Money Substitutes." Other analyses of British experience consistent with this view are Worswick, "The Sources of Recovery;" Wright, "Britain's Inter-war Experience;" Cairncross and Eichengreen, Sterling in Decline. But the only recent study to attempt to directly estimate the impact of monetary policy on a component of aggregate demand is Broadberry, "Cheap Money," whose conclusion is that monetary policy was responsible for part but not all of the housing boom of the 1930s.

88. Jonung, "The Depression in Sweden and the United States."

References

- Akerlof, George (1972), "The Market for Lemons: Quality Uncertainty and the Market Mechanisms," Quarterly Journal of Economics LXXIV (1970), pp.488-500.
- Alston, Lee J., "Farm Foreclosures in the United States During the Interwar Period," Journal of Economic History XLIII (1983), pp.885-903.
- Azariadis, Costas, "Implicit Contracts and Underemployment Equilibria," Journal of Political Economy 83 (1975), pp.1183-1202.
- Balderston, T., "The Beginning of the Depression in Germany, 1927-30: Investment and the Capital Market," Economic History Review sec. ser. 35 (1983), pp.395-415.
- Barber, William J., From New Era to New Deal (Cambridge, 1985).
- Benjamin, Daniel and Levis Kochin, "Searching for an Explanation for Unemployment in Interwar Britain," Journal of Political Economy 87 (1979), pp.441-478.
- Bernanke, Ben, "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," American Economic Review 73 (1983), pp.257-276.
- Bernanke, Ben, "Employment, Hours and Earnings in the Depression," American Economic Review 76 (1986), pp.82-111.
- Bernanke, Ben and Harold James, "The Gold Standard, Deflation and Financial Crisis in the Great Depression: An International Comparison," in R. Glenn Hubbard (ed.), Financial Crisis (Chicago, 1991).
- Bernstein, Michael, The Great Depression: Delayed Recovery and Economic Change in America, 1929-1939 (New York, 1987).
- Borchardt, Knut, "Could and Should Germany Have Followed Great Britain in Leaving the Gold Standard?" Journal of European Economic History 13 (1984), pp.471-498.
- Borchardt, Knut, Perspectives on Modern German Economic History and Policy (Cambridge, 1991).
- Bowden, Sue M., "The Consumer Durables Revolution in England, 1932-1938: A Regional Analysis," Explorations in Economic History 25 (1988), pp.42-59.
- Broadberry, Stephen N., The British Economy Between the Wars: A Macroeconomic Survey (Oxford, 1986).
- Broadberry, Stephen N., "Cheap Money and the Housing Boom in Interwar Britain: An Econometric Appraisal," Manchester School 55 (1987), pp.378-391.
- Broadberry, Stephen N., "Monetary Interdependence and Deflation in Britain and the United States between the Wars," in Marcus Miller, Barry Eichengreen and Richard Portes (eds), Blueprints for Exchange Rate Management (New York, 1989).

Brown, E. Cary, "Fiscal Policies in the 1930s: A Reappraisal," American Economic Review 46 (1956), pp.857-879.

Cagan, Philip, "Changes in the Recession Behavior of Wholesale Prices in the 1920s and Post-World War II," Explorations in Economic Research 2 (1975), pp.54-104.

Cairncross, Alec and Barry Eichengreen, Sterling in Decline (Oxford, 1983).

Campa, Jose Manuel, "Exchange Rates and Economic Recovery in the 1930s: An Extension to Latin America," Journal of Economic History L (1990), pp.677-682.

Capie, Forrest, Depression and Protectionism (Allen & Unwin, 1983).

Carter, Susan and Richard Sutch, "The Labor Market in the 1890s: Evidence from Connecticut Manufacturing," in Eric Aerts and Barry Eichengreen (eds), Unemployment and Underemployment in Historical Perspective (Leuven, 1990), pp.15-24.

Cecchetti, Stephen G., "Prices During the Great Depression: Was the Deflation of 1930-32 Really Unanticipated?" National Bureau of Economic Research Working Paper no. 3174 (1989).

Choudri, E. and L. Kochin, "The Exchange Rate and the International Transmission of Business Cycle Disturbances," Journal of Money, Credit and Banking 12 (1981), pp.565-574.

Clarke, Peter, The Keynesian Revolution in the Making (Oxford, 1988).

Cohen, Daniel, "How to Evaluate the Solvency of an Indebted Nation," Economic Policy 1 (1985), pp.139-157.

Cooper, Russell and Andrew John, "Coordinating Coordination Failures in Keynesian Models," Quarterly Journal of Economics CIII (1988), pp.441-460.

Corbett, David, "Unemployment Insurance and Induced Search in Interwar Germany," in Barry Eichengreen (ed.), Unemployment and Underemployment in Historical Perspective (Leuven, 1990), pp.76-87.

Corbett, David, "Wage Woes in Weimar? A Partial Investigation," paper presented to the McGill University Conference on the History of Labor Markets (February 1991).

Crafts, N.F.R., "Long-Term Unemployment and the Wage Equation in Britain, 1925-39," Economica 56, pp.247-254.

Dimsdale, N.H., S.J. Nickell and N. Horsewood, "Real Wages and Unemployment in Britain During the 1930s," Economic Journal 99 (1989), pp.271-292.

Dixit, Avinash, "Hysteresis, Import Penetration and Exchange Rate Passthrough," Quarterly Journal of Economics CIV (1989), pp.205-228.

Dornbusch, Rudiger, F. Sturzenegger and H. Wolf, "Extreme Inflation: Dynamics

and Stabilization," mimeo, Massachusetts Institute of Technology, 1990.

Eichengreen, Barry, "Central Bank Cooperation Under the Interwar Gold Standard," Explorations in Economic History 21 (1986), pp.64-87.

Eichengreen, Barry, "The Bank of France and the Sterilization of Gold, 1926-32," Explorations in Economic History 23 (1986), pp.53-84.

Eichengreen, Barry, "Unemployment in Interwar Britain: Dole or Doldrums?" Oxford Economic Papers 39 (1987), pp.597-623.

Eichengreen, Barry, "The Political Economy of the Smoot-Hawley Tariff," Research in Economic History 12 (1989), pp.1-44.

Eichengreen, Barry, "International Monetary Instability Between the Wars: Structural Flaws or Misguided Policies?" in Yoshio Suzuki, Junichi Miyake and Mitsuaki Okabe (eds), The Evolution of the International Monetary System (Tokyo, 1990), pp.71-116.

Eichengreen, Barry, "Relaxing the External Constraint: Europe in the 1930s," in George Alogoskoufis, Lucas Papademos and Richard Portes (eds), The External Constraint in Europe (Cambridge, 1991).

Eichengreen, Barry, "Credibility and Cooperation Under the Gold Standard," Kinyu Journal 3 (1990), pp.40-46.

Eichengreen, Barry, Golden Fetters: The Gold Standard and the Great Depression, 1919-1939 (New York, 1991).

Eichengreen, Barry, "Trends and Cycles in Foreign Lending," in Horst Seibert (ed.), Capital Flows in the World Economy (Kiel, 1991).

Eichengreen, Barry and T.J. Hatton, "Interwar Unemployment in International Perspective: An Overview," in Barry Eichengreen and T.J. Hatton (eds), Interwar Unemployment in International Perspective (Dordrecht, the Netherlands, 1988), pp.1-50.

Eichengreen, Barry and Jeffrey Sachs, "Exchange Rates and Economic Recovery in the 1930s," Journal of Economic History XLV (1985), pp.925-946.

Eichengreen, Barry and Marc Uzan, "The 1933 World Economic Conference as an Instance of Failed International Cooperation," in Robert Putnam et al., Diplomacy and Domestic Politics (forthcoming).

Eichengreen, Barry, Mark Watson and Richard Grossman, "Bank Rate Policy Under the Interwar Gold Standard: A Dynamic Probit Model," Economic Journal 95 (1985), pp.725-745.

Fearon, Peter, The Origins and Nature of the Great Slump, 1929-1932 (Atlantic Highlands, New Jersey, 1979).

Field, Alexander, "Asset Exchanges and the Transactions Demand for Money, 1919-29," American Economic Review 74 (1984), pp.43-59.

Field, Alexander, "A New Interpretation of the Onset of the Great Depression," Journal of Economic History 44 (1984), pp.489-498.

Flesig, Heywood, Long-Term Capital Flows and the Great Depression (New York, 1975).

Friedman, Milton and Anna J. Schwartz, A Monetary History of the United States, 1867-1960 (Princeton, 1963).

Friedman, Philip, The Impact of Trade Destruction on National Incomes: A Study of Europe, 1924-1938 (Gainesville, Florida, 1974).

Gordon, Robert J., "Why U.S. Wage and Employment Behaviour Differs from that in Britain and Japan," Economic Journal 92 (1982), pp.13-44.

Grossman, Richard, "The Shoe that Didn't Drop: Why Were There no Bank Failures in Britain in 1931?" unpublished manuscript, Harvard University (1987).

Hamilton, James, "Monetary Factors in the Great Depression," Journal of Monetary Economics 13 (1987), pp.1-25.

Hamilton, James, "Role of the International Gold Standard in Propagating the Great Depression," Contemporary Policy Issues 6 (1988), pp.67-87.

Hamilton, James, "Was the Deflation During the Great Depression Anticipated? Evidence from the Commodity Futures Market," unpublished manuscript, University of Virginia (1989).

Hatton, T.J., "The British Labor Market in the 1920s: A Test of the Search-Turnover Approach," Explorations in Economic History 22 (1985), pp.257-270.

Hatton, T.J., "Institutional Change and Wage Rigidity in the U.K., 1880-1985," Oxford Review of Economic Policy 4 (1988), pp.74-86.

Haubrich, Joseph G., "Nonmonetary Effects of Financial Crises: Lessons from the Great Depression in Canada," Journal of Monetary Economics 25 (1990), pp.223-252.

James, Harold, The German Slump (Oxford, 1986).

Jackson, Julian, The Politics of Depression in France, 1932-1936 (Cambridge, 1985).

Jonung, Lars, "The Depression in Sweden and the United States: A Comparison," in Karl Brunner (ed.), The Great Depression Revisited (Boston, 1981), pp.286-315.

Keynes, J.M., The General Theory of Employment, Interest and Money (London: Macmillan, 1936).

Kindleberger, Charles P. (1973), The World in Depression, 1929-1939 (Berkeley, 1973).

Kitson, Martin and Solomos Solomou, Protectionism and Revival: The British

Inter-War Economy (Cambridge, 1990).

Klug, Adam, "The Theory and Practice of Reparations and American Loans to Germany, 1925-29," Working Paper in International Economics no. G-90-03, International Finance Section, Department of Economics, Princeton University, 1990.

Lebergott, Stanley, Manpower in Economic Growth (New York: McGraw Hill, 1964).

Lindbeck, A. and D. Snower, The Insider-Outsider Theory of Employment and Unemployment (Cambridge, Mass., 1988).

Lindert, Peter, Key Currencies and Gold, 1900-1913, Princeton Studies in International Finance no. 24 (Princeton: 1969).

Matthews, R.C.O., C. Feinstein and J. Odling-Smee, British Economic Growth, 1865-1973 (Stanford, 1982).

Middleton, Roger, Towards the Managed Economy (London, 1985).

Mills, T.C. and G.E. Wood, "Money Substitutes and Monetary Policy in the U.K., 1922-1974," European Economic Review 10 (1977), pp.19-36.

Mishkin, Frederic S., "The Household Balance Sheet and the Great Depression," Journal of Economic History 38 (1978), pp.918-937.

Moggridge, Donald, "The 1931 Financial Crisis -- A New View," The Banker (1971), pp.832-839.

Moure, Kenneth, "The Bank of France and the Gold Standard, 1928-1936," Proceedings of the Annual Meeting of the Western Society for French History 17 (1990), pp.459-468.

Nelson, Daniel B., "Was the Deflation of 1929-30 Anticipated? The Monetary Regime as Viewed by the Business Press," unpublished manuscript, University of Chicago (1990).

Newell, Andrew and James Symons, "The Macroeconomics of the Interwar Years: International Comparisons," in Barry Eichengreen and T.J. Hatton (eds), Interwar Unemployment in International Perspective (Dordrecht, the Netherlands, 1988), pp.61-96.

Olney, Martha, "Credit as a Production-Smoothing Device: The Case of Automobiles, 1913-1938," Journal of Economic History XLIX (1989), pp.377-392.

Olney, Martha, "Consumer Durables in the Interwar Years: New Estimates, New Patterns," Research in Economic History 12, pp.119-150.

Olney, Martha, "Demand for Consumer Durable Goods in 20th Century America," Explorations in Economic History 27 (1990), pp.322-349.

Olney, Martha, Buy Now, Pay Later: Advertising, Credit and Consumer Durables in the 1920s (Chapel Hill, 1991).

- Raff, Daniel, "Wage Determination Theory and the Five Dollar Day at Ford," Journal of Economic History XLVIII (1988), pp.387-400.
- Rappoport, Peter and Eugene White, "Was there a Bubble in the 1929 Stock Market?" unpublished manuscript, Rutgers University (1991).
- Redmond, John, "The Sterling Overvaluation in 1925: A Multilateral Approach," Economic History Review, sec. ser. 37 (1984), pp.520-532.
- Romer, Christina, "The Great Crash and the Onset of the Great Depression," Quarterly Journal of Economics CV (1990), pp.597-624.
- Romer, Christina, "The Great Expansion," unpublished manuscript, University of California at Berkeley.
- Sachs, Jeffrey, "The Changing Cyclical Behavior of Wages and Prices, 1890-1976," American Economic Review 70 (1980), pp.78-90.
- Sachs, Jeffrey, "The Current Account and Macroeconomic Adjustment in the 1970s," Brookings Papers on Economic Activity 1 (1981), pp.201-268.
- Santoni, Gary J. and Gerald P. Dwyer, "Bubbles or Fundamentals: New Evidence from the Great Bull Markets," in Eugene White (ed.), Panics and Crashes: The Lessons from History (New York, 1990), pp.188-210.
- Schuker, Stephen A., "American 'Reparations' to Germany, 1919-33: Implications for the Third World Debt Crisis," Princeton Studies in International Finance no. 61 (Princeton, 1988).
- Schwartz, Anna J., "Understanding 1929-1931," in Karl Brunner (ed.), The Great Depression Revisited (Boston, 1981), pp.5-48.
- Sirkin, G., "The Stock Market of 1929 Revisited: A Note," Business History Review LXIX (1975), pp.223-231.
- Steindl, Josef, Maturity and Stagnation in American Capitalism (New York, 1979).
- Svennilson, I., Growth and Stagnation in the European Economy (Geneva, 1954).
- Temin, Peter, "The Beginning of the Great Depression in Germany," Economic History Review, sec. ser. 24 (1971), pp.240-248.
- Temin, Peter, Did Monetary Forces Cause the Great Depression? (New York, 1976).
- Temin, Peter, Lessons from the Great Depression (Cambridge, Mass., 1989).
- Temin, Peter and Barrie Wigmore, "The End of One Big Deflation," Explorations in Economic History 27 (1990), pp.483-502.
- Thomas, Mark, "Rearmament and Economic Recovery in the Late 1930s," Economic History Review sec. ser. 36 (1983), pp.552-579.

Thomas, Mark, "Labour Market Structure and the Nature of Unemployment in Inter-war Britain," in Barry Eichengreen and T.J. Hatton (eds), Interwar Unemployment in International Perspective (Dordrecht, the Netherlands, 1988), pp.97-148.

Thomas, Mark, "How Flexible Were Wages in Interwar Britain?" paper presented to the McGill University Conference on the History of Labor Markets (February 1991).

Thomas, Mark, "Institutional Rigidity in the British Labour Market, 1870-1939: A Comparative Perspective," in S.N. Broadberry and N.F.R. Crafts (eds), Britain in the World Economy, 1870-1939: Essays in Honour of Alec Ford (Cambridge, 1991).

Von Tunzelmann, G.N., "Structural Change and Leading Sectors in British Manufacturing, 1907-68," in Charles Kindleberger and Guido de Tella (eds), Economics in the Long View, London: Macmillan, vol. III.

Weinstein, Michael, Recovery and Redistribution Under the NIRA (Amsterdam, 1980).

White, Eugene N., "A Reinterpretation of the Banking Crisis of 1930," Journal of Economic History XLIV (1984), pp.119-138.

White, Eugene N., "When the Ticker Ran Late: The Stock Market Boom and Crash of 1929," in Eugene White (ed.), Crashes and Panics: The Lessons from History (New York, 1990), pp.143-187.

Worswick, G.D.N., "The Sources of Recovery in the U.K. in the 1930s," National Institute Economic Review 110 (1984), pp.85-93.

Wright, J.F., "Britain's Interwar Experience," in W.A. Eltis and P.J.N. Sinclair (eds), The Money Supply and the Exchange Rate (Oxford, 1981), pp.282-305.