For many people the prosperity of the 1920s ended, symbolically at least, with the stock market crash of October 1929. Just fourteen months earlier Herbert Hoover, accepting his party’s nomination for the presidency of the United States, had declared, “We in America today are nearer to the final triumph over poverty than ever before in the history of any land.” He won, carried to victory on the promise to apply business management skills and engineering efficiency to government and to put “a chicken in every pot and two cars in every garage.” When he was voted out of office just four years later, shantytowns known as Hoovervilles dotted the countryside (Figure 21.1); Chicago, the manufacturing center of the United States, had some seven hundred thousand unemployed, or about 40 percent of those who reported gainful occupations; bread lines stretched around blocks (Figure 21.2). The U. S. Army, with bayonets fixed, sabers drawn, and supported by tanks, had dispersed the so-called Bonus Army of unemployed veterans from World War I who had gathered on Anacostia Flats just outside Washington, D.C., to petition the government peacefully for redress of their grievances. Clearly something had gone dreadfully wrong. Nor was normalcy quickly restored. Indeed, it was a decade before some economic indicators had returned to the levels they had achieved in 1929. This period quickly displaced the 1890s in American historiography as the Great Depression—a time still vividly remembered by many of our parents and certainly by our grandparents. Its legacy is enshrined in so many of our political, economic, and social institutions and thought.

Despite its pervasive impact, there are few events on which there is less consensus about the issues, the data, the relevant hypotheses, or the appropriate tests than the Great Depression. Among the key questions are whether or not a different economic policy, particularly by the Federal Reserve, would have avoided the collapse and what role the international power vacuum left by World War I might have played in the worldwide crisis. The origins of the crisis are as heatedly debated as is the question of what led to eventual recovery. This chapter examines the events and explanations associated with the downturn, the period lasting until 1932 or 1933. Consideration of the recovery is deferred to Chapter 22.

Some Facts

Between 1929 and 1933 real output fell by 29 percent (Figure 21.3). It then took five years to inch back to predepression levels. Gross investment fell from about 15 percent of GNP—approximately the long-run historical average—to less than 1 percent in 1932 and 1933 and remained below the
long-term trend until World War II rearmament. Net investment (gross investment less wear and tear) was probably negative between 1932 and 1934 — that is, the capital stock of the country was allowed to shrink.

Behind these economic aggregates, however, hides the appalling toll that the depression had upon the lives of so many Americans. Millions lost their livelihoods — and eventually their self-respect. In 1929 only 3.2 percent (1.5 million persons) of the labor force was unemployed. Many, if not most, of them were in the normal process of switching jobs. By 1933 the situation had changed dramatically. Well over 10 million Americans were pounding the pavement looking for work, and another 2.2 million had make-work emergency jobs (at low pay) from state, local, and federal governments. That adds up to 21 or 25 percent of the labor force unemployed, depending on whether those employed in government make-work programs are counted among the unemployed (Figure 21.4).

Even these figures mask the true trauma of the events because they fail to measure the unequal burden of the economic collapse. Although hard numbers are difficult to come by, there is little question that urban blacks and other racial minorities living in cities were more severely affected than the population as a whole. In early 1930, before the depression's grip had re-
ally tightened, unemployment among African-Americans was similar to that among the white population—between 6 and 7 percent nationwide—but only because most of the black population lived in the South, where unemployment rates were lower (because of the relative importance of agriculture). By early 1931, in ten surveyed cities, African-American unemployment rates were at least 50 percent higher than among white workers. Among African-American females, unemployment rates were more than two and half times higher than among white females. Black men and women were fired first both because of discrimination and because a disproportionate number worked in the particularly hard-hit service sectors: household domestics, restaurant and hotel workers, and so on. Indeed, African-American unemployment rates would have been even higher but for their relative concentration in agriculture and the South.²

Then, too, the overall unemployment rate does not distinguish between the unpleasantness of a month or two out of work and the catastrophe of a year or two without work. In good times most unemployment is transitory in

nature with people finding themselves between jobs. During the depression, when unemployment remained at least double the 1929 rate for ten straight years, a large fraction of the unemployed had no reasonable prospect of ever again making a living without government aid. In retrospect, then, it is no wonder that the depression produced the most serious challenge to the established political and social order in America since the Civil War.

Early Course of Events, 1929–30

It was the stock market crash that brought the economic situation to the attention of most Americans, but this was not the first indication of impending trouble, and nothing prepared anyone for what was to follow. Nor was the crash itself all that sudden. Signs of a recession appeared in the summer of 1929, when the Federal Reserve’s index of industrial production turned
down after growing 5 percent during the first half of the year (Figure 21.5). The great British economist John Maynard Keynes and others have attributed this slowdown to an abrupt change in Federal Reserve policy begun in January 1928.

In an effort to curb stock market speculation and rising prices during the upswing of the business cycle, the Fed moved to restrict growth in the money supply by selling government bonds and raising interest rates. From 1921 through 1927 the money supply defined as currency plus bank deposits grew at an average annual rate of 4.5 percent. During 1928 and 1929, however, the rate slowed abruptly to 0.6 percent per year as the Fed sold $405 million of government bonds, raised the buying rate on banker's acceptances, and raised the discount rate from 3.5 percent to 5 percent in three steps. In August 1929 the buying rate on acceptances was lowered to help seasonal demand in trade and agriculture while the New York Fed raised its

**FIGURE 21.5**

Federal Reserve Seasonally Adjusted Index of Industrial Production

discount rate another percentage point to 6 percent to discourage further stock market speculation.

One consequence of rising interest rates was higher rates on call loans—money lent overnight and subject to daily renewal—which stood at 12 percent in March 1929, and rose to 20 percent before declining during the summer as new money poured into the market. The Standard & Poor's Composite Stock Index peaked on September 7, 1929 (Figure 21.6). During the rest of the month and on into early October the market drifted lower, falling about 10 percent, without any panic, before rallying.

Among the factors underlying the September break in the market were revelations of fraud on the London Stock Market and a sharp rise in London interest rates as the Bank of England sought to discourage an outflow of gold and maintain the gold exchange standard. At their September 24 meeting, members of the Open Market Investment Committee, the Fed's chief policy

**FIGURE 21.6**

Standard & Poor's Composite Daily Stock Price Index (1941–43 = 100)

arm, determining their open market policy for the following month, expressed concern about the fall in industrial production and signs of weakness in the stock market and authorized a modest relaxation of then-tight monetary policy by buying $25 million per week of government bonds. In early October the New York Stock Exchange rallied somewhat, rising about 8 percent. The return to higher prices led one widely respected economist, Irving Fisher of Yale University, to pronounce that the stock market stood on "what looks like a permanently high plateau" and could expect to be "a good deal higher than it is today within a few months."³ The same day his words were uttered, October 15, Standard & Poor’s index fell 3.5 percent, and selling continued in the days that followed. By Monday, October 21, volume had reached six million shares, but Fisher declared that the breaks in the market had "driven stocks down to hard rock."⁴ After a slight rally on Tuesday the market lost $4 billion on Wednesday, and brokers clogged telephone and telegraph lines with margin calls to customers to increase their down payments securing their stock holdings. For many investors it was the third such call within a few days, and many were sold out before they could reply.

Panic selling hit the market the next day, October 24: "Black Thursday." By the time the market closed, almost thirteen million shares had changed hands, overwhelming the technology of the day. At 1:00 p.m. the ticker was running an hour and a half late. Sellers no longer knew the prices received on their trades, nor would they know until 7:00 that night, when the tape recorded the last of the day's exchanges. The decline in prices might have been worse but for a conspicuous meeting of the leading bankers at the offices of J. P. Morgan & Company. Their word that they would support the market, however, was hardly unselfish and disinterested. The banks themselves had a major stake in the market quite apart from any concern they may have felt about the liquidity positions of some of their major customers.

The shock wave from Wall Street rippled around the world, precipitating crashes, first in the London exchange, then in Paris and Berlin, and eventually in Tokyo. On Friday President Hoover tried to reassure the market that the "fundamental business of the country—that is, the production and distribution of goods and services—is on a sound and prosperous basis," and prices stabilized temporarily. The market was in trouble, however. Although call loan rates had fallen, stock dividends covered only one-third of the interest on borrowed funds and the stockholder's continued willingness to hold stock bought on margin depended upon some prospect for short-term capital gains. Instead more bad economic news followed. The Fed's index of industrial production for the third quarter showed a decline, particularly in automobiles, tires, and steel production. Building contracts were also down. Nor was the news from overseas encouraging: Prices on

³ Hirst (1931): 18–19.
⁴ Ibid.: 21.
Brazil's coffee exchange had collapsed, threatening Brazil's ability to meet its foreign debt obligations.

The market opened lower and on Monday and Tuesday, October 28–29, fell 23 percent, erasing the capital gains for the entire year on a volume of more than sixteen million shares (Figure 21.7). Unlike Black Thursday, however, the stocks that fell belonged to the major corporations AT&T, U.S. Steel, and General Electric. U.S. Steel, for example, was down 17\(\frac{1}{2}\) points on Monday, and General Electric fell 47\(\frac{1}{2}\) points. Again the bankers met, but this time no action was forthcoming. Except for minor, short-lived rallies the market continued to drift lower. On November 13, 1929, AT&T, which had sold at 304 on September 3, traded at 197\(\frac{1}{4}\); General Electric traded at 168.125 down from 396\(\frac{1}{4}\), and stock in U.S. Steel, which had sold for 261\(\frac{3}{4}\), sold at 150. Prices continued to drift lower until mid-1932. Other indexes also declined. By December 1929 industrial production was only 82 percent of its June 1929 level. Residential building contracts were only 64 percent of

**FIGURE 21.7**

Change in Stock Index from Trading Day to Trading Day and Cumulative Gains
their June level. By March 1933, the economy's low point by most indexes, the index of industrial production stood at 47 percent, residential building contracts were at 8 percent, and factory employment was only 57 percent of the June 1929 levels.

Explaining the Depression

There is remarkably little unanimity among economists about the issues, explanations, or tests of the theories concerning the Great Depression. For example, writing in 1976, MIT economist Peter Temin argued that monetary forces were not the cause of the depression, which he attributes primarily to an unanticipated and unexplained decline in consumption expenditures. John Maynard Keynes in the early 1930s attributed the crisis to the impact of changes in Federal Reserve monetary policy but later, in his influential book *The General Theory of Interest, Money, and Employment* in 1936, blamed the decline upon the loss of business confidence that undermined investment spending. Nobel Laureate and University of Chicago emeritus economist Milton Friedman and his collaborator, Anna Schwartz, in *A Monetary History of the United States, 1867–1960* also emphasize the role of Federal Reserve policy and the impact of specific monetary shocks to the financial system. More recently Schwartz has emphasized nonmonetary forces as well as monetary forces in the onset of the depression. Others, now labeled "neo-Austrians"—identifying them primarily as followers of the great Austrian economist Friedrich von Hayek—also emphasize the role of monetary forces but take a view diametrically opposed to that of Friedman and Schwartz. While Friedman and Schwartz criticize the Federal Reserve for doing too little too late, the neo-Austrians argue that the Federal Reserve did too much: Its actions inhibited the free market's adjustment to a new equilibrium, intensifying and prolonging the depression. Furthermore, a large number of scholars, both at the time and more recently, have given a central role in their interpretations to international trade and finance. In short, there are many competing explanations, not all of which are mutually exclusive. For example, one can accept Temin's hypothesis of an unexpectedly large, unexplained shift in consumption expenditures as the explanation for the onset of the depression without rejecting Friedman and Schwartz's monetary explanation. Temin focuses his attention upon the events of 1929 and 1930; Friedman and Schwartz place greater emphasis upon the events from late 1930 onward.

The following sections elaborate upon these various explanations for the depression and try to present a balanced picture of the evidence. In the

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5 For example, Rothbard (1972). For earlier proponents of this argument, see Robbins (1934).
6 For example, Eichengreen (1992); Kindleberger (1986), and Lewis (1949).
final analysis, though, there are more explanations for the events than events to be explained. The Great Depression was probably the product of many different causes.

Aggregate Demand-Based Explanations

Perhaps the simplest way to look at some of the factors underlying the depression is to use a simple Keynesian formulation of the identity between aggregate supply (\(GNP\)) and aggregate demand where aggregate demand is the sum of consumption expenditures (\(C\)), investment expenditures (\(I\)), net exports (\(X-M\)), and government purchases (\(G\)):

\[
\text{aggregate supply} = \text{aggregate demand} \\
GNP = C + I + (X - M) + G \\
\Delta GNP = \text{multiplier} \times (\Delta C + \Delta I + \Delta (X - M) + \Delta G)
\]

that is to say, the change in GNP is a multiple of the changes in the spending components of aggregate demand.

Let us consider each of the possible sources of change in aggregate demand in turn.

CONSUMPTION

In 1929 consumption expenditures totaled $77.2 billion; in 1933 they totaled just $45.8 billion. Even when one allows for declining prices, real consumption expenditures declined over 23 percent to $59 billion. A variety of explanations have been offered for this decrease.

Economists have found it both convenient and plausible to model consumption as an increasing function of wealth and income where income consists of both "permanent" income (i.e., long-term income), which determines customary consumption habits given tastes, habit, prices, and so on, and "transitory" income, which consists of short-term fluctuations in income about the permanent level. They generally argue that consumption is relatively insensitive to reductions in income that are viewed as temporary but that individuals consume a relatively higher proportion of transitory increases in income to purchase luxury items.

Joseph Schumpeter, the Harvard economist perhaps best remembered for his work on business cycles, and others have suggested that the Great Depression was the result of "underconsumption"—the corollary to "overproduction"—as a result of structural changes in the American economy during the 1920s. The argument is as follows: During the 1920s labor productivity grew rapidly as a result of technological advances (many of them related to electrification) and managerial improvements, but this increase was not fully reflected in rising real wages. As a result, the ability to produce
goods outstripped the means to buy them, and a fundamental readjustment to this new reality was eventually required.

There is some evidence consistent with this hypothesis. The number of labor hours needed to produce a unit of output in manufacturing, for example, fell 40 percent during the decade, but nominal wages changed very little, and prices fell only by about 20 percent. The difference was reflected in a rise in corporate profits (which helped fuel the rise in stock prices to the extent that those prices measured the net worth of corporate assets or the present discounted value of future dividends) and an increase in the inequality in the distribution of income, which was further reinforced by the 1920s tax reforms of Secretary of the Treasury Andrew Mellon. These changes in the distribution of income favored those who saved over those who consumed. Consumption thus failed to keep pace with production, and the marginal propensity to consume may have fallen.

There are, however, many problems with the underconsumption thesis that make it a less than satisfactory explanation for events between 1929 and 1933. First, there is the question of timing. Even if one accepts all the assumptions implicit in the hypothesis, nothing explains why consumption collapsed only after 1929 in virtually every sector of the economy, well after economic downturn had begun. Second, in its most extreme form, the underconsumption hypothesis presupposes rigid prices though little in American history down to that time, nor the events of 1929-33, give much support to such a claim. Between 1929 and 1933 prices fell an average of about 25 percent, with agricultural prices falling somewhat more and manufactured goods' prices falling less rapidly. Third, the development of consumer credit for durable goods purchases did much to maintain and even build demand for "big ticket" items despite lagging current income levels.

Income for one group, farmers (who made up perhaps a quarter of the population at the time), declined particularly quickly. Farm income fell some 30 percent, from $6.2 billion in 1929 to $4.3 billion in 1930, under the combined effects of bountiful harvests (the 1930 wheat crop, for example, was 10 percent larger than the 1929 crop) and shrinking markets, particularly overseas. Farm prices collapsed. Wheat, which in 1929 had sold for $1.05 per bushel, fetched only 67 cents a bushel in 1930, and cotton prices declined 48 percent. Indeed, wheat was so cheap that many farmers substituted wheat for corn in livestock feed. As a result of this sharp decline in their income, many farmers, particularly those who had borrowed money to expand farm operations or to buy new implements such as tractors, faced a severe cash flow crisis. Moreover, their financial difficulties hurt their creditors, the nation's small rural banks, but this gets us ahead of our story. The impact of reduced farm income and consumption levels, however, was at

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least partially offset by the rise in real income purchasing power among the rest of the population as food prices dropped, making it possible for the nonfarm population to spend more money on other goods.

No such offsetting gains resulted from the loss of paper wealth from the stock market crash, which knocked billions of dollars off the market value of stocks. Between September 1929 and the start of 1930, capital losses totaled $57 billion, and between September 1929 and June 1932, when the market finally turned around, about $179 billion of value was lost on the nation's thirty-four exchanges. Perhaps half this loss occurred on the New York Stock Exchange alone (Table 21.1). How great the impact of this wealth loss—whether realized or not—was upon consumption is unclear. Two factors would suggest that the initial effect may not have been too great. First, stock ownership was quite limited despite the myth of almost universal stock speculation in the late 1920s. Only about five million people owned any stock, and perhaps five hundred thousand of these owned 75 to 85 percent of the outstanding stock. Second, the effect upon consumption depends in large part on whether the loss in wealth is viewed as permanent. On the other hand, for many Americans the bull market of the 1920s had been a symbol of unbridled economic prosperity, and its collapse must have caused them to reassess their expectations pessimistically.

The conventional wisdom today suggests that for every $1 change in net worth, consumption changes by 6 cents. If we assume that this relationship also held during the Great Depression, a third or more of the decline in consumption between September 1929 and June 1932 might be attributed to the wealth effects of the capital losses suffered on the nation's exchange. Indeed, if we suppose that monthly consumption expenditures tracked the same pattern as industrial production in 1929 (which peaked in June of that year), then capital losses from September 1929 to the end of the year should have reduced consumption by perhaps double the observed decline in consumption. Perhaps during that year consumer expenditures were temporarily buoyed by other considerations, such as the losses' being thought temporary rather than permanent. A similar but more plausible calculation for 1930 and 1931 estimates that at least one-third of the observed decline in consumption expenditure might be attributed to continued capital losses in the market. Further, perhaps a quarter of the decline in consumption between January and June 1932 might be attributed to continued losses on the stock market before the market finally turned around.

Not only did households suffer realized or paper losses in financial wealth, but the real value of their liabilities increased as prices fell and they were compelled to repay their debts with increasingly valuable (and scarce) dollars. Between 1929 and 1930, for example, the real value of household li-

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9 Ando and Modigliani (1968).
TABLE 21.1

Estimated Capital Losses on Common and Preferred Stock Held by Nonfarm Households and Their Possible Impact Upon Consumption Expenditures, September 1929–June 1932

<table>
<thead>
<tr>
<th>Date</th>
<th>Stock Prices&lt;sup&gt;a&lt;/sup&gt; (billions)</th>
<th>Change in Stock Prices&lt;sup&gt;a&lt;/sup&gt; (billions)</th>
<th>Estimated Capital Loss&lt;sup&gt;a&lt;/sup&gt; (billions)</th>
<th>Predicted Impact of Losses on Consumption&lt;sup&gt;b&lt;/sup&gt; (billion)</th>
<th>Change in Consumption Expenditures&lt;sup&gt;c&lt;/sup&gt; (billion)</th>
<th>Predicted Actual (percent) (4)/(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 1929</td>
<td>237.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1929</td>
<td>163.7</td>
<td>-74.1</td>
<td>-57.0</td>
<td>-3.42</td>
<td>-1.78</td>
<td>192</td>
</tr>
<tr>
<td>1930</td>
<td>117.0</td>
<td>-46.7</td>
<td>-44.6</td>
<td>-2.68</td>
<td>-7.34</td>
<td>37</td>
</tr>
<tr>
<td>1931</td>
<td>61.2</td>
<td>-55.8</td>
<td>-53.3</td>
<td>-3.20</td>
<td>-9.42</td>
<td>34</td>
</tr>
<tr>
<td>June 1932</td>
<td>35.9</td>
<td>-25.3</td>
<td>-24.1</td>
<td>-1.45</td>
<td>-5.94</td>
<td>24</td>
</tr>
<tr>
<td>Cumulative</td>
<td>-201.9</td>
<td>-179.0</td>
<td>-10.74</td>
<td>-24.48</td>
<td></td>
<td>44</td>
</tr>
</tbody>
</table>


<sup>b</sup>Estimated capital loss * 0.06.

abilities—loans to buy stocks, mortgages, consumer credit, and so on—increased by 20 percent. As a result, the balance sheet for the average American household took a dramatic turn for the worse with declining net worth and an increasing debt burden, placing households in increasingly unfavorable liquidity positions and discouraging expenditures on durable goods and large-ticket illiquid assets such as houses.\footnote{Mishkin (1978).}

When the recession began, few, if any, recognized that it would become the longest and most severe depression in American history. As a result, although unemployment more than doubled between 1929 and 1930, rising from 3.2 percent to 8.7 percent of the labor force, it probably had relatively little effect upon current consumption patterns since consumers viewed it as a purely transitory loss of expected income. At some point the realization began to sink in that the income loss might be more permanent, and spending habits were drastically revised. Such a change in perceptions may well account for the inexplicably large drop in consumption that Temin finds in 1930. However, it is not clear why consumers should have so quickly rejected recent experience such as the depression of 1920–21 as their best model for the situation in which they found themselves, particularly since most economists at the time confidently predicted that recovery was just around the corner.

The unexpectedly large decline in autonomous consumption expenditures in 1930 occupies a central role in Temin’s explanation of the Great Depression. In his words “the fall in consumption was unusually large in 1929. . . . Goods that could not be sold were not produced. The fall in aggregate demand spread throughout the economy. And as the fall of 1930 wore on and business did not recover . . . businessmen lost the confidence that underlies private investment. The economy continued to decline.”\footnote{Temin (1976): 172.} Temin thus offers a Keynesian style of aggregate demand explanation for the depression, but one markedly different from that of Keynes himself, who explained the event in terms of the collapse of business confidence underlying gross private domestic investment.

GROSS PRIVATE DOMESTIC INVESTMENT

Keynes was among the first economists to assign an important role to investment in the downturn. He wrote: “I attribute the slump of 1930 primarily to the deterrent effects on investment of the long period of clear money which preceded the collapse itself. But the collapse having occurred, it greatly aggravated matters, especially in the United States, by causing a disinvestment in working capital.”\footnote{Keynes (1930): II, 196.} By the time he was writing his \textit{General Theory}, however, he had modified this view to the notion that the marginal efficiency
of investment curve (then called the marginal efficiency of capital) had shifted in toward the origin because of the volume of prior investment, which had averaged 16 percent of GNP during much of the 1920s.\textsuperscript{13}

During the 1923–33 downswing, however, not only did gross investment fall, but the period was actually characterized by disinvestment. Not only was excess capacity mothballed, but total capacity was reduced as businesses opted not to replace the wear and tear on what investment was kept in operation (Table 21.2). Indeed, the changes in investment during the early years of the depression are of such magnitude that they can plausibly explain the entire change in aggregate demand between 1929 and 1933—just as the Keynesians argue.

Investment, however, had begun to decline well before the onset of the depression, having peaked in 1926. Much of the change in investment spending in both the 1920s and the 1930s can be traced to variations in construction activity, particularly residential construction. The housing industry, in particular, had boomed in the mid-twenties. In each of the years between 1924 and 1927 the ratio of real residential construction to GNP was

\begin{table}
\centering
\caption{Gross Private Domestic Investment and Its Components \hfill \textit{1929–1939} \hfill \textit{($\text{\$ billions}$)}
\begin{tabular}{lcccc}
\hline
\textbf{Date} & \textbf{Gross Private Domestic Investment} & \textbf{Change in GPDI} & \textbf{Net Change in Inventories} & \textbf{Residential Construction} & \textbf{Net Private Domestic Investment} \\
\hline
1929  & 16.2 & & 1.7 & 4.0 & 8.7 \\
1930  & 10.3 & -5.9 & -0.4 & 2.3 & 2.8 \\
1931  & 5.6 & -4.7 & -1.1 & 1.7 & -1.3 \\
1932  & 1.0 & -4.6 & -2.5 & 0.7 & -5.1 \\
1933  & 1.4 & 0.4 & -1.6 & 0.6 & -4.3 \\
1934  & 3.3 & 1.9 & -0.7 & 0.9 & -2.5 \\
1935  & 6.4 & 3.1 & 1.1 & 1.2 & 0.6 \\
1936  & 8.5 & 2.1 & 1.3 & 1.6 & 2.6 \\
1937  & 11.8 & 3.3 & 2.5 & 1.9 & 5.3 \\
1938  & 6.5 & -5.3 & -0.9 & 2.0 & -0.1 \\
1939  & 9.3 & 2.8 & 0.4 & 2.9 & 2.8 \\
\hline
\end{tabular}
\end{table}


\textsuperscript{13} See also Hansen (1951) and Gordon (1974).
at record levels—in excess of 8 percent of GNP—and it represented about half of gross private domestic investment. That level, however, could not be sustained or justified, and by 1929 residential construction was less than half its mid-decade peak. In part the decrease stemmed from declining demand for housing. Population growth was slowing down as fewer families were formed and fewer immigrants landed on these shores. Indeed, it has been estimated that the demographic slump of the 1920s and 1930s can account for about 28 percent of the decline in housing starts by 1933 and 39 percent by 1940. Hence it is doubtful whether the level of building activity could have been maintained in the face of demographic forces. Moreover, even if household growth had continued at its level of the early 1920s and income had been maintained, predicted housing starts would still have fallen by 35 percent between 1925 and 1930. The actual decline in housing starts was 65 percent. Allowing for the reduced rate of household formation over the period raises the predicted decline in housing starts to 49 percent. America’s builders overbuilt but the deflationary economic impact of the decline in residential construction was delayed and disguised by the buoyancy of consumer expenditure and stock-market speculative fever until these collapsed in 1930.

NET EXPORTS

In 1928 net exports were at their highest level since 1921; American imported goods were valued at $4 billion, and exported goods worth $5 billion. As a result, foreign trade injected $1 billion into the circular flow of income in 1928. Net exports generally declined thereafter and reached their nadir in 1936, when exports exceeded imports by a mere $33 million on a trade volume that was less than half that of 1928–29.

In 1929 America exported more than in 1928, but net exports declined because of the rapid growth of imports brought about by the boom conditions and domestic industry’s inability to satisfy demand. The increase in exports, however, disguised a weakening of demand for American products from some major trading partners, particularly in western Europe. The economic downturn began early in western Europe, limiting its demand for American exports. Moreover, Europeans’ ability to purchase imports was compromised by their international payments difficulties. Great Britain, for example, in 1925, had returned to the gold standard at the prewar parity level, which overvalued the pound sterling by 10 percent or so. As a result, British exports were too expensive to be very attractive to foreign customers while imports in Britain competed vigorously with domestic products. Nonetheless, Britain remained a source of long-term foreign investment, fi-

14 Hickman (1973).
nancing it and the British trade deficit by short-term borrowing. Britain’s ability to do this depended upon low interest rates in New York making London’s relatively more attractive. The rise in American interest rates beginning in 1928, however, compromised Britain’s ability to continue this policy. Similarly, Germany’s ability to maintain a high rate of domestic investment, to purchase imports, and to meet the reparation payments depended upon American willingness to lend money to Germany. But the well ran dry in 1928, as the boom on Wall Street eclipsed the returns to be made on foreign loans. Nor was the Fed willing to allow international capital flows into the United States to determine the American price level as required under a true gold standard. Instead the Fed deliberately tried to neutralize the effects of gold inflows through the sale of government bonds to mop up the surplus funds. This policy forced the entire burden of adjustment upon the debtor countries—particularly Britain and Germany but also much of Latin America and Asia—and they eventually broke under the strain. The result, as in the title of Charles Kindleberger’s book, was a world in depression.

The other force affecting foreign trade was a renewed spirit of economic nationalism. Initial agitation for tariff protection came from the ailing U.S. farm sector, but as the Smoot-Hawley Tariff legislation moved through the House and the Senate, its coverage was widened, and the level of protection increased. The duty on raw sugar from Cuba was, for example, raised from 1.76 cents a pound to 2 cents a pound, which exceeded the difference in costs of production between Cuban cane sugar and western beet sugar. The duty on wheat was raised from 32 cents a bushel to 40 cents, to the disadvantage of Canada. In manufacturing the duty on cotton textiles was raised from 40.27 percent to 46.42 percent, notwithstanding the fact that the current troubles in the industry were the result of competition between New England and southern mills rather than between domestic and foreign. As a result of the new legislation, average ad valorem rates on dutiable imports rose from 25.9 percent over the period 1921–25 to 50.02 percent between 1931 and 1935. A contemporary British economist at the time described ratification of the tariff as “a turning point in world history,” for it brought with it the collapse of the international gold standard. Primary product prices were driven down, and primary producers, such as Australia and Argentina, were the first to be forced to abandon the gold standard. For the United States it brought temporary relief, but at a very high price. The U.S. balance of payments shifted from deficit to surplus, the stock of monetary gold increased, the trade balance did not decline very much, and prices in the United States fell less in 1930 than in other countries. Not until the following year did prices in the United States fall faster than those abroad.

Retaliation by other countries to the Smoot-Hawley Tariff followed al-

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16 Meltzer (1976).
most immediately upon its adoption\(^{17}\) and brought with it the collapse of world trade (Figure 21.8). American exports fell faster than imports as the rest of the world jockeyed for a competitive edge via tariffs or other trade restrictions. Whereas in 1929 U.S. net exports had amounted to $842 million, by 1933 they were only $225 million on about one-third of the pre-tariff war, predepression levels of trade. These declines are, however, modest by comparison with the changes in consumption and investment expenditures that have already been discussed.

GOVERNMENT PURCHASE OF GOODS AND SERVICES

A Keynesian would find little to fault in federal government actions in 1929, 1930, and 1931, except perhaps that the policy was not pursued with sufficient vigor to overcome the decline in the other autonomous spending components. The year 1929—a year of full employment despite the ominous signs—found the federal budget in surplus; receipts exceeded disbursements by $1.3 billion. Indeed, during the fiscal year (July 1, 1929–June 30, 1930) the national debt was reduced by $746 million. It was not to decrease again until 1947. After 1929, however, rather than depress aggregate demand, government spending offset some of the decline in consumption, gross domestic private investment, and net exports. For example, in January 1930 President Hoover submitted requests for increased public works expenditures—$500 million for public buildings, $150 million for rivers and harbors, $75 million for roads, and $60 million to start work on the Boulder Dam—and a $160 million income tax decrease. During 1930 new public construction (in 1929 constant dollars) amounted to $2.8 billion, an increase of 22 percent over the 1929 level. The fiscal year ended with a $1 billion deficit, much to the embarrassment of Treasury Secretary Mellon, who as late as December 1930 had predicted a deficit no greater than $180 million. Much of the deficit was met by borrowing, and the public debt increased by $616 million. Outlays were one-third higher than they had been during fiscal 1930, but individual and corporate income taxes, the principal sources of revenue, were down 23 percent—in part a result of the tax cut.

The deficit increased in fiscal 1932 to $2.7 billion as receipts slumped to less than half their level of fiscal 1930 and expenditures soared. With the passage of a massive tax increase on June 6, 1932, however, federal government policy changed from being countercyclical—whether by accident or design—to procyclical. This ultimately played a role in converting what was by then a most severe depression into the Great Depression. Note, though, that government fiscal policy from the Keynesian perspective of aggregate demand played no role in the onset of the depression itself or its intensification before the finale of the contraction in late 1932, by which time there were some small signs of recovery in the reversal of the declining stock market

\(^{17}\) Jones (1934).
FIGURE 21.8

The Contracting Spiral of World Trade, January 1929–March 1933:
Total Imports of 75 Countries (Monthly Values in Terms of Old
U.S. Gold Dollars [millions])

and an easing in the free fall in prices, industrial production, and factory employment.

Monetarist Explanations for the Great Depression

Just as there are a variety of aggregate demand explanations of the Great Depression, such as Temin’s emphasis upon an unexplained decline in autonomous consumption expenditure and Keynes’s explanation in terms of the loss of business confidence causing a collapse in investment expenditure, there are divergent monetarist explanations. One, advanced by Milton Friedman and Anna Schwartz, blames the Federal Reserve for not doing enough to ease the liquidity crisis among the nation’s banks. Another, championed by followers of Hayek, also blames the Fed, but instead of being blamed for doing too little, the Fed is criticized for intervening and thus interrupting the economy’s readjustment to a new equilibrium.

THE FRIEDMAN-SCHWARTZ VIEW

Friedman and Schwartz devote nearly one-sixth of their Monetary History of the United States 1867–1960 to the analysis of the four-year period 1929–33, but they give virtually no consideration to the factors that produced the initial downturn in 1929. More recently, Anna Schwartz has clarified their position: “The period 1929–33 began as a cyclical contraction much like others, this time in response to the immoderate concern of the Federal Reserve Board about speculation in the Stock Market.” This concern led the Federal Reserve to curtail the rate of growth of the money supply through the sale of bonds and, by raising the discount rate, to discourage member bank borrowing. As a result, the money supply (defined as currency plus checking and time deposits, otherwise known as M2 money), which had grown by 3.8 percent from 1927 to 1928, grew by only 0.4 percent from 1928 to 1929. Indeed, between April 1928 and November 1929 (when the Federal Reserve entered the market to supply liquidity in the wake of the stock market crash) the money supply fell at a rate of more than 1 percent per year. To the extent that this sudden reversal of policy was unanticipated, it may have been sufficient to precipitate the pause in business activity in the summer of 1929. This view of the origins of the depression is surprisingly close to that first articulated by Keynes early in the Great Depression.

Once the depression had begun, however, Friedman and Schwartz argue, it was made much worse by a series of serious exogenous monetary shocks that disrupted the financial markets and impeded the functioning of the “real” economy. These were further compounded by the failure of the Fed to deal adequately with, or respond appropriately to, either the shocks themselves or the consequences that followed from them. As a result, Friedman and Schwartz describe the contraction as “a tragic testimonial to
the importance of monetary forces. . . . [D]ifferent and feasible actions by the monetary authorities could have prevented the decline in the stock of money [and such action] would have reduced the contraction's severity and almost certainly its duration."^{18}

**MONETARY SHOCKS**

Friedman and Schwartz identify five separate financial shocks to the system: the stock market crash, October 1929; the first banking crisis, October 1930–February 1931; the second banking crisis, March 1931–August 1931; Britain's abandonment of the gold standard, September 1931; and the final banking crisis, October 1932–March 1933. Following each monetary shock, bank failures soared, and public confidence in the banking system—represented by the ratio of bank deposits to currency held by the public—declined. Despite increases in the quantity of high-powered money, the stock of money declined, especially in the months following Britain's abandonment of the gold standard. The sections that follow take up each of the shocks in turn.

*The Great Crash (October 1929)*

In his book *The Great Crash* John Kenneth Galbraith explains the stock market crash of October 1929 as the inevitable consequence of financial innovations and changes in how the unregulated market operated. The major financial innovation was the investment trust. This had originated in Great Britain as a device to pool the monies of many small investors who in the normal way might not have been able to buy stock in even one company. Those monies were then used to purchase a large diversified portfolio of stocks, spreading risk and bringing to the small investor the benefits of diversification enjoyed by the large investor. As investment funds evolved in Britain, they were what we would today call mutual funds. In America, however, new wrinkles were added to this form by the aggressive use of margin buying to multiply the stock held and by selling a large amount of fixed interest bonds relative to common stock. This increased financial leverage but at the cost of increased volatility. The bondholders were promised a fixed interest payment and given first claim on the trust assets in the event of default. The equity holders, on the other hand, stood to benefit from any capital gains on the full value of the portfolio even though most of the funds used to buy the portfolio were borrowed. The United States and Foreign Securities Corporation, set up in 1924 by the investment bankers Dillon, Read & Company, was one such investment trust. It issued three classes of stock: first preferred, second preferred, and common. Dividends on the preferred

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^18 Friedman and Schwartz (1963): 300–01.
stock were limited to 6 percent—1 to 2 percent above the rate on corporate, municipal, state, or U.S. government bonds. The first preferred was sold to the public for $25 million, and the lucky purchasers received as a reward an allocation of one-fourth of the common stock (which initially had a negative value). Dillon, Read retained the remaining common stock and the second preferred with an investment of $5 million. In 1928, after meeting the interest obligations to the preferred stockholders, this trust had a cash surplus of $10 million, and at one time its common stock sold for $72 a share. It is estimated that the final return to Dillon, Read on its investment of $5 million was on the order of $50 to $60 million. An even more spectacular example was the American Founders Group, begun in 1922 with an investment of $500, yet by 1929 holding more than $1 billion in securities. In 1921 there were 40 investment trusts in America; by 1929 there were more than 750.

Turning to changes in how the financial markets operated, Galbraith cites increased buying on low margins as the main culprit, since it provided additional financial leverage. In the unregulated market of the 1920s credit-worthy customers could buy stock with as little as 10 percent down (though 20 percent was perhaps more typical), borrowing the balance from their brokers with the stocks themselves serving as collateral for the loan. Since the dividends alone typically exceeded the rate on margin loans from the brokers, margin borrowing made sense so long as the market was expected to remain stable or increase in value. For example, in 1927 the broker loan rate averaged 4.35 percent, while corporate dividends averaged 4.77 percent. Investors were, in effect, being paid to take a market risk. Moreover, this market risk paid off handsomely for many years. In the twelve months of 1927, for example, the fortunate purchaser of a “representative market portfolio” reaped a capital gain of almost 30 percent, while in 1928 the value of a similar portfolio rose by more than 30 percent. Indeed, even as late as the beginning of 1929, with the market up over 20 percent for the year, substantial gains were to be made although the gradual rise in margin requirements beginning in October 1928 dampened investor leverage. Such capital gains, though substantial, have been equaled or surpassed by modern-day success stories such as Fidelity’s Magellan Fund. The real difference lies in the ability to buy on low margin and capture the capital gains on the entire value of the portfolio.

The growing demand for credit to buy stocks pulled new funds into the market. This brought about a major reallocation of credit. Corporate treasurers, for example, discovered that call money loans were far more lucrative for short-term surplus funds than the corporate bank account or buying short-term bonds. Thus, nonbank loans to brokers increased from $550 mil-

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19 Pecora (1938).
20 Galbraith (1972).
lion in 1924 (about 25 percent of the total loan volume) to $3.885 million in 1928 (60 percent of the total), and according to Galbraith, Standard Oil of New Jersey in 1929 averaged $69 million per day in call money loans to brokers, while Electric Bond and Share averaged $100 million. This high volume of nonbank loans to the market helped frustrate Federal Reserve efforts to limit market speculation.

There is considerable debate about whether the rise in stock prices during the 1920s was justified or represented a speculative bubble. Evidence suggests that until the start of the second quarter of 1928, stock prices rose more or less in line with rising dividends, and only from about March or April 1928 is there a marked divergence between dividends—which continued to increase—and stock prices—which soared (Figure 21.9). This period then may mark the onset of a speculative bubble, destined sooner or later to "pop."

But what was the pin that burst the bubble? No single explanation seems to suffice. Rather, a number of factors—all occurring more or less together—cumulatively served to deflate the speculative mania. Adverse eco-

![Figure 21.9](image-url)

**Figure 21.9**

Stock Price and Dividend Indexes

nomic news began to appear in August 1929: Industrial production had peaked and was falling. The tight monetary policy instituted by the Federal Reserve in 1928 began to bite in 1929, raising the cost of borrowing and making it less profitable to bear the market risks on margin purchases. Market experts also became increasingly pessimistic. For example, on the day the Standard & Poor’s stock index peaked, September 7, 1929, the Commercial and Financial Chronicle carried a speech by the well-known stock guru Roger Babson before the annual National Business Conference in which he warned that “sooner or later a crash is coming and it may be terrific . . . factories will shut down . . . men will be thrown out of work . . . the vicious circle will get in full swing and the result will be a serious business depression.” In addition, a number of people have linked the price break on the stock market to the abrupt revision of investor expectations about the future profitability of major U.S. exporters if the Smoot-Hawley Tariff passed and provoked the expected retaliatory response from the rest of the world.22

The First Banking Crisis (October 1930–February 1931)

Friedman and Schwartz assign a special significance to this first banking crisis in the contraction of the 1930s, arguing that “the monetary character of the contraction changed dramatically. . . . A contagion of fear spread among depositors, starting from the agricultural areas. . . . But such contagion knows no geographic limits”23 as the public lost confidence in the banking system and converted bank deposits into currency. Research by Eugene White confirms the importance of both real (for example, the agricultural crisis) and monetary factors (such as the condition of a bank’s balance sheet) in contributing to the crisis, although little distinguishes 1930 as a whole from other years in the late 1920s. Until October 1930 deposits in suspended banks were no higher than levels during the 1920s. In November, though, deposits in suspended banks were more than double any previously recorded monthly peak. They doubled again in December. Federal Reserve data list 256 banks as failing in November. In December 328 banks failed, among them a large New York City bank, the Bank of United States, which failed on December 11 with more than $200 million in deposits.24 At the time it was the largest bank ever to have failed. Moreover, Friedman and Schwartz claim that its unusual name led many to assume an official connection. As a result, the failure was of “especial importance”—to use Friedman and Schwartz’s own words—and has been the subject of a heated debate.

In a lengthy footnote to their book Friedman and Schwartz describe the

23 Friedman and Schwartz (1963): 308.
24 Use of the definite article in the bank’s title was not allowed by the banking authorities so as to avoid confusion with the First or Second Banks of the United States (see Chapter 4).
various attempts by the New York superintendent of banks, Joseph A. Broderick, and the New York Federal Reserve Bank to organize a rescue of the Bank of United States by the clearinghouse banks, but these plans all collapsed, and the bank failed. Broderick was later indicted by a New York grand jury for neglect of duty, his first trial ended in mistrial, his second in acquittal. Friedman and Schwartz’s position is that the bank should not have failed because it was fundamentally sound. As evidence, they cite its eventual repayment of little over 83 cents on the dollar to its depositors despite the fire sale price of the bank’s assets in the depths of the depression. Instead they explain the failure as the result of a colossal miscalculation by all parties (particularly the Federal Reserve) and suggest that anti-Semitism by J. P. Morgan, Jr., of the firm of J. P. Morgan & Company—a key player in the New York Clearinghouse—may have played a role in the failure of the rescue efforts since the Bank of United States was a Jewish-owned bank serving customers in New York’s garment district.

Both Peter Temin and Joseph Lucia take exception to Friedman and Schwartz’s characterization of the Bank of United States as a sound bank. Following the death of the bank’s founder, Joseph S. Marcus, in late 1928 his son, Bernard Marcus, succeeded to the presidency of the bank and launched an ambitious expansion program that took the bank from $6 million in capital and six branches to $25 million in capital and fifty-nine branches by the time it failed. Along the way the bank invested heavily in relatively illiquid real estate loans. Whereas the average New York City bank had about 12 percent of total loans in real estate, the Bank of United States had 45 percent. When bank examiners made their report on the financial condition of the bank in mid-1930, they noted that nonperforming, impaired, and questionable loans exceeded the bank’s surplus and undistributed profits. As the financial condition of the bank weakened in a weakening market, the bank tried to disguise the true nature of its portfolio by exchanging real estate loans for short-term debt with its holding company affiliates. As a result of this attempted deception, Marcus and two other bank officers were eventually convicted of fraud and jailed. It is not too surprising, then, that given this financial picture, the clearinghouse banks might be less than enthusiastic about taking over the “assets” of the bank. Moreover, the Bank of United States had pledged to maintain the price of its stock. This proved a serious drain upon the bank’s cash as it struggled to maintain price on a falling market. Lastly, even if depositors did eventually receive 83 cents on the dollar, this was worth considerably less than that sum since the final distribution was not made until 1944. If the payouts are discounted back to 1930 at the prevailing annual rate on Aaa bonds (a low discount rate), the present discounted value of the payments was only about 76 cents on the dollar.

Despite the prominent role given to the Bank of United States by Friedman and Schwartz, Elmus Wicker argues that the initial cause of the banking crisis was the failure of Caldwell and Company, a Nashville-based holding company for the South’s largest chain of banks with assets in excess
of $200 million. Caldwell had controlling interests in insurance companies, manufacturing plants, publishing enterprises, and investment trusts as well as banks with combined assets of about $500 million. But it was in a precarious financial position when the depression hit, with only a small cushion of liquid assets relative to notes payable and deposits. Withdrawals quickly eliminated this reserve, and Caldwell was insolvent—that is, unable to liquidate assets quickly enough to meet claims against it. Within two weeks of the failure of Caldwell and Company, more than 120 banks in four states (70 of them in Arkansas alone), almost all of them affiliated with Caldwell, suspended payments. For example, depositors withdrew $4 million of $15 million on deposit with the American Exchange Trust before it suspended payments. Indeed, the entire banking crisis may have originated in the failure of Caldwell and Company. Of 256 bank failures in November 1930, 141 occurred in the St. Louis Federal Reserve District, and 20 in the Richmond District—the areas in which Caldwell operated. These same two districts recorded 159 of the 328 bank failures in December 1930. In contrast, while no banks failed in the Boston, New York, or Philadelphia regions in November, Boston recorded 5 failures in December, and there were only 6 each in the other two districts, lending support to the proposition that Caldwell and Company, rather than depressed conditions in general and the failure of the Bank of United States in particular, was responsible for many of the bank failures during the first banking crisis.

The Second Banking Crisis (March 1931–August 1931)

Friedman and Schwartz give no reason why public confidence in banks eroded further in March 1931, but the public renewed its conversion of deposits into currency, and banks for their part sold assets both to meet this demand and to build up excess reserves. In early May, however, the revelation of unexpectedly large losses by the Creditanstalt, the largest private bank in Austria, led to a run against the bank that the government tried to stem. But the bank failed anyway, and the Austrian government was itself forced to borrow money to meet the demand for conversion of Austrian shillings into gold, ultimately exhausting its credit. The Bank for International Settlements arranged credits from the largest central banks, including the Reichsbank, the Federal Reserve, and the Bank of England. Each subsequently came under selling pressure against its own currency.

The international crisis deepened in the wake of President Hoover’s moratorium on intergovernmental debt repayment and pressure on commercial banks not to seek repayment of short-term credits, the revelation that the Reichsbank’s reserve ratio had fallen below 40 percent, and massive commercial losses by the Danatbank in Germany. Given the large-scale foreign lending by America’s banks in the 1920s, particularly to Germany, this news generated considerable concern about the financial security of many of America’s largest banks.
Indeed, a number of authors, particularly Charles Kindleberger and Barry Eichengreen, see the Great Depression primarily as an international crisis caused by the breakdown of international financial relations. The breakdown was created by the enormous debt burden from World War I and by the failure of various countries to play the game by the rules of the classical gold or gold-exchange standard. What Barry Eichengreen has termed the "golden fetters" of the international gold standard imposed burdens upon both debtor and creditor countries: Debtor countries were supposed to experience a declining money supply, diminished economic activity, falling prices, and rising export demand while in creditor countries the money supply was supposed to grow, economic activity accelerate, prices rise, and imports increase until equilibrium was restored at the fixed exchange rates. These fixed exchange rates thus played a key role in the international transmission of shocks, and international factors played a major role in the last three of the five monetary shocks that Friedman and Schwartz identify.

Britain's Abandonment of the Gold Standard (September 1931)

Britain, which had returned to the gold standard in 1925 at its prewar exchange rate—a rate that overvalued the pound sterling by perhaps 10 percent—was particularly vulnerable to an external drain of gold as foreigners redeemed pounds for gold. Britain had been able to maintain this position only at the expense of domestic growth and by short-term borrowing. On September 21, 1931, the British government yielded to the inevitable and suspended convertibility of the pound into gold following a massive run on sterling precipitated in part by the Bank of France. Pressure then switched from the pound sterling to the dollar. Between September 16 and the end of the month, the U.S. gold stock declined by $275 million; it fell another $450 million in October, offsetting all inflows during the preceding two years. Nor was this lack of confidence entirely mistaken. The secretary of the treasury, Ogden Mills, later commented that the United States was within two or three weeks of being forced off the gold standard. By the end of September nine countries, including most of Scandinavia and Canada—areas with close trading ties to Britain—had also left gold, and others were to follow. According to Eichengreen, at the height of the gold standard in 1931, forty-seven countries had currencies defined in terms of a fixed quantity of gold; by the end of 1932 the only major countries still on gold were Belgium, France, Italy, the Netherlands, Poland, Switzerland, and the United States. The loss of so many members from the gold standard club contributed to general uncertainty about the continued commitment of the

20 New evidence by Pierre Sicsic now casts doubt upon any key role played by the Bank of France.
rest to stick with the gold standard—or their ability to do so. Moreover, short-term currency risk and uncertainty generated by floating exchange rates only further disrupted world trade.

The loss of external confidence in the dollar intensified domestic concern about the safety of the nation’s banks, which was reinforced by the Federal Reserve’s reaction to the external drain—the sharpest increase in the rediscount rate in the system’s history—further reducing the value of bank assets and making it much more expensive for banks to borrow from the Fed. In October 1931, 522 banks closed, and in the six-month period from August 1931, 1,860 banks with deposits totaling almost $1.5 trillion suspended operations.

*The Final Banking Crisis (October 1932–March 1933)*

Friedman and Schwartz describe the final banking crisis as beginning in the last quarter of 1932, particularly in the Midwest and Far West, but widening in scope and increasing in volume in January 1933, as more states suspended state banking operations within their borders. Nevada was the first on October 31, 1932. Iowa was next on January 20, 1933, followed by Louisiana and Michigan. By March 3 about half the states had declared bank holidays. Bank holidays, however, hardly increased depositor confidence in banks; instead they increased pressure upon those that remained open. Recognizing this, in February Congress relieved the nation’s national banks of their obligation to remain open in states that had declared bank holidays, adding to speculative runs against those banks unfortunate enough to remain open. New York City banks, in particular, experienced massive withdrawals, losing, for example, $760 million during February.

Friedman and Schwartz are a little vague in providing an immediate cause for this final banking crisis other than to ascribe it to the loss of domestic confidence in the nation’s banks and the Federal Reserve’s failure to create sufficient liquidity through open market purchases to meet that demand. One factor precipitating this loss of confidence (besides the all-too-recent history of bank failures) was the naming of banks that had received emergency loans from the Reconstruction Finance Corporation (RFC). This was prima facie evidence of weakness.

More recently, however, a growing number of scholars have emphasized the central role played by the gold standard in the final banking crisis. The advantage of this explanation is that it not only explains the panic leading up to the nationwide bank holiday of March 6, 1933, but also explains the calm that followed.

Doubts about America’s willingness and ability to continue to exchange dollars for gold had been growing, certainly since Britain left the gold standard in September 1931, if not before. Passage of the Glass-Steagall Act in

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26 For example, Barry Eichengreen, Charles Kindleberger, Peter Temin, and Barrie Wigmore.
February 1932 had further weakened the credibility of America’s commitment to gold by allowing government bonds to serve as collateral for Federal Reserve notes. More damaging, though, to both domestic and international confidence were word that President-elect Roosevelt had held numerous meetings at which devaluation was discussed and his refusal to give firm assurances that the United States would meet all of its obligations in gold. Even President Hoover added to these concerns with a speech in Des Moines on October 4, 1932, in which he described how close the United States had come to leaving gold the previous year. It is therefore hardly surprising that holders of dollars at home and abroad should doubt the ability and willingness of government to maintain-convertibility of the dollar into gold at the rate of $20.67 per troy ounce of gold and seek to convert those dollars for gold.

From the beginning of February to early March 1933 the Federal Reserve of New York lost 61 percent of its gold holdings and, by March 3, had on hand only $381 million in gold while the Bank of England had more than $240 million in dollar assets that it wished to reduce because of growing exchange rate uncertainty. Moreover, foreign deposits in the city’s banks exceeded $600 million. As the Federal Reserve of New York board minutes for March 3 were to record, “we could not pay out gold and currency much longer at the rate of the past few days.” Fortunately the New York Fed did not have to. On Saturday, March 4, 1933—inauguration day—New York joined the list of states with bank holidays, and on Monday morning, March 6, 1933, President Roosevelt invoked the Trading with the Enemy Act to suspend all banking operations in the United States for a four-day period. Before the banks reopened, regulations went into effect requiring member banks to relinquish all gold and gold certificates to the Federal Reserve and supply lists of all persons who had withdrawn gold or gold certificates, since February 1 and prohibiting the export of gold and dealing in foreign exchange. One month later individuals were prohibited from holding gold or gold certificates, and the price of gold was gradually raised to $35 per ounce, effectively devaluing the dollar by almost 70 percent against gold and by smaller amounts against foreign currency, where the “official” price of gold stayed until 1971.

THE ROLE OF BANK FAILURES

Bank failures play a pivotal role in Friedman and Schwartz’s explanation of the cause of the Great Depression and its unique nature. The public lost confidence in the ability of the banking system to repay deposits upon demand and chose to substitute currency for deposits. The failure of one bank had a domino effect, spreading what Friedman and Schwartz describe as a “contagion of fear.” The resulting uncertainty caused runs on other banks, which failed in turn. The money supply contracted as legal tender went to satisfy the public’s demand for currency rather than serve as bank reserves
and support an expansion of bank credit and money. Between 1930 and 1933 more than nine thousand banks closed—more than a third of all banks in the United States at the end of 1929 (Figure 21.10).

Part of Temin's case against Friedman and Schwartz's argument is based upon work he did estimating the supply of money as a function of interest rates, bank reserves, and the percentage of total deposits in suspended banks. His estimates suggest that while bank failures might have decreased the supply of money, the statistical importance was small. However, Temin is at pains to make clear that this does not constitute a definitive test and grounds for dismissing their hypothesis. As Figure 21.10 makes clear, the bank failure rate was low in the 1920s, high between 1930 and 1933, and essentially zero thereafter. It is therefore not too surprising that this general lack of variation fails to "explain" (statistically) the year-to-year variations in the supply of money. Moreover, there is a statistical risk that one might reject as "false" a hypothesis that is "true." Indeed, if one were to ignore statistical significance testing altogether and simply ask, "How large was the effect of

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**FIGURE 21.10**

Bank Failures and the Bank Failure Rate 1920–1939

bank failures on the supply of money?" then by Temin's own estimate, bank failures could have accounted for the entire change in the stock of money.

THE AUSTRIAN VIEW

Although the Austrian view (so named after the Austrian economist Hayek) is not strictly a monetarist interpretation since it places emphasis upon the "real" business cycle, it makes sense to include it under this general heading since the Austrian view, like Friedman and Schwartz, blames the Federal Reserve for the depression but for precisely the opposite reason. Instead of monetary policy's being too tight, the Austrians, or "liquidationists," argued that monetary policy was in fact too easy and that by intervening in the market, the Federal Reserve disrupted and prolonged economic adjustment to a new equilibrium. Such beliefs were widely held at the time and have received renewed attention in recent years. President Hoover, for example, complained bitterly that Secretary of the Treasury Andrew Mellon's only advice was to "[l]iquidate labor, liquidate stocks, liquidate the farmers, liquidate real estate, liquidate banks, liquidate businesses," whereas Hoover's natural inclination (despite his being a Republican), as an engineer and a successful post-World War I European relief administrator, was to intervene. Others in positions of power shared Mellon's views—for example, Adolph Miller, a member of the Federal Reserve Board, George Norris, governor of the Federal Reserve of Philadelphia, and Lynn Talley of the Dallas Fed. Indeed, Norris vigorously criticized Fed interference "with the operation of the natural law of supply and demand in the money market."

Early in the depression Hayek argued that "the present crisis is marked by the first attempt on a large scale to revive the economy . . . by a systematic policy of lowering the interest rate accompanied by all other possible measures for preventing the normal process of liquidation, and that as a result the depression has assumed more devastating forms and lasted longer than ever before [Emphasis added]." 27 Unanswered in this condemnation of government interference, however, is the question of whether intervention might be justified in the face of panic that threatens the sound banks and businesses as well as the unsound.

THE DEBATE OVER FEDERAL RESERVE POLICY

Friedman and Schwartz describe Federal Reserve monetary policy taken as a whole during the contraction as "inept." In their view, the monetary system was allowed to collapse when different policies, already well known to Fed officials, who had used them successfully during the 1920s, could have saved it. Open market operations to buy U.S. government debt and put dollars into circulation were often too little and too late. For example, during the second banking crisis in 1931, the Fed limited purchases to just $130 mil-

lion—little more than it had bought in the first two days following the stock market crash—at a time when hundreds of the nation’s banks were failing (Table 21.3), and it did nothing to generate new liquidity during the final crisis of 1932–33. At other times, such as when Britain left gold and at the beginning of March 1933, the Federal Reserve actually pursued a “tight” monetary policy, raising the cost of borrowing. Yet when no crisis demanded its urgent and immediate attention, as in the first half of 1932, the Fed entered the market vigorously, buying more than $1 billion in government bonds.

Over the period as a whole the Fed added $1.8 billion to the stock of currency. Perhaps two-thirds of this went to satisfy the public’s increased taste for legal tender rather than serve as new bank reserves. And much of that which did go into bank reserves simply provided a cushion for the banks that survived—“excess reserves”—rather than support new loans and deposits.

Friedman and Schwartz attribute much of the Fed’s policy failure to the death in 1928 of Benjamin Strong, the governor of the Federal Reserve Bank of New York and pioneer of open market operations, which left the Fed leaderless at a crucial juncture: “If Strong had still been alive and head of the New York Bank in the fall of 1930, he would very likely have recognized the oncoming liquidity crisis for what it was, would have been prepared by experience and conviction to take strenuous and appropriate measure to head it

<table>
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<th>Date</th>
<th>Open Market Operations</th>
<th>Discount Rate</th>
<th>Critical Events</th>
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<tr>
<td>Oct. 1929</td>
<td>Bought $120 m</td>
<td>6% 1/4 2% in New York 5% 1/4 3-3 1/2% elsewhere</td>
<td>Stock market crash</td>
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<td>Nov. 1929-</td>
<td></td>
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<tr>
<td>Dec 1930</td>
<td>Bought $440 m</td>
<td>—</td>
<td>First banking crisis</td>
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<td>Jan. 1931-</td>
<td></td>
<td></td>
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<tr>
<td>Aug. 1931</td>
<td>Bought $130 m</td>
<td>2-3 1/2% 1/4 1 1/2-3%</td>
<td>Second banking crisis</td>
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<tr>
<td>Oct. 1931-</td>
<td></td>
<td></td>
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<tr>
<td>Nov. 1931</td>
<td>—</td>
<td>RAISED 1 1/2-3% 1/4 3 1/2-4%</td>
<td>Britain leaves gold standard</td>
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<tr>
<td>Jan. 1932-</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Aug. 1932</td>
<td>Bought $1.110 m</td>
<td>4-3 1/2% 1/4 3 1/2-2 1/2</td>
<td>No crisis (Glass-Steagall Act)</td>
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<tr>
<td>March 1933</td>
<td>—</td>
<td>RAISED 2 1/2 1/4 3 1/2</td>
<td>Final banking crisis (end)</td>
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</tbody>
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off, and would have had the standing to carry the system with him.” As a result, Friedman and Schwartz argue, there was a policy shift within the Federal Reserve away from a countercyclical monetary policy and away from a policy of isolating the domestic economy from the ebb and flow of gold across national borders. However, there is sufficient ambiguity in Strong’s statements and policies during the 1920s to make it difficult to infer conclusively how he would have acted if faced by the crises of 1929–33. Although he offset gold inflows in 1922 and 1923 by selling government debt and raising the discount rate, Strong might not have felt able to counter the outflow in October and November 1931 by open market purchases and reductions in the discount rate. Indeed, David Wheelock finds little empirical evidence of a policy shift by the Federal Reserve even though it held far fewer government securities during the early 1930s than one would predict on the basis of Fed behavior in the 1920s. He explains this apparent contradiction by emphasizing that the Federal Reserve, both during Strong’s tenure and after his death, used member bank borrowing as the key indicator of monetary ease or tightness. If member banks were borrowing, money was “tight”; if they were not borrowing, money was easy. During the early 1930s member banks did little borrowing; therefore, concluded the Fed, money was easy.

While Friedman and Schwartz characterize the Fed’s policy as inept, Federal Reserve policy is entirely consistent with the Fed’s having multiple goals that were sometimes contradictory. In particular, if we accept the proposition that the Fed saw defense of the gold standard as its principal charge and serving as lender in last resort to the banking system as subordinate to that, then all incongruities in the Fed’s behavior disappear. So long as the Fed had “free gold”—that is, gold above and beyond that which it believed necessary to give credibility to its promise to redeem Federal Reserve dollars for gold upon demand—the Fed stood ready and willing to supply additional liquidity to the system. However, when the Fed faced an outflow of gold as in October and November 1931 and again in early 1933, it felt obliged instead not only to act to conserve what gold it had rather than create new obligations against gold but also to endeavor to attract additional gold to these shores by offering higher interest rates. Friedman and Schwartz dismiss this “free gold” argument, but it forms a central theme in Eichengreen’s recent study. Moreover, such a commitment is consistent with Fed behavior from its founding to its being relieved of that obligation in 1933.

Gerald Epstein and Thomas Ferguson have analyzed the motivation and timing behind the Federal Reserve’s massive open market operation in 1932. They argue that the Federal Reserve had deliberately delayed inter-

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29 See, for example, Wheelock (1989, 1991).
vening much earlier, say, in 1930 or early 1931, because the liquidationist view of the business cycle was dominant among its officials but that intervention was further delayed by the lack of "free gold" during the last quarter of 1931, when rising interest rates drove down bond prices and threatened the solvency of many banks. In this interpretation, support of the bond market was thus a major goal of the 1932 open market operation. The policy succeeded in driving down interest rates; indeed, the policy may have succeeded too well, driving short-term Treasury rates under 1 percent and jeopardizing bank earnings. As a result, the Fed faced increasing pressure to halt purchases, especially when the sharp increase in dollar claims against gold began to threaten convertibility.

An alternative, public choice interpretation of Federal Reserve behavior during the contraction holds that rent-seeking member banks seized the opportunity to rid themselves of their troublesome nonmember competitors. Some circumstantial evidence supports this argument: More than 75 percent of the banks failing between 1929 and 1933 were nonmember. Moreover, the Fed had argued since its inception that the dual system was unworkable. But this hardly constitutes proof. First, the failure rate among member banks during the depression was much higher than it had been during the 1920s. Of banks failing in 1931 and 1932, 23 percent were members of the system, and in the final wave of banking failures member banks made up 32 percent of the total, whereas in the 1920s member banks made up less than 20 percent of the failing banks. Second, instead of implementing this policy (if such it was) directly through capture of the Fed, the pressure came through the House and Senate Banking committees since states with representatives on these committees had higher rates of nonmember bank failures although why representatives and senators should have been more responsive to the pressure of member banks than the much more numerous nonmember banks is not clear. Third, it is not clear how the Fed selectively targeted nonmember banks. Lastly, the alleged ulterior motive—increased bank profits (the "rent" that the member banks were supposedly seeking)—failed to materialize. Share prices of the large New York member banks declined relative to other price indexes and was unaffected by changes in the money supply.  

Concluding Remarks

As was pointed out at the outset, there is no single tidy, universally accepted explanation for the economic decline between 1929 and 1933. Recovery began with Roosevelt's inauguration on March 4. Indeed, some indexes—

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51 Santoni and Van Cott (1990).
notably the stock market index—turned around in mid-1932 shortly after Roosevelt’s selection as the Democratic candidate for president and in anticipation of a new administration. The question, however, is how much of this recovery was attributable to the specific policies put in place during the Roosevelt administrations, especially those embodied in the New Deal, and it is to that task that we now turn.

Appendix: The Hicks-Hansen Synthesis of Income Equilibrium Models

The two principal hypotheses for the sharp economic decline between 1929 and 1933—spending and monetary—can best be understood with the help of the graphical synthesis first offered by John Hicks and Alvin Hansen. The Hicks-Hansen, or IS-LM, synthesis applies equally well to Keynesian and monetarist views of macroeconomic relationships and events. We develop the bare bones of the Hicks-Hansen model and then show how spending and monetary explanations of the depression fit.

Hicks-Hansen focuses in turn on the conditions for income equilibrium requiring (1) that intended investment equal intended savings and (2) that the desired quantity of money assets held by the private sector equal the amount of money actually available. First, consider the investment-savings (IS) equilibrium condition. As Figure 21.A1 suggests, the amount of investment spending is related to interest rates on loans. The lower the interest rate, the higher the rate of investment.

Figure 21.A2 shows the relationship between savings and income: The more income people have, the more they wish to save. Now, in order for national income to be in equilibrium, it is necessary that the amount investors wish to invest equals the amount of income left over after income recipients decide how much they wish to consume. Hence Figures 21.A1 and 21.A2 indirectly reveal what interest rate (and therefore investment rate) is consistent with what level of national income (and therefore savings rate). The so-called IS relationship is shown in Figure 21.A3. It slopes downward because high interest rates mean little investment and thus a low equilibrium level of income.

Now consider the other condition that must be met if national income is to be in equilibrium. The demand for money is determined by both the level of business activity and interest rates. The more business, the more money individuals and firms think they must hold to meet day-to-day expenses. By the same token, the higher the interest rate on securities, the more income they give up by holding their assets as non-interest-bearing money. The higher interest rates are, the greater the motive to pare down non-interest-bearing cash balances.

Suppose the supply of money is fixed independently; it is usually a con-
FIGURE 21.A1
The Relationship between Investment and Interest Rates and Savings and GNP

FIGURE 21.A2

FIGURE 21.A3
The Investment-Savings (IS) Relationship
convenient simplification to think of the Federal Reserve as controlling the money supply completely. Suppose, too, that at current income and interest rates there is just enough money to go around to satisfy cash holders. The only way this fixed quantity of money will be able to accommodate a higher income (and higher rate of business transactions) is for interest rates to go up. This will give cash holders an incentive to economize by switching into interest-bearing securities and freeing the cash for use by others. Hence, for a fixed money supply, higher interest rates will be consistent with a higher level of national income. The so-called LM relationship is shown in Figure 21.A4.

Only one point, the intersection of the IS and LM curves, satisfies both equilibrium conditions, and thus the intersection represents the equilibrium interest rate and income for the economy. Note that expansionary fiscal policy works to increase equilibrium income by lowering the amount of private investment needed to support a given level of income. Increased government expenditures or reduced taxes tend to shift the IS curve to the right. Equilibrium income goes up, and interest rates rise to accommodate the LM side of the system (see Figure 21.A5).

Expansionary monetary policy works by increasing the quantity of

![FIGURE 21.A4](image)

**Equilibrium in the IS-LM Model**
money available for cash users, thereby raising the level of national income supportable at any given interest rate. All other factors being equal, an increase in the supply of money raises equilibrium income. But it also lowers equilibrium interest rates, as investors must be given an incentive to invest more (see Figure 21.A5).

Now we are ready to see how the depression theories may be classified. Spending theories, in one form or another, translate into backward shifts of the IS curve:

- Reduced investment opportunities, resulting from the saturation of the housing or auto markets, mean that investors will invest less at any given interest rate; thus a lower rate of interest will be needed to equilibrate the same level of investment and savings.

- A stock market crash reduces the wealth of individuals and makes them more conservative consumers. This means that savings will be higher at any given level of income, and investment will have to be higher also to use up the economic resources left over after desired consumption rates. The higher investment level will be attainable only at lower interest rates; thus the backward shift in the IS curve. The

**FIGURE 21.A5**

Monetary and Fiscal Policy in the IS-LM Model
stock market crash could also reflect changing expectations about the profitability of corporate investment. Analytically, this would have the same effect on the IS curve as housing market saturation or any other perceived reduction in investment opportunity.

Monetary theories, on the other hand, work by shifting the LM curve to the left:

- Bank failures reduce confidence in the banking system, leading depositors to turn their funds into currency and leading banks to call in loans. Both actions reduce the money supply and thus make it necessary to have a higher level of interest rates to keep money holders satisfied with their balances at a given level of income—that is, the LM curve shifts backward.

- If one wishes to emphasize the role of the Federal Reserve, the same basic analysis applies. The Fed can prevent the money supply from shrinking by compensatory open market operations, trading Fed cash for publicly held government securities. Or it can lend reserves to the banks directly, encouraging them to borrow from the Fed by charging a low "rediscout" rate on Fed-to-bank loans and then putting the borrowed reserves to work in business loans. The Fed's failure to do either may have allowed destabilizing forces to contract the money supply, shifting back the LM curve and lowering equilibrium income.

Does the Hicks-Hansen synthesis provide a means of choosing between spending and monetary hypotheses? Yes and no. Yes, because of the difference in the predicted effect of each on interest rates. A reduction in aggregate demand shifting the IS curve to the left should lower interest rates, while an autonomous contraction in the money supply should raise interest rates. Temin's research supports the spending side since he finds that interest rates fell sharply in 1930.

No, because the test is not definitive. The Hicks-Hansen structure is too simple to accommodate the complexities of the real world. As noted in the text, real interest rates are not observable because they depend upon private expectations of future price changes. There is not a single interest rate to measure, moreover, but a whole series of interest rates that may not move together. Hence the somewhat contorted monetarist explanation that falling interest rates on some securities may not reflect the scarcity of loanable funds. In short, the Hicks-Hansen synthesis can only be used on the first step in analyzing the macroeconomics of the depression. And as Peter Temin explains in great detail, the subsequent steps are exceedingly difficult to make.
Bibliography

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