

The Great Depression, 1929–1939

The Pre–New Deal Phase

My mother brought us to Newark in January 1931. The stock market had collapsed fifteen months earlier, but though business was bad, Washington people who understood these things did not seem alarmed. President Hoover refused to use the scare word “recession” when speaking about the slump. It was merely “a depression,” he said. Nothing to panic about. Good times were just around the corner.

—Russell Baker¹

The Great Depression that began in mid-1929 lasted twelve years to mid-1941, for it was not until then that the rearmament program induced enough spending to drive the economy to full employment and output levels. The path from 1929 to 1939 involved a deep descent to 1933, a partial recovery to 1937, a relapse to 1938, and then the final recovery leading into the war years. By 1939 the German attack on Poland that started World War II brought a changed international climate that materially altered the economic situation and outlook; the economy began its conversion to a wartime basis.

Concatenation of Events on the Way Down

America was totally unprepared philosophically, politically, financially, and administratively to cope with the massive unemployment, loss of incomes, and poverty that came with the great depression.

—Lester V. Chandler²

For almost four years—from the cyclical peak in the summer of 1929 to the trough in the winter and early spring of 1933—the U.S. economy plunged into the Great Depression. From the *ex ante* view of people living at the time, not knowing what was coming next, there was no reason to expect a calamity. Economic activity had its ups and downs; like inclement weather,

recession was to be expected occasionally, at least until such time in the future when the art of central banking might be so perfected as to abolish the business cycle from the capitalist system. But there was no reason in 1929 or 1930 to expect that the decline in output would become progressively worse until finally real net national product had fallen by more than one-third, unemployment was a quarter of the labor force, and the banking system had collapsed. Policymakers were unprepared for the series of shocks that overwhelmed them; the system could not withstand the strain placed upon it, and attempts to cope with the problem were ineffective. As we trace the sequence of developments, we may vicariously experience the economic equivalent of a trip down the Potomac River by a canoeist who gets into some white water. Expecting a brief passage through moderate rapids, he finds himself out of control as he passes through the Great Falls of the Potomac.

The stock market crashed in October 1929, with panic conditions during the week of October 23–29. At the time, the economy was already declining quite rapidly from the cyclical peak reached in August. As early as March, the number of building contracts awarded was falling fast; automobile production fell drastically after March, and so did industrial production as a whole after June. Clearly the stock market crash did not trigger the onset of the economic slump. It would be wrong, however, to slight its significance. On the one hand it was a response to the reduction in business activity; a decline in output and prices meant lower prospective earnings and therefore the market value of stocks fell, the more so because of the previous rosy expectations. Much more important, by its psychological impact on expectations of businessmen and the general public, and by the reduction of the value of financial assets, it discouraged spending for investment and consumer goods. By constraining spending for output and stimulating the demand for money balances instead, it contributed to the contraction. The economy was stumbling, and the stock market crash gave it a strong shove on its way down.

During the early part of 1930 the economy showed some resilience. Industrial production and employment leveled off—stock prices rose temporarily from their earlier lows—and President Hoover on May Day stated that he thought the worst was over.³ The sun had come out only briefly; output fell rapidly for the rest of the year, with a particularly steep drop in industrial production. From 1929 to 1930 real income fell by 11 percent. By October 1930, one year after the stock market crash, the economic system was jolted once again as a wave of bank failures swept across the country.

Failures were endemic in our banking system, of course—during 1921–1929 some 5,700 banks had failed, an average of about 635 per year—but in 1930 the number of failures was 1,350, with the bulk of them coming in the fall of the year. In November the dollar value of deposits in suspended

banks reached a height far above the highest previous amount since monthly data began to be kept in 1921. Clusters of bank failures in several states spread alarm over a wide area of the country, leading to the withdrawal of currency from banks by depositors on a large scale. The contagion, while greatest among small nonmember banks, spread to member banks and in December brought down the Bank of United States in New York City, the largest commercial bank ever to have failed in our national history up to that time. Its name may have misled people to think it was a "government" bank rather than an ordinary bank. It was a notable failure, not only because of its large size but also because the private clearinghouse banks in New York rejected the efforts of the Federal Reserve Bank of New York to arrange a joint support operation to save it. As the public withdrew currency (reserves) from the banks, the banks reacted by shoring up their own liquidity positions. For the first time since 1907 a liquidity crisis gripped the financial system. The Federal Reserve System had been devised to prevent banking panics, and until now had been thought capable of doing so.

Early in 1931 the banking crisis abated; banks ceased their efforts to become more liquid, giving hope that the aberration was temporary and had spent itself. Data measuring economic activity for the first few months of 1931, like those of 1930, gave reason to think that the slide in economic activity was being arrested and a turnaround imminent. Industrial production in April was actually higher than in January. It was again a false dawn; in March a second banking panic began as the public converted large amounts of deposits into currency, and then in reflex action the banks liquidated assets to meet claims for payment and build up excess reserves. A further blow to the financial structure came as a result of Britain's departure from the gold standard on September 21, 1931. The gold standard, after having been restored gradually during the twenties, was in process of collapse during the early thirties, with 1931 the year of disaster for the system. Financial panic in Europe culminated in a run on sterling, and after Britain was forced to abandon convertibility into gold, the U.S. dollar came under pressure. Europeans, including central bankers, fearing that the United States might follow Britain in abandoning the gold standard, sold dollar assets to obtain gold. Thus the American banking system suffered heavy losses of reserves from both an external drain as gold was withdrawn and an internal drain as currency was withdrawn. Bank failures in 1931 numbered 2,293, involving deposits of \$1.7 billion, twice the amount for 1930. The decrease in the money stock was much greater than in 1930.

The second wave of bank failures subsided after January 1932, and for the year 1932 "only" 1,453 banks failed, or 840 fewer than in 1931. The improvement was temporary—much worse was to come in 1933. Several constructive steps were taken by the federal government in 1932 to buttress the financial structure. In January the Reconstruction Finance Corporation

(RFC) was authorized, given some direct federal financing, and empowered to borrow much more on the basis of federal government guarantee. It made loans primarily to banks and other financial institutions, and some to various other borrowers also. By the time the Roosevelt administration came into office in March 1933, it had provided \$1.4 billion to financial institutions. By providing liquidity it helped to stem the tide of liquidation. Like a fire department called late to the scene of the fire, it was able to rescue some beleaguered inhabitants, but did not prevent further collapse of the structure. In February 1932 the Glass-Steagall Act was passed, enabling the Federal Reserve System to be more expansive in its monetary policy, a point developed in a later section. In July a system of twelve regional Federal Home Loan Banks was established. With funds from the federal government and from private institutions that became members of the Home Loan Bank System, the banks could lend on home mortgages to savings and loan associations, insurance companies, and others. The amount of lending that resulted was very small relative to the need. For a short time in the summer of 1932, the indicators of general economic activity again promised better things to come as the rate of slide of personal income and employment slowed, and industrial production registered more than just a blip upward for a couple of months. But for the year as a whole the economy sank much further into the abyss. Real income fell by 18 percent from 1931 to 1932, twice the rate of fall from 1930 to 1931. The value of stocks on the New York Stock Exchange had fallen in the three years since the crash of 1929 from \$90 billion to \$15 billion. We may note that in June 1932 federal taxes were raised, and in the presidential election of that year both incumbent Hoover and challenger Roosevelt promised a balanced budget. Like recovery, the idea of fiscal stimulus was still around the corner!

One final devastating relapse—marked by the banking panic of 1933—had yet to be endured. The familiar and dreaded sequence unfolded once more as bank failures spread across the land in the final months of 1932, becoming more numerous and involving much larger amounts of deposits as 1933 began. During this third wave of the series of banking crises that began in October 1930, for the first time statewide bank holidays were declared. The term holiday suggests a time for celebration, hardly the case at this time. Bank holidays were the means used, through legislation or executive order, to stop or limit the drainage of funds from the banks. Depositors were restricted, in whole or in part, from getting currency from the banks. The objective was to provide a time out, with the hope that when play resumed the behavior of the players would be normal. Until this time, runs on banks took the form of currency withdrawals; a new development in the early weeks of 1933 was the demand for gold coin and gold certificates rather than Federal Reserve notes or other nongold currency.

Friedman and Schwartz consider the handling of the 1929–1933 expe-

rience as inferior to that of 1907–1908. In both cases panic came to a climax with the restriction of payments by banks, but with quite different timing and effects.

In both cases, the financial climax was the restriction of payments by the banking system. But in the 1907–08 episode, the climax occurred early before the banking structure had been seriously affected and, if our analysis is correct, served to prevent widespread bank failures, to cut short a possible major deflation, and to keep the maximum decline in the stock of money to less than 8 percent. In the 1929–33 episode, the climax occurred after more than three years of dragging deflation, after bank failures had cut the number of banks by more than a quarter and after the stock of money had fallen by nearly a third, and served only to close the stable door after the horse had been stolen. Finally, the climax itself was much more severe. The 1907 restriction involved the refusal of banks to convert deposits into currency at the demand of the depositor; it did not involve, on any large scale, even the temporary closing of banks or the cessation of their financial operations, let alone the permanent failure of any substantial number.⁴

A sort of quasi interregnum existed in the federal government in the sense that the outgoing lame duck administration of Herbert Hoover remained in office but refrained from new initiatives as the country awaited the inauguration of Franklin Roosevelt on March 4, 1933. Bank holidays were widespread at this time; even the Federal Reserve Banks were closed on inauguration day. On March 6 President Roosevelt proclaimed a national bank holiday; all banks were closed, and gold redemption and gold exports were suspended. Banks were permitted to reopen if and when licensed by the appropriate banking regulatory agency during March 13–15. As the baton of national leadership passed from Hoover to Roosevelt, the economy was at its lowest point. The first quarter of 1933 marked the trough of the depression—the contraction had gone on for 43 months from August 1929 to March 1933.

The Money Stock, Interest Rates, and Monetary Policy

The main fact concerning the money stock is that it fell drastically from August 1929 to March 1933, by 28 percent for the M1 definition and by 35 percent for the M2 definition. (M1, the “narrow definition,” consists of currency and commercial bank demand deposits; M2 adds commercial bank time deposits). The rate at which money was spent also fell, by about the same magnitudes as for the stock of money. Between 1929 and 1933 velocity fell by 36 percent for the M1 definition of money and by 29 percent for the M2 definition. Money stock and velocity data are shown in Table 4–1.

While the money stock fell continuously from 1929 to 1933, the rate of

Table 4-1
Money Stock and Velocity of Money, 1929, 1933

<i>Money Stock</i>	<i>August 1929</i>	<i>March 1933</i>
M1	\$26.5 billion	\$19.1 billion
M2	\$46.3 billion	\$30.0 billion
<i>Velocity^a</i>	<i>1929</i>	<i>1933</i>
M1	3.42	2.19
M2	1.95	1.38

Adapted from Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States 1867-1960*, a study by the National Bureau of Economic Research. Princeton: Princeton University Press, 1963, pp. 712-713, 774.

^aVelocity refers to money income divided by the money stock.

decline varied greatly over time. Using the M1 definition, the decline from September 1929, just before the stock market crash, to September 1930, the month before the first banking crisis started, was just over 5 percent. In this early stage of the depression, depositors had not yet come to distrust the banks. Over the next six months the money stock declined only marginally, despite numerous bank failures at the end of 1930. However, for the year beginning with the onset of the second banking crisis in March 1931 and extending through Britain's departure from the gold standard in September to March 1932, the month after the Glass-Steagall Act was adopted, the M1 money stock fell by \$3.7 billion, or by almost 15 percent. In the next year to March 1933 the final drop was close to 10 percent. In summary, the pattern was essentially that of a gradual although significant decline for the eighteen months from the fall of 1929 to the spring of 1931; then, over the last two years from March 1931 to March 1933 the reduction was remarkably steep, 23 percent.

The discount rate at the Federal Reserve Bank of New York was reduced from 6 percent to 5 percent on November 1, 1929, in response to the need for liquidity in a faltering economy. On November 15 the rate was cut to 4.5 percent. Four more "half a point" cuts during the first half of 1930 plus another in December reduced the rate to 2 percent, and then by mid-1931 it went down to 1.5 percent. In short, over the first two years of the depression the discount rate was steadily lowered until it was set at only half the previously lowest level of 3 percent. The downward trend was of course consistent with the need for monetary ease. But then, during October 1931, in the wake of the British departure from gold, the discount rate was raised by 2 percentage points within a week to 3.5 percent, a strikingly large increase. It was subsequently lowered in two steps to 2.5 percent by mid-1932 but again raised to 3.5 percent on March 3, 1933, the day before the inauguration of the new president.

In October 1929 interest rates in general began to fall. When the first

banking crisis hit in October 1930, the yields on lower-grade corporate bonds parted company from those on government bonds. As lower-grade bonds were jettisoned by holders seeking more liquidity, including banks, their market prices dropped and their yields therefore rose. For almost the next two years the yields on such securities trended upward until they reached the 10 percent-plus area in 1932. Government bonds, above suspicion of default, served well as secondary reserves for banks; their yields continued to drift downward until the fall of 1931. The second wave of bank failures that began in March reinforced the trends already in progress. However, when Britain left the gold standard in September 1931 and the Federal Reserve System reacted with a restrictive stance, interest rates in general shot up, short-term and long-term, government bond yields included. During 1932 interest rates receded considerably from their high levels in the final quarter of 1931. In early 1933 they rose once more during the final banking crisis.

During the first phase of the depression to October 1930 the monetary base declined as the money stock declined. The fall in high-powered money resulted mainly from a reduction in Federal Reserve discounts only partially compensated by a gold stock increase and Federal Reserve open-market purchases of securities. Member bank borrowing decreased sharply as discount rates fell, indicating a pronounced shift to the left in the banks' demand for loans from the Fed. Table 4-2 shows data at half-yearly intervals to demonstrate the point.

While we have noted that the discount rate at the Federal Reserve Banks fell to all-time low levels in 1930, this fact needs to be viewed in the context of market conditions. Market interest rates were also very low in 1930 as business and other private loan demand dried up and as safe short-term market instruments were demanded. Actually, while the discount rate was certainly low in comparison with past levels or by "normal standards," relative to interest yields on "riskless" short-term securities, the discount rate was not low.

The rapid fall in the money stock after 1930 occurred despite a rise in

Table 4-2
Federal Reserve Discount Rates and Bills Discounted, Selected Dates, 1929, 1930

<i>End of Month</i>	<i>Discount Rate, Federal Reserve Bank of New York</i>	<i>Holdings of Discounted Bills by Federal Reserve Banks</i>
June 1929	5%	\$1,037 million
December 1929	4½%	632 million
June 1930	2½%	272 million

Adapted from Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics*. Washington, D.C., 1943, pp. 340, 441.

the monetary base. The gold stock increased to mid-1931 before the British departure from gold in September sparked an external drain. Banks then borrowed somewhat more heavily from the Fed for some months to offset the effects of the gold drain, but the main factor raising the monetary base in 1932 was Federal Reserve Bank purchases of securities on the open market. The phenomenon of a fairly steady increase in the monetary base coincident with an unprecedented fall in the money stock over a period of some two and a half years is explained by the pathological behavior of the public and the banks in their liquid asset preferences. The behavior of individuals, businesses, and banks was rational and justified from their own viewpoints, but from the viewpoint of the economy it was abnormal and indicated a malfunctioning system. Between June 1930 and February 1933 the monetary base rose by 27 percent at the same time that M1 decreased by 21 percent. The public demanded much more currency relative to demand deposits. By February 1933 currency held by the public had risen by over 50 percent but demand deposits were 33 percent lower. Putting it a little differently, in February 1933 the public held only about \$2.50 in demand deposits for every \$1 of currency, whereas in mid-1930 almost \$6 of demand deposits were held per \$1 of currency. The banks acted to defend their positions by holding a larger fraction of reserves to deposits, some 22 percent in February 1933 compared with 15 percent in June 1930. In other words, the banks owed demand deposits of some \$4.50 for every dollar of reserves in February 1933 as against about \$6.70 in June 1930. Various shifting relationships involving bank reserves and components of the money stock are summarized in Table 4-3.

Using the expansion formula for the banking system (below), the money

Table 4-3
Bank Reserves and Money Supply: Changes in Absolute and Relative Quantities, June 1930, February 1933

	June 1930	February 1933	Change, June 1930 to February 1933
C = Currency held by public	\$ 3.7 billion	\$ 5.6 billion	+51%
D = Demand deposits	\$21.6 billion	\$14.4 billion	-33%
M1 = C + D	\$25.3 billion	\$20.0 billion	-21%
R = Bank reserves	\$ 3.2 billion	\$ 3.2 billion	—
R/D = Reserve to deposit ratio	.15	.22	+47%
C/D = Currency to deposit ratio	.17	.39	+129%
D/R = Deposit to reserve ratio	6.7	4.5	-33%
D/C = Deposit to currency ratio	5.8	2.6	-55%
MB = Monetary base	\$ 6.9 billion	\$ 8.8 billion	+27%

Adapted from Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States 1867-1960*, a study by the National Bureau of Economic Research. Princeton: Princeton University Press, 1963, tables A-1, A-2, and B-3.

stock is related to the monetary base, the reserve/deposit ratio, and the currency/deposit ratio.

$$MB \times \frac{1 + C/D}{R/D + C/D} = M1$$
$$6.9 \times \frac{1.17}{.32} = 6.9 \times 3.66 = 25.3$$
$$8.8 \times \frac{1.39}{.61} = 8.8 \times 2.27 = 20.0$$

We have noted that the Federal Reserve Bank of New York moved quickly to lower its discount rate at the time of the stock market crash. It also bought government securities. In doing so it acted on its own initiative for its own account by an amount well above the limit for purchases of securities that had been approved for the Open Market Investment Committee by the Federal Reserve Board. The New York Fed was free to act in this independent manner under the agreement of 1923 that established the Open Market Investment Committee, yet most board members, including Governor Young, considered such action as a challenge to the board. Some further tugs in the ongoing tug of war for control of policy took place between the Federal Reserve Bank of New York and the Federal Reserve Board. The board decided to make its approval of a lower discount rate contingent on the agreement by the New York Fed to refrain from further open-market purchases of securities without prior board consent. Subsequently (except briefly in early 1933) the Federal Reserve Bank of New York did not again buy government securities for its own account. It did advocate using open-market operations as well as lower discount rates to offset the decline in discounts, but had little success in persuading the Federal Reserve Board or the majority of other Federal Reserve Banks to this course of action.

In March 1930 the five-member Open Market Investment Committee was transformed into a twelve-member Open Market Policy Conference with a representative from each Federal Reserve Bank. In terms of its prominence, and its experience and expertise gained in the financial center of the country, the Federal Reserve Bank of New York was equipped to play a leading role in the conduct of monetary policy. Without the forceful Benjamin Strong's influence, however, the New York Bank failed to win support for a more expansionary policy, despite the efforts of Strong's successor, Governor George L. Harrison. Federal Reserve credit outstanding fell steadily along with the monetary base from the time of the crash until the end of 1930. The Federal Reserve Board considered its policy at this time to be one of monetary ease, but that was a highly dubious description. Throughout the period until the new situation brought about by Britain's departure from the

gold standard, the same pattern generally prevailed. Harrison, on behalf of the Federal Reserve Bank of New York urged a more expansionary policy involving substantial purchases of securities. In September 1930 Eugene Meyer succeeded Roy Young as governor of the Federal Reserve Board, and while he, like Harrison, supported a more vigorous open-market purchase policy, the two decision-making bodies, the Open Market Policy Conference and the Federal Reserve Board, successfully resisted such urgings.

When Britain severed its gold link in September 1931 and gold began leaving this country, the Federal Reserve Bank of New York, the acknowledged authority for dealing with international monetary matters, assumed the mantle of leadership. It quickly tightened credit conditions by raising the discount rate. The traditional first duty of the central bank, defense of its currency's gold value, was considered paramount, a position generally supported within the system and outside it as well. So once again, as in 1920, external stability took priority over domestic requirements. With gold outflows draining their reserves, banks found it necessary to go to the discount window in the face of steeply increased discount rates.

The system's actions constricting credit were a response to the "free gold" problem. Federal Reserve notes outstanding required a reserve of 40 percent in gold plus 60 percent collateral in eligible paper or gold. The system obtained eligible paper chiefly by lending to member banks. To meet the public's demand for currency, the Federal Reserve Banks had greatly expanded their notes outstanding; the low level of bank borrowing from the Federal Reserve Banks meant that the eligible paper on hand was insufficient to meet the 60 percent requirement, thus requiring that gold be pledged. The result was to reduce the amount of free gold reserves, that is, gold not legally required to be held. The Federal Reserve Board saw itself in a bind. It wanted to ease credit conditions, but it feared that if it bought larger amounts of securities on the open market the banks would repay their indebtedness to the Federal Reserve Banks, thereby cutting down on available eligible paper. The result would be to reduce or even eliminate the free gold stock, making it difficult or even impossible to adhere to the gold standard. In February 1932 the Glass-Steagall Act removed this technical difficulty by permitting government bonds as well as eligible paper to meet the 60 percent collateral requirement. This unlocked the door to open-market operations—the very purchase of government securities would augment the assets available to serve as collateral. The Glass-Steagall Act enlarged the power of the Federal Reserve Banks in another way by permitting them to make advances under specified conditions to member banks on their promissory notes secured by any assets deemed satisfactory by the reserve banks.

For several months, from April to July 1932, the Open Market Policy Conference, prompted by the Federal Reserve Bank of New York, authorized a substantial open market purchase program. System holdings of government securities rose by about \$1 billion and Federal Reserve credit increased con-

siderably, although it fell back somewhat during the remainder of the year. The willingness of the conference temporarily to sanction an expansionary policy is explained in part by congressional attitudes. By 1932 Congress was anxious for a more stimulative policy, and proposals for new and radical legislation toward that end were under consideration. The governors, very conscious that Congress was looking over their collective shoulder, were willing to carry out a moderate expansionary program to forestall what they feared would otherwise be a dangerous monetary experiment by congressional mandate. Soon after Congress adjourned in July, the conference's ardor for expansion cooled; no further net additions were made to system holdings of government securities from August until the middle of the next year.

This episode raises the question of why the Federal Reserve System, putative guardian of the national financial system, was so reluctant to undertake a vigorous program of reflation at this time. Why did it dance briefly to Congress's tune but not follow through on open-market purchases although it seems obvious that the economy desperately needed stimulation? An investigation of the episode by Gerald Epstein and Thomas Ferguson that puts fresh light on the subject some fifty years after the events took place concludes that two sets of conflicting interest "help account for the Fed's notorious failure to arrest the Great Contraction."⁵ One was internal to the system, and the other placed the needs of the system opposite the needs of the economy.

The Epstein-Ferguson explanation of why the open-market purchase program of 1932 was abandoned so soon has three main elements:⁶

1. Commercial banks were becoming unprofitable as their loans outstanding shrank drastically and were replaced by safe (but extremely low-yielding) short-term government securities. Open-market purchases by the Fed tended to drive up the prices and lower the yields on government securities. The squeeze on bank earnings was uneven among the Federal Reserve districts, and in those most affected, Chicago and Boston, the Federal Reserve banks were quick to express opposition to the expansionary program.

2. Following the adoption of the Glass-Steagall Act early in 1932, the Federal Reserve System as a whole seemed to have an ample supply of gold, yet each individual Federal Reserve bank had to maintain a gold cover of 40 percent for its notes. The way the gold was distributed among them was therefore a factor determining their attitudes. Since the banks still claimed independence from the Federal Reserve Board, they very likely would have refused to share their gold to provide cover for other banks. Individual banks stopped cooperating in a program of reflation when their gold stocks began to approach the legal requirement.

3. Foreign holders of bank balances in the United States withdrew large portions of them, particularly from banks in New York City, putting such banks in jeopardy. Federal Reserve open-market purchases of securities might

have compensated for this deposit drain, but the deposit outflow was immediate and large, whereas the Fed's securities purchases were of uncertain duration and amount. Furthermore there was a major renewed outflow of gold. In these circumstances there were complaints from the bankers that the Fed's policy was having a demoralizing effect, and opinion within the system shifted, bringing the program to an end by mid-year.

Early in 1933, in the midst of the chaotic situation leading up the national bank holiday, the system's open-market policy evaporated; it was deemed an inappropriate time for the Open Market Policy Conference to meet and the Federal Reserve banks reverted to acting individually.

The New Deal Phase

After finally ending its fall in the first quarter of 1933, the economy grew rapidly in real terms to its next peak in the second quarter of 1937. This cyclical expansion of fifty months is one of the longest in American history. But the economy had sunk so low that despite an average real rate of growth of 12 percent per annum in net national product over four years, the rate of unemployment averaged over 14 percent in 1937.

It is interesting to compare descriptions of this period. Friedman and Schwartz: "These are extraordinary rates of growth." Chandler, however, considers the recovery to have been puny: "The recovery that began in 1933 was woefully slow and faltering." Friedman and Schwartz look at the high absolute rate of growth and then put it in the context of the depression. They point out that since the population had grown nearly 6 percent, per capita output was actually lower at the peak in 1937 than in 1929, leading them to conclude that the incompleteness of the revival was even more notable than its rapidity. Chandler finds the expansion unimpressive because he focuses on actual output in relation to potential Gross National Product (GNP).⁷

Although recovery was far from complete by 1937, national income fell sharply from the peak in the second quarter of that year to a trough in the second quarter of 1938, and the unemployment rate rose to 19 percent for all of 1938. The recovery that began in mid-1938 gained momentum with the outbreak of World War II in 1939 and was sustained by American participation in the war for six and a half years until early in 1945 as the end of the war approached.

With this general sketch of economic performance in mind, let us look at the developments, policies, and ideas of these turbulent years.

Banking and Monetary Reforms

Experience (the perennial winner of the best teacher award) had taught a harsh lesson. The nation needed to understand what went wrong and to make appropriate changes to correct the mistakes of the past and prevent their recurrence. In this section the major banking and monetary reforms enacted during the New Deal administration of Franklin Roosevelt are considered. A little later the new theoretical approaches that grew out of the experience of the depression will be discussed.

The insurance of bank deposits by a federal agency, the Federal Deposit Insurance Corporation (FDIC), is the most basic structural change in the banking system to emerge from the Great Depression. The concept was far from new—bills to establish a federal system of deposit insurance had been introduced into Congress for almost half a century, and various states had tried their own plans with unsatisfactory results. Widely viewed as an idea whose time would never come, deposit insurance was not part of the New Deal agenda. Congressional perseverance brought it about in the face of opposition by the new president and the organized banking community, a combination not otherwise noted for their similarity of viewpoint. A Republican, Senator Arthur H. Vandenberg, added a bank deposit guarantee amendment to a banking bill in the spring of 1933. Senate and House conferees retained the amendment despite Roosevelt's request that they reject it. The American Bankers Association, to whom the guarantee proposal was "unsound" and "dangerous," fought hard against it, and leading Federal Reserve officials also opposed it. Eventually Roosevelt came to accept it, hoping to use it to unify the banking system, for the law originally required state banks to become members of the Federal Reserve System after 1936 to qualify for deposit insurance. Deposit insurance has since come to be regarded as a great accomplishment of the first hundred days of the New Deal era, and Roosevelt publicly referred to it as a fine achievement of his administration.⁸

Deposit insurance became effective on January 1, 1934, under a temporary plan provided by the Banking Act of 1933; it was succeeded in August 1935 by the present permanent system under the Banking Act of 1935. At the outset the insurance covered a maximum of \$2,500 of deposits per depositor. By 1950 the limit had risen to \$10,000. As a result of inflation and economic growth over the next third of a century, the insurance limit has risen to \$100,000. To people living in the thirties this sum, forty times the original insurance maximum, would have appeared truly staggering; of course, the increase is not as impressive in real terms. Consumer prices by 1984 were roughly seven and a half times higher than in 1934, making \$100,000 the equivalent of about \$13,333 in 1934 dollars. If the original

protection had been kept in real terms, insurance coverage would have risen to about \$18,750.

At long last the nation found a remedy for bank failure epidemics. In view of the dismal historical record, and especially after the failure of over 9,000 banks in the four years 1930–1933—almost incredibly, 4,000 banks suspended operations in 1933 alone—the introduction of deposit insurance brought a new era to American banking. By the end of 1933 the number of banks was 15,015, compared with 24,633 four years earlier, a reduction of 39 percent. Some of the banks disappeared for reasons other than forced suspension, by merger, for example. From the point of view of the evolution of institutions, it is a striking fact that the virulent plague of bank deaths was cured by the modest FDIC after providing resistant to the much more majestic Federal Reserve System designed twenty years earlier to solve the problem of banking panics. Bank failures ceased to be a serious national problem after 1933, although in the mid-seventies and early eighties some large and more numerous failures had the effect of raising questions about the adequacy of the regulatory system.

Another issue that was resolved in the mid-thirties was the question of the location of the decision-making power within the Federal Reserve System. Heretofore the twelve Federal Reserve Banks vied with the board; and the *primus inter pares* of the banks, the Federal Reserve Bank of New York, sought to exert special influence vis-à-vis the board and other banks. Now the crown was placed on the collective head of a reconstituted and renamed board.

The Banking Act of 1935 converted the old Federal Reserve Board into the Board of Governors of the Federal Reserve System. Instead of eight members consisting of two ex officio members (the secretary of the treasury and the comptroller of the currency) plus six appointed members with terms of ten years, the new Board of Governors of seven would all be appointed for terms of fourteen years. The purpose of the change was to increase the independence and power of the board. The Banking Act of 1933 established the Federal Open Market Committee (FOMC), consisting of the heads of the twelve banks, to replace the Open Market Policy Conference. The Banking Act of 1935 made a significant change in the composition of the FOMC by making it consist of all seven members of the Board of Governors plus five members from the Federal Reserve Banks. This legislation also prohibits the several banks from engaging in open-market operations in government securities for their own account without the approval of the FOMC.

In our political system the office of president is higher than that of governor, but it is just the opposite in the Federal Reserve System. The Banking Act of 1935 took away the title of governor from the chief executive officers of the twelve Federal Reserve Banks and made them presidents. All members of the Board of Governors were given the title of governor, not

just the executive head of the board, who now became chairman of the board. Thus the tradition of designating the chief executive of a central bank as its governor is preserved for its ruling oligarchy.

In addition to restructuring the Federal Reserve System, the Banking Act of 1935 increased its powers. The theory was that the system had failed to hold the economic contraction in check and to avert a banking panic because it lacked the necessary means of doing so.

In order better to control the money supply, the board was empowered to vary the reserve requirement percentages between the fixed 7, 10, and 13 percent set for net demand deposits of country banks, reserve city banks, and central reserve city banks, respectively, by an act of June 1917, and twice those percentages. In addition, the power of the Federal Reserve Banks to lend to member banks, which had been expanded in 1932 under the Glass-Steagall Act for emergency advances, was broadened on a permanent basis to permit advances on any security considered to be satisfactory. Thus the limitation of central bank discounting the eligible commercial paper to insure the productive use of credit, once looked upon as the means of implementing the real bills doctrine and thereby regulating the money stock, had gone completely out of the official rule book of the Federal Reserve System. The original concept of a central banking organism that would respond automatically to the needs of commerce, industry, and agriculture had turned out to be an environmental misfit.

A new type of control was given to the Federal Reserve System to regulate the use of credit. The Securities Exchange Act of 1934 empowered the Federal Reserve Board to regulate the amount of credit that banks and brokers might make available to their customers to buy and carry registered securities. From this authority come the margin requirements, Regulation U which applies to loans on stocks by all banks, nonmember as well as member, and Regulation T which applies to loans on stocks and bonds by members of national security exchanges. The "selective" credit control power is a direct result of what is generally considered to have been the inability of the Federal Reserve Board in the late twenties to cut off the flow of credit used to fuel the stock market without causing the rest of the economy to run out of gas. Certainly this sort of control over the allocation of credit was foreign to the thoughts of the writers of the Federal Reserve Act. The one type of credit control that was originally included, and indeed was prominent, was the eligibility requirement, and we have just seen how it met its fate.

In yet another area, that of regulation of banks, new rules were promulgated. The Banking Act of 1933 prohibited the payment of interest on demand deposits by member banks, and the Banking Act of 1935 extended the prohibition to all insured banks. The Banking Act of 1933 gave the Federal Reserve Board the power to set a maximum rate of interest that

member banks could pay on time and savings deposits. The Banking Act of 1935 extended the coverage of this control power by giving it to the Federal Deposit Insurance Corporation to apply to insured nonmember banks. Again, the justification for these statutory changes is to be found in the experience of the banks in the late twenties. It was thought that competition among banks to attract deposits led them to pay excessive amounts of interest; to increase their earnings to meet their high interest costs, they might allow their reserves to become too low, and they might be led to acquire risky loans and investments. The rationale for these limitations was seriously challenged thirty years later, and by the early eighties they were in the process of being eliminated.

Additional steps to keep banks from again contributing to a speculative stock market binge were taken at this time. The notorious investment affiliates of commercial banks were dealt with summarily by being prohibited; restrictions were placed on interlocking directorates of commercial banks and investment companies. To prevent member banks from again serving as conduits for funds flowing into the stock market, they were no longer permitted to act as agents of those wishing to make security loans.

The pledge of allegiance to the gold standard taken by the United States in 1900 and honored faithfully until 1933 was now largely renounced. It is true that the rules of the game of the gold standard were not always adhered to during the twenties when the rising gold stock called for a more expansionary monetary policy than was adopted. Yet American policy was deeply committed to keeping the dollar convertible into gold at its fixed price of \$20.67 an ounce, and the monetary authorities undeniably acted to encourage the postwar restoration of the gold standard abroad. When the crunch of defending the convertibility of the dollar came after World War I and again in the fall of 1931, the central bankers did not hesitate to bite the bullet of tight money. But by 1933 the world economic environment was in a new dark phase: a debilitating worldwide depression threatened the social fabric and the political institutions of this and other countries, and the international gold standard had become a financial wreck to which only a handful of European countries clung. The conflict between domestic and international economic policies—between reviving the nation's economy and passively complying with whatever the external balance might require or permit—became obvious. However sound American money linked to gold might be in the abstract—and however blessed by the financial patriarchs and economic pundits—that golden link would have to be broken if it kept economic policy from putting people back to work.

Acting under the authority of the Emergency Banking Act of March 9, 1933, President Roosevelt took the United States off the gold standard as an emergency measure. Within a period of three months, steps were taken that greatly reduced the domestic role of gold. Gold and gold certificates were

called in from all holders except the Federal Reserve Banks. Congress abrogated gold clauses in all contracts—they were declared to be “against policy”—a step that was challenged in the courts. Gold clauses, quite common in private and government debt contracts alike, typically required the debtor to pay in gold dollars of the weight and fineness that existed at the time of the contract originated, or their equivalents in nongold dollars. If the official price of gold were raised, debtors would have to pay more dollars; should the price of gold be doubled, a debtor who owed \$1,000 would be obliged to pay \$2,000. It would not be feasible policy for the government to raise the price of gold substantially under such circumstances. Rather than abandon freedom of maneuver on gold policy, Congress declared the gold clause void.irate creditors, enraged that the sanctity of contract was not absolute, took to the courts. The controversy was put to rest in February 1935 by a five-to-four decision of the Supreme Court that upheld Congress. Since the general level of prices had fallen drastically, debtors at this time were paying more valuable dollars than they had borrowed anyway without the extra burden that the gold clauses would have required.

During 1933 our international gold policy was in a state of flux and uncertainty. For some weeks the suspension of gold payments was viewed as temporary and the dollar, although free to fluctuate, retained its value in terms of other currencies. Depreciation began in May; the exchange value of the dollar was again stabilized by the adoption of the Gold Reserve Act of January 30, 1934. During June and July 1933 an international economic conference was held in London. An effort by some European delegates to get commitments to the gold standard was rebuffed by a message from Roosevelt, who wanted to preserve freedom of monetary action for economic recovery. Beginning in September the secretary of the treasury, followed in October by the RFC, bought gold at gradually higher prices. The dollar was being deliberately depreciated against foreign currencies, with the intention of reversing the previous trend of appreciation resulting from the depreciation of foreign currencies. A cheaper dollar in terms of foreign currencies was intended to aid U.S. exports and curb imports, and so contribute to economic recovery. Although the depreciation of the dollar could be justified as correcting the previous excessive appreciation, foreigners tended to view it as a means by which the United States sought to achieve recovery by exporting deflation. In other words it was part of the overall pattern of competitive exchange depreciation, a kind of cutthroat competition in which countries acted individually in their own national interest with a macro result of uncertainty, instability, and declining trade for the world economy.

By the end of January 1934 the New Deal's definitive gold policy appeared in the form of the Gold Reserve Act of 1934. This replacement for the Gold Standard Act of 1900 established the framework for the new gold policy; under its provisions the policy took the following forms.

1. The official price of gold was raised from \$20.67 to \$35.00 an ounce, an increase of 69 percent. The content of the dollar was reduced from 23.22 to 13.71 grains of gold, a devaluation of the dollar in terms of gold of 41 percent. (There are 480 grains in an ounce, so $480/23.22 = 20.67$ and $480/13.71 = 35$). A side effect of devaluation was a profit to the Treasury of \$2.8 billion—its 196 million ounces of gold were instantaneously increased in value by \$14.33 each.

A stabilization fund of \$2 billion was created and placed under the control of the secretary of the treasury for use in maintaining the stability of the dollar in the foreign exchange market.

2. All gold, including even that held by the Federal Reserve Banks, was nationalized. Domestically held currency was no longer redeemable in gold or gold certificates.

3. Gold would no longer be coined for domestic use; existing coins would be made into bars.

4. Gold might be held or transferred only in accordance with regulations prescribed by the secretary of the treasury. These permitted gold to be imported or exported freely, but domestically gold could be held or dealt in only for "legitimate" commercial, industrial, artistic, and scientific purposes.

The net result was the adoption of a limited or international gold-bullion standard in place of a full gold-coin standard, with the dollar devalued by 41 percent from its historic value established a century earlier. Although transformed in major ways, the monetary standard of the United States still qualified as a type of gold standard because the dollar was defined in terms of gold, gold could move freely in and out of the country, and U.S. money was convertible into gold for international purposes. The final break with the gold standard did not come until nearly forty years later, in 1971.

The monetary standard of the United States that resulted from the gold policy adopted in 1934 is not easily described. Clearly not a true gold standard, until 1971 (with exchange rates generally fixed) the system nevertheless was influenced by gold flows. A description provided by Friedman and Schwartz is helpful in bringing this hazy picture into better focus.

It is not a gold standard in the sense that the volume of gold or the maintenance of the nominal value of gold at a fixed price can be said to determine directly or even at several removes the volume of money. It is conventional to term it—as President Roosevelt did—a managed standard, but that simply evades the difficult problems of definition. It is clearly a fiduciary rather than a commodity standard. . . . In principle, the Federal Reserve System has the power to make the quantity of money anything it wishes, within broad limits. . . . [The Federal Reserve System] clearly is not unaffected in its actions by gold flows. So long as the exchange rate between the dollar and other currencies is kept fixed, the behavior of relative stocks of money in various countries must be close to what would be

produced by gold standards yielding the same exchange rates, even though the mechanism may be quite different. Perhaps a "discretionary fiduciary standard" is the best simple term to characterize the monetary standard which has evolved. If it is vague and ambiguous, so is the standard it denotes.⁹

The devaluation of the dollar marked the end of the road for the American effort to reestablish a full-fledged international gold standard. For ten years after World War I the gold standard had laboriously been restored in the world economy, only to crumble in the first few years of the thirties. The United States was not forced to devalue by a shortage of gold reserves; the ratio of the nation's gold stock to its money stock was the highest since 1914.

In the spring of 1933, when many members of Congress were impatient for monetary expansion, it seemed possible that legislation would be enacted requiring the president to take specific action. Proposals were made to create money by a variety of means, including monetization of silver and issuing greenbacks. Roosevelt rather astutely kept his options open by persuading Congress to grant him a smorgasbord of permissive powers. In the "Thomas Amendment" to the Farm Relief Act of May 12, 1933, the president was empowered to enter into agreements with the Federal Reserve Board and banks for the latter to buy government securities, issue greenbacks, proclaim a new gold value of the dollar, reestablish bimetallism by providing for the unlimited coinage of silver as well as gold at fixed ratios, and accept silver from abroad in payment of war debts by foreign governments. No use was made of the provisions regarding the Federal Reserve or the greenbacks, and we have seen what eventually happened concerning gold. The silver policies remain to be considered.

The one tangible result of the London Economic Conference of mid-1933 was an international agreement to take steps to raise the price of silver. The effect was that the United States undertook to buy its annual domestic output of silver for monetary purposes, and the Treasury began purchasing silver in December 1933. Then the Silver Purchase Act of 1934 required Treasury purchases of silver in the United States and abroad until the stock of silver was equal in value to one-third of the value of the monetary gold stock or the price of silver reached its monetary value of \$1.29 an ounce. By the end of 1941 about \$1.6 billion was spent for the purchase of silver, a considerable sum but far short of the objectives of the Silver Purchase Act.

The purchase of silver was quite unnecessary for the achievement of the objective of monetary expansion. A revival of the silver movement of the 1890s is largely responsible. The severe deflation rekindled the old belief of the agrarian West and South that silver was the preferred way to expand the money supply. Joined to this broad movement were the silver-mining

interests and the senators from the silver-producing western states. When united as a special interest group, the influence of the latter was politically very potent. One thinks of William Jennings Bryan as the silver movement's patron saint, but his eloquence was no longer available, for he died in Dayton, Tennessee, in 1925 following his successful prosecution of John Scopes for teaching evolution contrary to state law. The key man in "doing something for silver," the negotiator of the silver agreement in London, was Senator Key Pittman of Nevada. One may surmise that Bryan, an ardent prohibitionist, would have been chagrined to see Pittman, "whose sprees had shamed his own delegation and scandalized London," as silver's champion.¹⁰

In its domestic effects the silver-purchase program was essentially a price-support program for the commodity silver, quite similar to the price supports for cotton, wheat, peanuts, and so on. It also resulted in the stockpiling of silver. Silver certificates, which formed part of the circulating money supply, were printed as silver bullion was acquired, but the net effect on the money stock was relatively minor.

The Money Stock, Interest Rates, and Monetary Policy

The M1 money stock rose from \$19 billion in April 1933 to \$31 billion in March 1937, a rise of 63 percent in only four years. The monetary base increased slightly faster, by 67 percent. The surge in the monetary base resulted from a huge addition to the nation's gold stock, the so-called golden avalanche. The rise in the price of gold from \$20.67 to \$35.00 an ounce increased the profitability of gold mining substantially. Some of the additional gold came from domestic mines and from scrap, but much larger amounts came from other countries. A large-scale flight of capital to the United States from Europe developed as a result of the rise of Hitler and the growing anticipation of war, and it continued right through 1941. The result of the devaluation of the dollar in 1933–1934 plus the increased quantity of gold was a tripling of the value of the nation's gold stock between 1933 and 1937, from \$4 billion in December 1933 to \$12.7 billion by the end of 1937. Four years later, at the time of Pearl Harbor, December 1941, it was \$22.7 billion. The main significance of all this is that the rising gold stock created high-powered money in abundance. The Federal Reserve System was more a spectator than a participant in the monetary expansion; from 1933 to 1937 Federal Reserve credit was virtually unchanged.

One of the main reasons why the money stock had fallen from 1930 to 1933, the trend of a lower deposit/currency ratio, was now reversed. The public became more willing to hold money in the form of bank deposits. Renewed confidence came with the fresh approach to economic problems by the new administration; after the banks were reopened in March 1933 following the national bank holiday, deposits increased relative to currency

held by the public. Further impetus to the rise in the deposit/currency ratio was provided by the introduction of deposit insurance at the beginning of 1934, and the upward trend continued until late 1935 when the ratio became stable. Of course this development tended to cause M1 to rise faster than the monetary base; we need to account for the fact that the opposite was in fact the case.

The factor that kept the money growth below its potential was a decline in the ratio of deposits to bank reserves. As gold flowed in, the banks gained reserves, giving them the opportunity to convert these additional cash assets into other forms, that is, loans and investments. To the extent that the banks chose to do this, the result for the system would be an expansion of the stock of money as well as a rise in total bank assets. The banks, however, chose not to expand in proportion to their increased reserves but at a much slower pace, with the result that they accumulated a large volume of "excess reserves." Such excess reserves averaged about \$2.5 billion in 1935 and 1936 or about 48 percent and 42 percent of total reserves respectively, rather startling fractions when one reflects that banks are profit-making (in addition to "money-making") institutions, and excess reserves imply less than maximum profits. Excess reserves diminished in 1937, but they soared to higher levels in the next few years, peaking at an average of \$6.3 billion in 1940. The excess reserves were widely interpreted as an indication that the banks were so awash with funds that they did not have any use for them; they were simply an unneeded surplus. According to this view the excess reserves demonstrated the existence of extremely easy-money conditions. The private demand for loans was low as a result of business depression, and the yield on investments was remarkably low. From the viewpoint of the banks, the low demand for credit by the public limited the supply of assets available for bank acquisition. At the same time, however, a very important shift occurred in the asset preferences of banks, for they now preferred a much more liquid portfolio composition than before the Great Depression. The banks deliberately chose a higher ratio of cash assets (with zero returns) to total assets. Among their earning assets they shifted toward the highly liquid short-term government obligations. By 1935 and 1936 the yield on Treasury bills was not much more than .1 percent, and later in 1940 it fell to an incredible .014 percent. At this time banks had a strong preference for assets that could be converted into cash quickly without any significant loss of value. This preference for liquidity was a major factor in driving short-term interest rates to their extraordinarily low levels.

After its rapid growth from 1933 to early 1937, the M1 money stock fell by about \$2 billion to mid-1938, after which it entered a long period of expansion. The monetary base, after a pause in 1937, resumed its growth to 1940. The deposit/currency ratio held steady, but the deposit/reserve ratio continued to fall until 1940.

From its low point in April 1933 at the start of the New Deal to September 1939 when World War II began, the M1 stock grew by 85 percent and M2 by 69 percent. As we have noted, the growth was interrupted by a fall during the recession of 1937–1938.

In contrast to the major expansion of money from 1933 to 1939, velocity showed only minor change. A modest increase by 1937 was followed by levels closer to those of 1933. Velocity fluctuated moderately within a range well below that of the 1920s. Money stock and velocity data are shown in table 4–4.

The period 1933–1939 is notable for its low interest rates. High-grade short-term obligations such as commercial paper and Treasury bills yielded less than 1 percent, much less after 1937 as noted above. Long-term bond yields were low too, in the range of 3 to 3.5 percent for high-grade corporate bonds. Interest rates were not only remarkably low but during the economic upswing of 1933–1937, contrary to normal behavior, they fell further; the growth of demand for borrowed funds associated with increased production was easily accommodated by a rapidly increasing supply of loanable funds that was swollen by the capital inflow.

The Federal Reserve System was equipped with the rediscounting mechanism at birth and by 1923 had assumed its second major credit control instrument, open-market operations. With these two means of controlling the monetary base, the system went forth into the post–World War I era with the intention of exerting a strong influence on economic activity. Now, twenty years after its creation, the system put aside these methods of monetary control: from 1933 to 1939 Federal Reserve credit was essentially unchanged. Open-market operations did not cease, but they were carried out to influence the rate of return on securities rather than to raise or lower total credit. After playing the leading public policy role in the economic drama from 1922 to 1933, the Federal Reserve System was now reduced to a character part. It did not have much to do with the development of the

Table 4–4
Money Stock and Velocity of Money, 1933, 1937, 1938, 1939

<i>Money Stock</i>	<i>April 1933</i>	<i>March 1937</i>	<i>May 1938</i>	<i>September 1939</i>
M1	\$19.0 billion	\$31.1 billion	\$29.1 billion	\$35.1 billion
M2	\$29.7 billion	\$45.5 billion	\$43.9 billion	\$50.2 billion
<i>Velocity^a</i>	<i>1933</i>	<i>1937</i>	<i>1938</i>	<i>1939</i>
M1	2.19	2.47	2.30	2.21
M2	1.38	1.67	1.53	1.52

Adapted from Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States 1867–1960*, a study by the National Bureau of Economic Research. Princeton: Princeton University Press, 1963, pp. 714–715, 774.

^aVelocity refers to money income divided by the money stock.

plot. Fiscal policy took center stage, while other new public actors were also introduced, such as the Tennessee Valley Authority (TVA) and, in temporary roles, the Works Progress Administration (WPA) and the Civilian Conservation Corps (CCC).

Rediscounting at the Federal Reserve Banks became trivial after 1933; it was like a flame flickering and almost out. The banks were "saturated" with reserves in excess of their requirements—if a bank did need additional reserves it was cheaper for it to sell some low-yielding short-term assets than to pay the higher cost of borrowing from the Fed, although the discount rate was hardly usurious. From 3.5 percent in March 1933 the discount rate stepped down four times to 1.5 percent in February 1934 and then to 1 percent in August 1937, where it remained undisturbed until 1942.

The phrase *monetary ease* was used by the Federal Reserve System to describe its general policy between 1933 and the start of World War II. It might well be called *permissive* or *passive* because essentially the Federal Reserve System allowed the inflow of gold to have its full monetary effect. The pronounced rise in the monetary base and the accumulation of excess reserves by the banking system created an inflationary potential but no imminent danger; the Federal Open Market Committee therefore did not employ open-market sales to negate the effects of the gold inflow. For a time the Treasury stepped in to sterilize the gold inflow. Ordinarily when the Treasury bought gold, it paid for it from balances set up on the books of the Federal Reserve Banks on the basis of deposits of gold certificates representing the gold purchased. In other words, the gold paid for itself, and the result of the Treasury's purchase was to add to the reserves of the banking system when the Treasury's checks were collected. During the first three quarters of 1937 the Treasury borrowed funds to pay for the gold, a procedure comparable to open-market sales of securities by the Federal Reserve Banks. Since in this case gold certificates were not printed, the gold was rendered "inactive," at least temporarily. The effect was to counteract or neutralize the increase in the monetary base that would otherwise result if the "normal" method were used. In using this sterilization procedure, the Treasury took a leaf from the book of the Federal Reserve, which used open-market sales for the same purpose in the 1920s.

Although the Federal Reserve System abstained from using its traditional open market and rediscounting instruments, it made full use of the power to vary the reserve requirements of the member banks given to the Board of Governors under the Banking Act of 1935. Between August 15, 1936, and May 1, 1937, the reserve requirement percentages were doubled in three steps. The purpose of this steep increase was not to put on the monetary brakes but, in view of the unprecedented amount of excess reserves in the banking system, to take in slack so that the central banking authorities would be better able to deal with a future need to apply the brakes. After allowing

excess reserves to accumulate, the system decided to eliminate a large block of them through conversion into required reserves, on the supposition that they were not needed and might give trouble later. The rationale was that so large a volume of excess reserves did not serve any economic purpose but merely indicated that the banks did not have sufficient loan demand or investments available to them to employ all of their funds. Like newlyweds who receive six toasters as wedding presents, the banks were seen as not knowing what to do with the excess. Banks might well want to hold more excess reserves than they did before the banking panics of the early thirties, but there is a limit to everything, and there was thought to be an excess of excess reserves. The Federal Reserve could have sold securities on the open market to soak up the excess reserves, but the amounts involved were so large that the Federal Reserve Banks would have been deprived of most of their income. The system did not want to take action that would be considered to be a contractionary policy shift while the economy was still severely depressed. Like a patient recovering from a debilitating illness, the economy was still weak and might easily suffer a relapse. The Federal Reserve System, as in 1928–1929 and 1931, again saw itself locked into a position which it considered untenable with respect to the use of its traditional general credit control powers. Open-market operations were ruled out because of the large amounts that would be involved, and the discount rate was useless at a time when the banks were not borrowing. Under the circumstances the Board of Governors reached for the newly acquired tool of changing the reserve requirements. By this means the excess reserves could be rendered harmless—by jacking up the reserve requirements in a few steps the banking situation could be placed in a position which would again make open-market operations feasible. Changing reserve requirements was a blunt tool that could not be used to fine-tune the money supply but was useful on infrequent occasions to effect the kind of major pruning now required. Once the excess reserves had been reduced to “reasonable” levels, the flexible tool of open-market operations would again be brought into use on a continuous basis. It was recognized that raising reserve requirements involved risk; it was a new device and might have an undesired inhibiting effect on bank credit expansion. The risk was taken beginning with the August 1936 increase in reserve requirements, which was explained as a precaution against uncontrollable credit expansion in the future, and not a departure from the easy-money policy. Two further increases were put into effect on March 1 and May 1, 1937. By early 1937 economic activity was rising rapidly, prices were increasing, and the stock market was out of its coma and on the move again.

In 1937–1938 the recovering economy suffered a relapse that was distinctly painful although thankfully brief. The cyclical peak came in the second quarter of 1937, by the autumn the slump was obvious, and the trough

occurred in the second quarter of 1938. The combination of reserve requirement increases (August 1936 to May 1937) and the sterilization of gold by the Treasury (January to August 1937) was expected by the Board of Governors to result in the shrinkage of excess reserves without banks selling off securities or restricting loans, and hence without a rise in interest rates. But interest rates did rise slightly. More important, a rather dramatic change occurred in the money stock: from a peak of \$31.1 billion in March 1937 it fell to \$29.1 billion in May 1938. This unintended restrictive effect was a result of underestimating the demand by the banks for the most liquid of assets, excess reserves. The diuretic was powerful, draining excess reserves by \$1.25 billion from \$2 billion early in 1937 to \$750 million in August. To regain some of this lost liquidity, the banks became more restrictive in their lending practices and sold some investments.

For the year beginning in the spring of 1937 the recession—within a depression—brought a drop of one-third in industrial production. For all of 1938, unemployment averaged 19 percent, up by a third over 1937; GNP in real terms was 5 percent lower in 1938 than in 1937. The Federal Reserve cannot escape blame for this sharp economic setback, but on the other hand it can hardly be held solely responsible for it. In particular, federal fiscal policy played a role by shifting toward restriction in 1937 as expenditures for goods and services as well as transfer payments were cut and new social security taxes were collected. The combined budgets of federal, state, and local governments were “shifted from a deficit of \$3.1 billion in 1936 to a surplus of \$300 million in 1937. These were indeed large shifts of fiscal policies in the direction of restriction.”¹¹ For the whole period 1933–1939 federal fiscal policies were no more than slightly expansionary. In a later examination of the period it was concluded that “fiscal policy seems to have been an unsuccessful recovery device in the 'thirties—not because it did not work, but because it was not tried.”¹²

The restrictive policies were replaced by expansionary policies in the latter part of 1937 and 1938: the Treasury desterilized inactive gold; member bank reserve requirements were lowered; federal government expenditures were increased. In the late spring of 1938 economic recovery again got started and continued into the period of the war. By 1939 real GNP was slightly higher than in 1929, but with an unemployment rate in excess of 17 percent the economy was still severely depressed; real output has been estimated to have been 22 percent below its potential. The gold inflow continued, and the reserves of the banks grew as a consequence. The Federal Reserve did intervene in the government securities market, not to regulate the money stock but to prevent or limit “disorderly” conditions in that market. The objective was to stabilize the prices of securities to assist the Treasury in its financing, and to protect the banks' bond portfolios from disturbing fluctuations.

Keynes and Some Central Bankers

In the perspective of history, a revolution in thought takes on the appearance of inevitability. In the flood tide of current events, however, it is difficult to ignore the element of chance in the process. It was a most unlikely series of accidents that led to Marriner Eccles, a banker, who had been strongly influenced by Foster and Catchings, being placed at the head of the monetary system, with me, an equally unorthodox ex-Canadian economist, as his assistant (nominally Assistant Director of Research). Rarely have two people with such different backgrounds or aptitudes which complemented each other so well been so suddenly catapulted into a strategic spot at a critical moment which enabled them to make an impact.

Lauchlin Currie¹³

The success of the Keynesian revolution in economic thought led to a temporary eclipse of the quantity theory of money. . . . It became a widely accepted view that money does not matter, or, at any rate, that it does not matter very much.

Milton Friedman¹⁴

John Maynard Keynes's innovations in the analysis of monetary and fiscal policy—the field of study known as macroeconomics since the 1940s—are generally recognized as the most important developments in economic thought in the twentieth century. In marking the centenary of his birth (June 5, 1983), *The Economist* observed that “his economic views have been more influential than any other economist of his time, perhaps of all time.”¹⁵ The views of two Nobel laureates from the United States support this evaluation. Paul Samuelson considers Keynes “one of history’s political economists—in the top class with Adam Smith. . . . The Keynesian revolution did indeed create a new branch of economics. . . .”¹⁶ Milton Friedman, who led a counterrevolution against Keynesian economics, directs his criticisms of Keynesian doctrine more to Keynes’s followers than to Keynes himself, whom he regards as “one of the great economists of all time—to be listed in the pantheon of great British economists” and “truly a remarkable scientist.” This despite Friedman’s view that Keynes caused economics to head in the wrong direction for some decades.¹⁷

It may be a slight exaggeration to say that there was no macroeconomics before Keynes; “the neoclassical quantity theory of money was, in fact, what we now call macroeconomics.”¹⁸ But as a macroeconomic theory, the quantity theory of money was unimpressive; it was used mainly to explain price fluctuations and did not serve to guide the capitalist world out of the bog of depression. What Keynes did in his *General Theory of Employment Interest and Money* was to provide a comprehensive new framework of analysis, a whole new approach explaining how the gross national product and level of employment are determined. It is the spring from which modern

macroeconomics flows. The intense, persistent depression of the 1930s called into question the neoclassical paradigm and the laissez-faire economic policies associated with it. This historical event, the depression, precipitated the Keynesian revolution. Keynes offered what he considered to be a total break with orthodox economics. He rejected the orthodox view that unemployment was voluntary, that workers could get jobs by taking a wage cut. Neoclassical theory failed to understand the role of money and missed the point that changes in money wages and changes in real wages were not always the same. The orthodox view that a cut in the general wage level would relieve the unemployment problem was unwarranted and might even worsen the situation by reducing aggregate demand. Keynes's insight stemmed from his recognition of a dichotomy in neoclassical economics between the theory of value and distribution (microeconomic theory, the main body of neoclassical thought) and the theory of the price level (explained by the quantity theory of money). Value theory, that is, the theory of relative prices, was explained without regard to money or the absolute level of prices; money was brought in only to explain the absolute general price level. This division was viewed by Keynes as a basic weakness in prevailing economic theory, and he undertook in *The General Theory* "to escape from this double life and to bring the theory of prices as a whole back to close contact with the theory of value."¹⁹

By acquiescing in Say's Law (for the economy as a whole, supply automatically generates its own demand), orthodox economists could ignore the macroeconomic questions of the determination of demand and supply for total output. It was thought that all income would necessarily be spent on output, because income saved would not be held idle but would be channeled into spending for investment goods. The rate of interest would fluctuate to bring the necessary balance between the amount society saved and the amount it invested. Keynes attacked Say's Law and maintained instead that national income and employment were determined by aggregate effective demand. Consumption spending depends upon the level of income, generally a fairly stable relationship defined by the consumption function. Investment spending is explained by the marginal efficiency of capital (the expected rate of profit) in conjunction with the rate of interest. Investment spending is volatile because it depends on future expectations of revenue flows and costs. Uncertainty and changing expectations play major roles in the Keynesian view of how investment spending is determined. A new theory of the rate of interest, the liquidity preference theory, is presented in which the rate of interest depends upon a liquidity preference schedule showing how much money people want to hold at each interest rate, and the quantity of money. The bottom line of the new approach was the conclusion, at the time a shocking conclusion, that the invisible hand was a figment; the economy was not necessarily destined to move relentlessly toward full employment

equilibrium if left to itself but was likely to find an equilibrium some distance below its potential. In fact, full employment equilibrium was but a special case in the "general theory."

Let us now move from this capsule summary to consider more deliberately the role of money and its implications for monetary policy. Before Keynes made his revolution, the quantity theory (recall Irving Fisher) held sway. Keynes (before he became a "Keynesian") followed his great teacher, Alfred Marshall, who had adhered to the quantity theory using the Cambridge or cash balance equation ($M = kPQ$ where $k = 1/V$) for relating money to output and prices instead of the equation of exchange used by Fisher, but this was a technical and not a substantive difference. So Keynes was a good quantity theorist himself until the 1930s (just as Luther was a good Catholic until 1517). The revolution came from within the economic establishment.

In an important book written in 1923, Keynes says of the quantity theory of money that it is fundamental and its "correspondence with fact is not open to question." Then, significantly, he adds that "it is often misstated and misrepresented . . . by careless adherents of the quantity theory. . . ." The error consists in stating that a percentage change in the money stock must cause the same percentage change in the price level. In other words, the velocity of spending is assumed to be constant, although, Keynes points out, everybody knows that this is not true, at least in the short run. In the long run he grants that it probably is true, and then adds one of the most frequently quoted statements in economic literature: "But this *long run* is a misleading guide to current affairs. *In the long run* we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again."²⁰

What Keynes described as an error was accepted for all practical purposes as the rule. Monetary theory up to the early thirties took V as highly stable in the equation $MV = PQ$. If the economy fluctuated in the short run it was because of changes in M , and if prices rose or fell over the long run it was because of changes in M . Monetary policy was available to stabilize the economy by the use of open-market operations and the discount rate. As we have seen earlier, there was in the twenties a high degree of confidence in the ability of the Federal Reserve System of use its monetary control powers to maintain economic prosperity in this manner.

Keynes had identified the central problem of monetary analysis. The question of velocity, the heart of the quantity theory, is crucial to understanding monetary theory. Mark Blaug has shown that during the neoclassical period from 1870 to 1930 quantity theorists were not satisfied with just the long-run implications of the theory. We have noted in chapter 1 that Fisher, who is often taken to have been a rigid quantity theorist, actually

dealt fairly extensively with "transition periods" when V and T are subject to change. According to Blaug, this was general: "The striking characteristic of quantity theorists in this period was the emphasis on short run problems, on the instability of V in the short run rather than the proportionality of money to prices in the long run."²¹ Richard T. Selden agrees that the principal quantity theorists did not maintain that V is constant over time, and refers to misleading "textbook caricatures" of them.²² Perhaps Fisher and others were misunderstood, their treatments of changes in V taken to be mere minor qualifications of the main thesis, or as disclaimers in fine print to be ignored. Fisher was mistakenly interpreted by many to have considered V an institutional datum. A recent example demonstrates the point. The author states that "the quantity of money is linked rigidly to the value of transactions" in Fisher's version of the quantity theory, adding that the constancy of V was explained by the fact that in the short term, payments practices and the structure of the economy could be regarded as fixed.²³ Regardless of what the quantity theorists actually said, they were generally thought to have said that V was virtually constant:

In monetary theory, [Fisher's] analysis was taken to mean that in the quantity equation $MV = PT$ the term for velocity could be regarded as highly stable, that it could be taken as determined independently of the other terms in the equation, and that as a result changes in the quantity of money would be reflected either in prices or in output.²⁴

In *The General Theory*, Keynes offered his income-expenditure analysis to explain changes in national income ($C + I + G = \text{GNP}$) as an alternative to the quantity theory approach relating the stock of money to national income. He held that in an economy operating below the full employment level, the value of V (or k) was not at all stable but would generally adapt to changes in the money stock or the level of income. This does not dispute the validity of the equation of exchange, a logically unassailable formal relationship, but the quantity theory lost its usefulness as a policy guide. Keynes argued that a rise in M might well be offset by a fall in V , so that prices and output would not be affected. Similarly, if for some reason the level of income should rise autonomously with M constant, then V will rise. Instead of being more or less constant, velocity easily adapts itself to or accommodates autonomous changes in the other variables. The rationale for this behavior derived from Keynes's analysis of the demand for money, that is, the amount of money people choose to hold (liquidity preference). He separated the demand for money into two main categories: (1) the M_1 demand for transactions and precautionary motives, and (2) the M_2 demand for the speculative motive. The M_1 segment was presented as a fairly stable fraction of income, so it was consistent with the quantity theory approach. But the M_2

demand was explained as inversely related to the current rate of interest. It was an unstable relationship, because it was affected by uncertainty concerning the future level of the interest rate.

Keynes's analysis was distinguished from that of Fisher's by its treatment of interest rates. An especially significant feature of the liquidity preference function applied when unemployment was rife and interest rates very low. The interest rate could reach a floor—the M_2 demand for money would be perfectly elastic or horizontal at some very low positive interest rate. If additional money were created it would be held as idle balances. Why so? If it were used to buy bonds, the price of bonds would rise and the interest rate would fall even lower. This would be an unacceptable option—it would be preferable to hold the money. Why surrender a perfectly liquid asset (money) to gain only a tiny interest return with the accompanying high risk of a future capital loss on the bonds ominously on the horizon? Sooner or later the market interest rate would rise and the bonds would fall in value. These conditions, described as absolute liquidity preference, allowed M to change without affecting income, and conversely income could change without affecting M ! Was this explanation realistic? Strictly speaking, no; Keynes himself said he did not know of an example and referred to it as a limiting case. Yet Keynes and many others thought that the low interest rates of the thirties hovered only slightly above the level of absolute liquidity preference, so for practical purposes, for policy-making purposes, it was relevant and important.

To conclude, it was Keynes's contention that the *quantity* of money was unimportant under conditions of economic depression. It is the *spending* of money for output, aggregate demand, that is important. The key to economic recovery was autonomous spending, chiefly business investment spending and government expenditures for goods and services. It was important to have ample money to keep interest rates low in order to encourage investment spending, but if businessmen are pessimistic and the profit outlook bleak, then investment spending would be inadequate and monetary policy ineffective. It was in the collapse of investment spending that Keynes found the explanation for capitalism's ills. The depression virus entered the economic system via a loss of productive investment opportunities, and spread into a wider general loss of income for the system as a whole through the multiplier process. The result was the conclusion that monetary policy was unimportant, a weak support in time of trouble. Money should be kept plentiful and cheap, for it provided suitable growth material if used, but it could not initiate expansion. It was necessary to generate spending for output, and for this purpose fiscal policy was advocated. Thus the practical policy result of the Keynesian revolution was to elevate fiscal policy into the prime policy role and to demote monetary policy.

The most prominent person in the monetary field in the United States

in the 1930s was a commercial banker and industrialist from the intermountain West who became head of the Federal Reserve System, Marriner S. Eccles.²⁵ A Mormon, Eccles came from an extraordinary family background: his father, David Eccles, attended no school, came as a boy of fourteen to Utah from the slums of Glasgow, died leaving an estate valued at \$7 million consisting of a variety of business enterprises, and was survived by two wives and twenty-one children. Marriner followed his father as a very successful entrepreneur in banking, construction, sugar refining, and other enterprises, and in embracing the ethos of laissez-faire capitalism. A leader of the western business establishment and a Republican who staunchly supported Hoover in 1928, he accepted the consensus view of businessmen that a new era of economic progress had come and that depression and panics were relics of an earlier time.

Marriner Eccles was in his early forties when the Great Depression struck. While able to keep his chain of banks free of failure, he keenly appreciated his own vulnerability and the desperate national situation. A period of self-examination led to rejection of the belief in self-corrective economic forces and to recognition that individual bankers were not able to halt deflation. A self-made man with little formal education—he had not completed high school—Eccles came to recognize his lack of economic understanding and reached out for new ideas. In 1931 he became acquainted with the “under-consumptionist” theory developed by William T. Foster and Wadill Catchings which attacked Say’s Law, and interpreted the theory in terms of his own experience in banking and other businesses. This led to recognition of the need for government action to raise purchasing power. By 1932, several years before the Keynesian revolution began to be felt, Eccles began promoting the concept of a compensatory fiscal policy, much to the consternation of his fellow bankers. In February 1933 he presented to the Senate Finance Committee a program for economic recovery involving deficit financing—in contrast to the testimony of a long list of prominent leaders of finance, industry, and other fields of endeavor, whose only recommendation was to balance the budget and hope for the best. Two years later, when comparing Eccles’s suggestions before the committee with the economic program of the New Deal administration, the poet/author Archibald MacLeish observed that Eccles “was not only a Mormon but a prophet.”²⁶ In January 1934 Eccles accepted an appointment as assistant to the secretary of the treasury, intending to serve in Washington for a maximum of sixteen months. He remained for seventeen years, returning to private life in Utah in 1951. The change in plans resulted from a major and unanticipated leadership role in the Federal Reserve System.

In mid-1934 Eugene Black resigned as governor of the Federal Reserve Board and was succeeded by Marriner Eccles in November. Eccles had made a strong impression on administration officials; his credentials as a successful

banker and industrialist with "enlightened," well-articulated views gave him high standing among the liberal intellectuals. When Roosevelt broached the subject of an appointment as governor of the Federal Reserve Board, Eccles replied that he would be interested only if the president would work for legal changes to correct serious deficiencies in the Federal Reserve System. The paramount problem was the relative impotence of the Federal Reserve Board and the powerful but concealed influence of private banking interests. The Open Market Committee provided for in the Banking Act of 1933 consisted of one member from each reserve district. Since members were designated by the Federal Reserve Bank boards of directors, each with a majority of private bankers, private interests had enormous yet unobtrusive influence over policy. Also, each Federal Reserve Bank continued to have the right to refuse participation in transactions recommended by the Open Market Committee. The body with ultimate responsibility, the Federal Reserve Board, could approve or disapprove the policies of the Open Market Committee but could not initiate open-market operations. The Open Market Committee could not itself execute its policy. The directors of the Federal Reserve Banks could obstruct policy but could not make it. These administrative arrangements seemed designed to avoid responsibility and maximize ineffectiveness. President Roosevelt gave his support to Eccles on banking reform legislation and announced his appointment as governor of the Federal Reserve Board.

A protracted and bitter legislative struggle ensued until a new banking law, the Banking Act of 1935, was adopted in August 1935. It was the biggest battle in Washington for Eccles, who was a willing combatant with an imperious manner. Senator Carter Glass, who played a vital role in the passage of the Federal Reserve Act in 1913 and was the Senate's resident authority on the Federal Reserve System, was not consulted by either Roosevelt or Eccles, and became hostile to both Eccles's confirmation as governor and the principal reform proposals. The governor of the Federal Reserve Bank of New York, George L. Harrison, joined Glass in opposing important legal changes; the reforms would shift power from the New York reserve bank to the board in Washington. Numerous prominent economists (including Oliver Sprague of Harvard, Edwin Kemmerer of Princeton, and H. Parker Willis of Columbia) and bankers (among them Winthrop W. Aldrich of Chase, James H. Perkins of National City, and James P. Warburg of the Bank of Manhattan) testified against Title II of the banking reform bill, which contained Eccles's reform proposals. Irving Fisher, however, gave the banking bill his enthusiastic support. Finally a new law, the result of much political strategy, pressure, and bargaining, emerged from the legislative process. A brief recapitulation of the reordering of central banking powers in the Banking Act of 1935 is in order.

1. A seven-member Board of Governors of the Federal Reserve System would replace the eight-member Federal Reserve Board on February 1, 1936.

- Neither the secretary of the treasury nor the comptroller of the currency would serve as ex officio members of the new board.
2. The Federal Open Market Committee would be reconstituted on March 1, 1936, with a membership consisting of the seven members of the Board of Governors plus five representatives of the Federal Reserve Banks, to be selected by the boards of directors of the Federal Reserve Banks according to a schedule of rotation.
 3. The chief executive officers of the Federal Reserve Banks would be designated as president and first vice-president on March 1, 1936. Their appointments by the boards of directors of each Federal Reserve Bank became subject to the approval of the Board of Governors.
 4. The Board of Governors was authorized to set reserve requirement percentages for member banks between the existing prescribed amounts and twice the prescribed amounts.
 5. The power of Federal Reserve Banks to make loans to member banks was broadened by authorizing them, under the regulations of the Board of Governors, to make advances not only on eligible paper but on any paper considered to be satisfactory.

Marriner Eccles was confirmed by the Senate as governor of the old Federal Reserve Board in April 1935 after surviving a close call in Senator Glass's subcommittee. Early in 1936 the nominees for the new Board of Governors, Eccles as chairman, were confirmed without hearings. The Board of Governors soon employed its newly acquired power to vary member bank reserve requirements. As noted earlier, the reserve requirement percentages were increased (once in 1936 and twice in 1937) to neutralize the enormous amounts of excess reserves held by the banks; although the economy was still operating far below its potential, there was fear of incipient inflation. The 1937–1938 recession that followed was subsequently fully debated and continues to be a subject of dispute. Blame has been placed on the increases in reserve requirements, following which the money stock shrank.²⁷ Eccles exonerated the increases in reserve requirements by maintaining that they did not cause money rates to rise more than fractionally and did not cut off credit to the economy. It was three months after the final increase in reserve requirements became effective that the production downturn developed, and private credit began to contract at the end of 1937 only after the recession started. Eccles saw the causation running opposite to what later came to be called the monetarist view: instead of credit contraction causing the recession, he contended that credit contracted as a result of the recession. In Eccles's view the blame belonged mainly on fiscal policy. The federal budget shifted from a \$4 billion deficit in 1936 to a small surplus for the first nine months of 1937, in part because of the introduction of social security taxes.

While fiscal policy was a new and controversial instrument which Eccles believed to be important and valuable, he of course appreciated the vital role of the money stock. It was just at this time that the theory of a compensatory fiscal program, put forward by Eccles and a group of government economists, began to gain allies in the academic community. The publication of Keynes's *General Theory* in 1936 had a bracing effect on the economics profession, particularly upon the younger faculty members and graduate students.²⁸

When Eccles began his career in government at the Treasury in 1934, his ideas were far from polished and benefitted greatly from the help of a bright young economist named Lauchlin Currie, a recent refugee from Harvard, who joined the Treasury at about the same time and who shared Eccles's views.²⁹ Currie had lost faith in the efficacy of monetary policy under depressed economic conditions after the abortive business upturn in early 1930, and began advocating deficit spending. The senior and strictly orthodox Harvard economics faculty frowned on such heresy; by joining other young Harvard instructors early in 1934 in supporting New Deal policies, Currie made himself persona non grata. At that time the influence of what came to be called Keynesian ideas on the economics profession was insignificant. Keynes made the case for expansionary policies in *The Means to Prosperity* (1933), in a widely read open letter to the president in *The New York Times* on December 31, 1933, and in a visit to Roosevelt in the summer of 1934, but it was not until the publication of *The General Theory* in 1936 that his thesis, in full theoretical regalia, caught fire in the profession and then gradually spread to the corridors of power.

When Eccles took over as governor of the Federal Reserve Board in November 1934, he took Currie with him to be assistant director of the Division of Research and Statistics. From then until 1939, Eccles and Currie had a close partnership, linked with other New Dealers, to apply expansionary policies. Eccles was the "outside" man who made speeches and did the talking to win support for the policies. Currie was the "inside" man who provided the research and analysis, discussed the ideas with Eccles and others in the inner circle of liberal advisers, and did the writing. Eccles was the practical man who had met payrolls, thought himself allergic to theory, and never read Keynes. Currie was the brilliant academician who had to some extent anticipated Keynes. Each on his own had reached conclusions similar to those of Keynes regarding fiscal policy. The appearance of *The General Theory* provided them with assurance and confirmation. Galbraith points out that through them the Federal Reserve was the point of entry for Keynes's ideas into Washington.³⁰ In 1939 Currie's reputation as an effective analyst resulted in his appointment as the first professional economist on the White House staff, where he served as economic adviser to Franklin Roosevelt until 1945.

Currie developed the theoretical case in support of the New Deal macroeconomic policies. He argued that incentives for investment needed artificial stimulation and that government deficits were needed to propel the economy forward. He presented numerical estimates of the amounts of stimulus needed and suggested preferred types of spending for maximum effectiveness. Monetary and fiscal policies were necessary and complementary means for achieving economic growth and stability.

The recession of 1937–1938 was a stinging setback requiring reevaluation of New Deal policies. By the fall of 1936, at the time of Roosevelt's reelection, the economy was recovering rapidly. When the economy began suddenly to collapse in September 1937, with a particularly sharp fall in industrial output, and accompanied by a plunging stock market, the recovery program was attacked for too much or too little intervention. Currie's analysis led him to conclude that insufficient planning had been done. He viewed the recovery in 1936 as too rapid, due particularly to the large size of the net federal contribution, which was exaggerated by the bonus paid to veterans of World War I over the president's veto, and to private inventory accumulation. Then in 1937 there were declines in the elements that had been expansionary, most notably a drastic decline in the government's net contribution as tax collections rose under the Social Security Act, along with a higher level of private savings.

In his analysis of the recession of 1937–1938 Currie dealt at some length with the monetary policy explanation, the thesis that the increase in reserve requirements together with the sterilization of gold inflows by the Treasury caused or contributed to the decline. He pointed out that from 1933 to 1936 the money stock expanded rapidly. By 1936, with excess reserves exceeding \$3 billion, it was prudent for the body responsible for preventing injurious credit expansion to take the precautionary step of raising legal reserve requirements. It was desirable to remove the fear of monetary inflation and inventory stockpiling. He examined the argument that the higher reserve requirements led banks to sell bonds, and then, with bond prices weak, new bond issues were discouraged and thus capital investment declined. This case fell for lack of supporting evidence. In the end Currie found monetary policy innocent of causing or abetting the recession. He admitted that, as matters turned out, the rise in reserve requirements could perfectly well have been postponed, but this was hindsight and was not evident in May 1937 when the last of the increases in reserve requirements became effective. This view that monetary policy in 1937 was not responsible for the recession is of course diametrically opposed to the interpretation of many others, including Friedman and Schwartz, who found it to have had a serious deflationary effect.

One final point. The Great Depression has been widely interpreted as demonstrating the failure of monetary policy. Not so, say the Friedmanites;

it was not tried (or not used correctly). Perhaps then it showed the failure of fiscal policy. Not so, say the Keynesians, it was not tried (or not used correctly).

Retrospective Evaluations

The events of the 1930s fundamentally altered economic thinking and policy-making. The way the Great Depression came to be understood led to a more active interventionist governmental role in economic life. With the passage of time, the depression decade has been revisited by economists, and it seems safe to say even after half a century that the work of reexamination has not ended. In 1963 Friedman and Schwartz presented a thorough study and reinterpretation of the period, challenging the views then generally accepted. In the 1970s Charles Kindleberger and Peter Temin disputed some of the Friedman/Schwartz conclusions. In 1981 papers sponsored by The Center for Research in Government Policy and Business at the University of Rochester were published under the title *The Great Depression Revisited*. Our purpose here is to pluck some of the salient points from the store of understanding and disputation to provide some indication of the recent state of informed opinion.³¹

The question of causality between money and income—do changes in money cause changes in the economy (monetary hypothesis) or do changes in the economy cause changes in money (spending hypothesis)—is the central issue addressed by Friedman and Schwartz in their study of the 1929–1931 contraction. They point out that the experience of those years strongly enhanced the view that money follows the course of business activity. It was clear that the Federal Reserve System, contrary to its intention, failed to keep the money stock from declining sharply. The system saw itself and was seen by many others to be overwhelmed by nonmonetary forces; it was considered powerless to prevent the steep decline in the money stock that resulted from the collapse of the economy. The Keynesian income–expenditure theory was advanced to explain the economy's miserable performance and to account for the failure of monetary policy. This interpretation—that money is not the causal factor but a consequence of income changes—is quite wrong according to Friedman/Schwartz.

The main conclusion reached by Friedman and Schwartz is that the 1929–1931 contraction actually strengthens the line of causality running from monetary changes to economic changes. They assert that during the contraction the Federal Reserve System could have pursued policies to keep the money stock from falling or to raise it. Such policies had been provided for when the system was founded and had been carried out in prior years. The failure to carry out such policies in a timely and sufficient manner is

attributed to the problems of bureaucracy, division of power, and personalities within the Federal Reserve System. Friedman/Schwartz maintain that until late 1931 a truly expansionary monetary policy would not have conflicted with the policy of adhering to the gold standard. In their view the situation would have been better handled in the absence of the Federal Reserve System as in 1907. Initially the reaction to the bank failures would have been greater and banks would very likely have restricted convertibility of deposits into currency, but the crisis would have been shortened and economic recovery would have been possible in a few months. The experience of the 1929–1931 contraction is seen as consistent with the totality of the Friedman/Schwartz study of the whole period from 1867 to 1960. They are careful not to exaggerate the main point, but they insist on the main point.

While the influence running from money to economic activity has been predominant, there have clearly also been influences running the other way, particularly during the shorter-run movements associated with the business cycle. . . . Changes in the money stock are therefore a consequence as well as an independent source of change in money income and prices, though, once they occur, they produce in their turn still further effects on income and prices. Mutual interaction, but with money rather clearly the senior partner in longer-run movements and in major cyclical movements, and more nearly an equal partner with money income and prices in shorter-run and milder movements—this is the generalization suggested by our evidence.³²

In 1976 Peter Temin asked, “Did monetary forces cause the Depression?” His answer was no with respect to the crucial two-year period from the October 1929 crash to the September 1931 British departure from gold. Temin warned against drawing firm conclusions from the theories used to explain the experience of the Depression because they rely heavily on variables which cannot be observed, such as the effect of bank failures on confidence which discouraged business investment and increased the risk of holding long-term securities, and caution by businessmen induced by rapidly falling raw materials prices. He is not impressed by the Friedman/Schwartz contention that the Federal Reserve could have mitigated the severity of the Depression substantially if only it had pumped out enough high-powered money. He observes that to claim that a policy was not used does not prove that it would have been successful. On the basis of the available data, Temin undertook to compare the two main theoretical approaches and found the Keynesian spending hypothesis to be a better fit than the Friedman/Schwartz money hypothesis: “It is more plausible to believe that the Depression was the result of a drop in autonomous expenditures, particularly consumption,

than the result of autonomous bank failures."³³ While Temin favors the spending hypothesis, his emphasis on a shift in the consumption function as the key element is a noteworthy variation on the Keynesian theme.

Critics of Temin consider his version of the Friedman/Schwartz monetarist hypothesis to be in the straw person category.³⁴ Friedman/Schwartz contend that the Depression would not have been so severe if the Federal Reserve had increased the monetary base sufficiently to compensate for the drop in the deposit/currency ratio. But this is not what concerns Temin, so he largely ignores it—his question is the direction of initial causation. Temin is faulted for misunderstanding the monetary hypothesis by falsely assuming it to hold that explicit restrictive action was taken from 1929 to 1931, something that Friedman/Schwartz clearly deny.

The range and complexity of the analytical discussion of the period of the Great Depression precludes an attempt to summarize the present state of the controversy. In the hands of specialists the field is esoteric and requires substantial theoretical preparation. It is possible, however, to give some indication of the broad picture.³⁵

The monetary (monetarist) explanation makes the money stock the prime mover of shifts in aggregate demand. Changes in velocity are fully acknowledged but it is emphasized that any major change in velocity is almost certainly preceded by a prior change in money; that is, if the rate of growth of M rises, then V will rise; if the rate of growth of M falls, or if M decreases, then V will fall. The responses of velocity to changing monetary conditions vary through time due to changes in socioeconomic conditions, including random fluctuations. If the Federal Reserve authorities had responded to the stock market crash by pressing firmly and persistently on the money accelerator, they could substantially have mitigated the decline in velocity. Leading advocates of the monetary account take the position that it gives a better explanation than the nonmonetary account, although it has not been able to provide a complete understanding. The various nonmonetary factors are not considered to have been demonstrated as valid, so while they have not been proven wrong they are not accepted.

A diametrically opposed viewpoint rejects monetary influences during the 1929–1931 period and makes nonmonetary causes responsible for the economic collapse. According to this thesis, autonomous declines in spending on output caused a decrease in velocity. Then, as a result of the nonmonetary shocks to the economy and the fall in V , there followed an endogenous reduction in M .

An intermediate or eclectic view incorporates both monetary and nonmonetary factors in causal roles. A relatively small decline in the money stock during the early stages of the Depression was accompanied by a considerably larger drop in velocity. Changes in M fail to provide an adequate explanation; it is necessary to recognize and identify autonomous changes

in spending to interpret the economy's performance satisfactorily, for an exogenous change in velocity requires an explanation in terms of nonmonetary variables. The quantity theory alone is inadequate or insufficient; to explain nonmonetary forces it is necessary to study categories of expenditure, a process for which the Keynesian income-expenditure approach was designed.

A full explanation may be beyond the grasp of researchers. One reason why the explanations are incomplete may be the failure to allow for international monetary influences through changes in the exchange rate, capital flows, and liquidity crises.³⁶ The idea that the Federal Reserve authorities were powerless to influence economic events has been rejected. That the Federal Reserve was solely responsible for the Depression is also a highly doubtful thesis. In other words, money mattered, but it was not all that mattered.