

CHAPTER 2

Growing Pains: Being Born after Panic and Experiencing Childhood in the Great Depression—December 1913–August 1935

The Federal Reserve Act created a quasi-public entity that would establish an “elastic currency,” serve as the lender of last resort, mute the seasonal movements in interest rates, supervise member banks, manage the payments system, and encourage check clearing at par without charge.¹ The law intended the new agency to foster much greater financial stability. This second chapter traces out the patterns of monetary policy during the first 22 years of the Fed’s existence.

Founding the Federal Reserve System

The act specified that all member commercial banks had to subscribe to an amount of stock in their own regional Federal Reserve bank equal to six percent of their capital and surplus. At least eight but no more than 12 regional Reserve banks were to be created, on the argument of Senator John F. Shafroth (Democrat, Colorado) that no bank should be more than a day’s train ride from its Reserve bank. That way in the event of a run on a bank, a banker could catch a train in the morning and cable back on the same day that enough currency had been secured from a Reserve bank in exchange for eligible collateral to satisfy the nervous depositors upon the banker’s return the next day. To minimize hurt feelings, 12 Reserve banks ultimately were selected. The act established the Federal Advisory Council to ensure that bankers’ concerns were heard.

A seven-member Federal Reserve Board in Washington would oversee the system. Table 2.1, taken from the Board website, lists the names of the first seven heads of the Board along with the dates of their terms. The whole Board was composed of the Secretary of the Treasury and the Comptroller of the Currency as *ex officio* members, and five other members appointed by the president with the advice and consent of the Senate.

Table 2.1 Heads of the Federal Reserve Board, August 10, 1914, through August 22, 1935

<i>Head</i>	<i>Dates of Term</i>
Charles S. Hamlin	August 10, 1914–August 9, 1916
W.P.G. Harding	August 10, 1916–August 9, 1922
Daniel R. Crissinger	May 1, 1923–September 15, 1927
Roy A. Young	October 4, 1927–August 31, 1930
Eugene Meyer	September 16, 1930–May 10, 1933
Eugene R. Black	May 19, 1933–August 15, 1934
Marriner S. Eccles	November 15, 1934–August 22, 1935

Note: The head and vice head were designated governor and vice governor before new legislation was enacted on August 23, 1935. *Source:* Board of Governors of the Federal Reserve System, “Membership of the Board of Governors of the Federal Reserve System, 1914–Present.” Retrieved from <http://www.federalreserve.gov/aboutthefed/bios/board/boardmembership.htm>.

The act presupposed the “real bills doctrine,” which held that the central bank should accommodate the needs of trade and agriculture by discounting only self-liquidating receipts of commercial bank loans or other paper arising from business transactions. This approach differed from making eligible speculative instruments such as equities or government securities, both of whose prices could vary appreciably with market conditions. The act also greatly constrained the Federal Reserve by presuming the continued automatic operation of the gold standard. An assumed fixed dollar price of gold ensured that flows of that metal between countries would equilibrate international payments and keep domestic prices relatively steady over long intervals of time.

As J. Alfred Broadus, then president of the Richmond Fed, pointed out:

In one of the great ironies of monetary history, by the time the Federal Reserve banks actually opened for business in 1914, the outbreak of World War I in Europe had brought about widespread suspension of national commitments to maintain the fixed currency price of gold. Because the United States remained neutral until 1917, it was able to remain on the gold standard throughout the war, and, although it embargoed gold exports, it continued to fix the dollar price of gold at \$20.67 per ounce.²

During the war, authority shifted to the Treasury, which mandated low-cost financing. The Fed had to keep interest rates down, though it refrained from buying Treasury securities.

The Federal Reserve System Attaining Its “High Tide”

After the Treasury relinquished control over interest rates in late 1919, a power struggle ensued between the Board and the Reserve banks, which won some of the early rounds. The New York Reserve Bank was especially influential. Its first head, then also called governor, was Benjamin Strong, who served from November 1914 until his untimely death in October 1928. Although without a college degree, he had the experience that gave him expertise in international banking, and he was a charismatic leader. He took it on faith that the New York Reserve Bank was the natural locus of system authority, since financial markets were concentrated there.

Strong disliked the low Treasury interest rates that created a virulent inflation during and after the war. By November 1919 he thought that the time had passed for raising rates without precipitating a crisis. Thus, he probably would have opposed, and perhaps moderated, the ill-fated hike in the rates charged by the Reserve banks on discount loans of funds to commercial banks. In New York the discount rate went from 4 to 7 percent during the first half of 1920. But for health reasons Strong had to take a 13-month leave of absence starting in mid-December of the previous year. Sure enough, that policy tightening contributed to the sharp 1920–1921 recession. The Fed also made the recession longer and more severe by refusing to lower discount rates for more than a year after the peak in the business cycle in January.

That experience disillusioned Strong with having the discount rate always maintained at a penalty above short-term market rates and with the underlying real bills doctrine. In May 1922, he encouraged the Reserve banks to form a committee of governors under his chairmanship to coordinate the purchases and sales of government securities. Smaller Reserve banks especially favored the move because the pooling of returns on the Fed's portfolio of open market securities helped them acquire the earnings needed to pay the dividends to their member bank shareholders.³ The Board—particularly member Adolph C. Miller, its only PhD economist—resented and often opposed the influence of the New York Bank, including its heretical departures from the real bills doctrine. Accordingly, the Board, seemingly feeling slighted, in March 1923 disbanded that committee and originated the Federal Open Market Investment Committee, which, although comprised of the same governors, would have to operate under the aegis of the Board. The extent of the Board's authority would remain in dispute throughout the remainder of the decade.

The *Tenth Annual Report* for 1923 reflected the advances in the Board's thinking on monetary policy. It recognized that, along with discount lending, open market purchases and sales of Treasury securities also were a powerful tool that should be consistent with a posture of the central bank designed to promote business activity. And in advancing loans, the quantity of the paper discounted, it was thought, was as crucial as its quality in determining the central bank's appropriate extension of credit. The successful economic performance during most of the rest of the 1920s, based on a monetary policy implementing these principles, represented the "high tide" of the Federal Reserve, in the words of Milton Friedman and Anna Schwartz.⁴

Strong's leadership was instrumental in this outcome, according to Liaquat Ahamed,

The Fed's primary goal should be, he believed, to try to stabilize domestic prices. But he thought that it should also respond to fluctuations in business activity—in other words, the Fed should try to fine-tune the economy by opening the spigot of credit when commercial conditions were weakening and closing it as the economy strengthened. . .

Led by Strong, the Fed had undertaken a totally new responsibility—that of promoting internal economic stability.⁵

Strong encouraged a program of open market purchases in 1927 to stem a gold drain from Europe. But as Adolph Miller would later emphasize, the policy easing

to help Britain to stay on the gold standard also stimulated speculation in the stock market. Robert L. Hetzel wrote:

The stock market boom in the last half of the 1920s prompted the next instance of purposeful deflation after 1919–1920. In the 1920s, gold inflows rather than advances from the discount window became the primary source of Federal Reserve credit. Policymakers saw the rise in stock prices after 1925 as evidence that gold inflows circumvented the real bills policy.⁶

Strong's worsening illness followed by his death in October 1928 contributed to the leadership vacuum, and policy continued to drift. To make matters even worse, a conflict over how to deal with ever-rising equity prices flared up in 1928–1929 between the Reserve banks, especially New York, and the Board. The banks wanted not only to continue open market sales of Treasury securities but also to raise their discount rates to constrain security lending by commercial banks. The Board, though, denied numerous such requests, on the grounds that business activity in general would be impaired. Instead, it favored public disapproval of stock-market speculation through moral suasion and more direct action in the form of administrative pressure on member banks.

Barry Eichengreen recently well summed up the situation:

The question then was whether the Fed should raise interest rates in response to the rise in the stock market, in order to prevent development of even more serious financial imbalances and risks. Alternatively, it could continue to direct monetary policy to the needs of the real economy and address financial imbalances through other means. It could rely on what today we would call “macroprudential policy,” and what contemporaries called “direct pressure,” that is, attempting to limit bank lending to financial markets directly. . .

Ultimately, the Fed chose the first alternative, raising rates. The consequences would be far-reaching.⁷

The Federal Reserve System Failing in the Great Depression

Stock prices crashed in October 1929. The economy already had reached a peak that August, whereupon economic activity began a protracted slide. Then, in June 1930 President Herbert Hoover signed into law the ill-conceived Smoot-Hawley tariff, which appreciably raised duties on imported goods. Foreign countries soon retaliated, damping demand for US exports. From 1929 to 1933, income in current dollars dropped by more than one-half. Average prices of goods and services in the national income accounts fell in excess of one-quarter, so real income adjusted for the declining prices lost more than one-third. Unemployed workers skyrocketed to a quarter of the labor force. The associated toll in human misery was incalculable.⁸

The Great Depression initially spawned the development and intellectual ascendancy of the Keynesian doctrine, which was named after the thought of British economist John Maynard Keynes (1883–1946). He published *The General Theory of Employment, Interest and Money* in 1936, and it took the economics profession by storm. Keynes's vision—to use Joseph Schumpeter's term—can be briefly summarized:

1. A private capitalist economy is basically unstable, and subject to shifting spending propensities that frequently displace it from levels of production consistent with full employment. Self-correcting mechanisms are quite sluggish and weak, if not at times nonexistent.
2. Fiscal policy—variations in government spending and taxation—has a rapid and predictable effect on aggregate spending. Frequent changes in fiscal policies can provide the necessary balance wheel to counter variations in private spending and production.
3. The public's demand for money can exhibit considerable instability relative to aggregate spending, potentially rendering even those monetary policy actions that raise the stock of money but do not lower interest rates impotent in spurring overall spending. Indeed, a "liquidity trap" can occur when interest rates are so low that everyone expects them to rise in association with capital losses on security prices. In that situation, everyone prefers holding money rather than securities, putting a floor under interest rates regardless of the central bank's attempts at more expansive policy.
4. Finally, an outgrowth of the modern liberal tradition as it developed in Western countries is the view that in a democratic nation, political power will end up in the hands of people who will use it to carry out the public interest, assuming politicians are provided the best available economic advice.

After the Second World War, economic scholarship, public opinion, and political sentiment all put considerable weight on governmental efforts to keep unemployment low. That attitude stressed high employment even at the expense of stable prices. Simply put, no political consensus existed for fighting inflation on the backs of the unemployed. The conquest of the political sphere by the Keynesian vision in the United States was marked by the passage of the Employment Act of 1946. It charged the president, and thus the government, with maintaining "maximum employment, production, and purchasing power." It also created the president's Council of Economic Advisers.

Since he published his major work, many observers have commented on the prophetic irony of the following passage from the *General Theory*:

The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back.⁹

The Fed assumed a pivotal, not a peripheral, role in the next notable intellectual repercussion of the Great Depression, albeit one delayed almost 30 years. It came in 1963 with the revisionist interpretation put forth by Milton Friedman and Anna Schwartz in *A Monetary History of the United States: 1867–1960*. The authors attributed the Great Depression mainly to the massive contraction between 1929 and 1933 in the broad M2 measure of money composed of currency and all bank deposits.

Their monetarist vision turned the Keynesian one on its head:

1. A stable monetary environment, characterized by slow, steady growth in money, will ensure that a private capitalist economy will be reasonably steady. Automatic corrective forces reliably will return production over time to levels consistent with full employment.
2. Fiscal policy actions have rather minor and unpredictable effects on overall spending. Besides, lags in recognition of the problem, in implementation, and in the effect on the economy generally would render them harmful in any event.
3. The demand for money relative to current dollar spending is predictable in the long run. Hence, changes in money growth have major effects on the expansion of aggregate spending, which show up predictably over time as variations in the rate of inflation. But the effects of changes in money growth on spending are long and variable, so that the short-run impact of ups and downs in money growth on spending is unpredictable.
4. Given the uncertain short-run effects of changes in money growth as well as the structure of incentives facing politicians, the government can't be trusted to use its monetary policy stabilization tool in the public interest. Monetary policymakers should be subjected to a legislated rule specifying a low, constant rate of money growth.

To be sure, the publication of a book of economic history may seem like a small event. But Friedman's insistent and persuasive personality helped to spread the word. That doctrine also appeared in his *Newsweek* columns, which reiterated the message of his earlier book of advocacy.¹⁰ The incisive monetarist vision, though initially unpopular, ultimately changed the theory and practice of policymaking. The book by Friedman and Schwartz blamed the Fed's disastrous monetary policy on the illness and subsequent death in October 1928 of Benjamin Strong, the president of the Federal Reserve Bank of New York. The last two paragraphs of their chapter on the Great Contraction defending that view contain a prophetic irony because the words also apply to the future acceptance of the monetarist doctrine itself:

The foregoing explanation of the financial collapse as resulting so largely from the shift of power from New York to the other Federal Reserve Banks and from personal backgrounds and characteristics of the men nominally in power may seem farfetched. It is a sound general principle that great events have great origins, and hence that something more than the characteristics of the specific persons or official agencies that happened to be in power is required to explain such a major event as the financial catastrophe in the United States from 1929 to 1933.

Yet it is also true that small events at times have large consequences, that there are such things as chain reactions and cumulative forces . . . Because no great strength would be required to hold back the rock that starts a landslide, it does not follow that the landslide will not be of major proportions.¹¹

To see how the monetarist vision derived from the *Monetary History*, let's focus more closely on the authors' interpretation of the Great Depression. In summary, they argued that the decline of current dollar, or nominal, income from 1929 to 1933 of more than one-half was accompanied by a drop in M2, the broad quantity of

money, of about one-third. They asserted that the direction of causation dominantly went from money to income, not vice versa, since other forces acted to depress the money stock. Indeed, because the Federal Reserve was ultimately responsible for the monetary contraction, it bears primary responsibility for the severity and length of the Great Depression.

Friedman and Schwartz emphasized that the decline in the money stock over the period was associated with three waves of bank failures. To be sure, the failures did not affect the sum of bank accounts at the Reserve banks, which are called reserves, plus the outstanding amount of currency. That sum measures the monetary liabilities of the Fed that provide the base for money creation. Thus, the sum of reserves and currency can justly be called high-powered money. It continued to rise on balance over the years in question. But the amount of money that it could support was sharply reduced by the reaction of the public and the banks to the waves of bank failure.

The crises of confidence in the safety of the public's deposits at commercial banks induced people to try to exchange their bank deposits for currency, which lowered the ratio of deposits to currency. Such runs on banks depleted bank reserves as depositors acquired cash, forcing banks to further liquidate deposits, and also induced banks to sell assets in order to raise the funds people were demanding in currency. In the process, the bank deposits of the buyers of the securities were run down, reducing still more the ratio of deposits to currency. The fire-sales of bank securities additionally lowered the market value of remaining bank assets, converting a situation of bank illiquidity into one of bank insolvency. Many banks ended up going out of business. Moreover, in response to the failures, the remaining banks were induced to hold more reserves as fractions of their deposits than the regulations required. They held these excess reserves as a precaution for their own protection. This decrease in banks' desired ratio of deposits to reserves together with the decline in the public's desired ratio of deposits to currency combined to reduce dramatically the amount of broad money that the still growing volume of high-powered money could support.

Notice that this explanation of events falls in the class of what the late Harvard philosopher Robert Nozick called "invisible-hand explanations"—in which the outcome of human interactions bears no resemblance to the intentions of the actors.¹² Adam Smith's account in his renowned 1776 book *The Wealth of Nations* of why the operation of a system of market incentives furthers the general welfare is the prototype of this type of explanation: "Every individual intends only his own gain, and he is in this, as in so many cases, led by an invisible hand to promote an end that was no part of his intention." But in contrast to this general rule applying to market activity, the self-interested actions of people in bank panics gave rise to disastrous, rather than beneficial, overall results, pointing to a structural flaw in the monetary arrangements at the time—in particular the lack of deposit insurance. (The Banking Act of 1933 corrected this defect by establishing a deposit insurance fund, which the Banking Act of 1935 reshaped and named the Federal Deposit Insurance Corporation, or FDIC.)

What may at first glance seem curious is Friedman and Schwartz's transformation of this invisible hand explanation of the bank panics into a visible hand explanation in which the blame is placed on the Federal Reserve. Isn't blaming the Fed for the bank panics like blaming a passerby—who refuses to jump in the water—for the drowning of the passengers of a capsized boat as they claw at each other in a

futile effort to save their own skins? I think not, since in this instance the Fed had been appointed as the lifeguard. Lifeguards certainly can be held accountable for sins of omission as well as sins of commission. The Federal Reserve failed to act as the lender-of-last-resort to the commercial banks to provide the borrowed reserves that would have raised high-powered money. More importantly, those actions would have helped to provide the funds to satisfy the public's elevated demands for currency, at least mitigating the severity of bank panics.

But holding a lifeguard morally responsible for a drowning is different from saying that the lifeguard caused the drowning in a scientific sense. More satisfying as a scientific explanation is that stormy seas, say, caused the boat to capsize and hence the drowning. The economic historian Peter Temin, a professor at MIT, advanced a counter-argument from a Keynesian perspective in his 1976 book.¹³ He asserted that the bank panics and associated decline in the quantity of money—the drowning in my analogy—was largely the result of the collapse of spending—the stormy economic seas. Even in Friedman and Schwartz's framework, the sharp decline in spending and the drop in business activity, accompanied by record business bankruptcies, clearly weakened both the soundness of bank loans and banks' resiliency in the face of enhanced public concerns.

What, then, explains the stormy economic climate, that is, the decline in output and prices in that interval from the autumn of 1929 to September 1931? To be sure, in October 1931 "the Federal Reserve in the United States raised interest rates to defend its gold reserves and stay on the gold standard, setting off further declines in output and exacerbating the banking crisis."¹⁴ But before then, Temin pointed to the sizable dip in consumption and investment demands, only part of which he attributed to the declines in income and wealth associated with the crash in stock prices. The rest largely owed to unexplained shifts in spending propensities relative to income of the kind Keynes emphasized. Surely, too, the declines in income and market transactions in dollar or nominal terms early in the Great Depression reduced the public's need for money to facilitate the diminished transactions. The fall in the nominal stock of money no doubt in part reflected this reduced money demand that followed the collapse in nominal income and spending. Indeed, if the Fed had permitted the nominal supply schedule for money to have shifted back by more than the nominal demand schedule, then a rise in the "price" of money—short-term interest rates—would have taken place. Instead, the observed fall in short-term interest rates on Treasury bills from the autumn of 1929 to the summer of 1931 suggests that during this period the induced declines in the public's demand for money overshadowed the reductions in supply caused by the Fed.

Yet Friedman and Schwartz downplayed the role of the collapse of the economy in inducing the decline in the stock of money from 1929 to 1933. By establishing that the primary line of causation instead always goes from movements in money to movements in nominal income, they could counter criticisms that money doesn't really matter and that the historical correlation only reflects the passive adaptation of movements in money to movements in income that, in turn, are caused by other forces. However, in my view, the evidence from the Great Depression does not provide strong support for this general monetarist proposition.

My own judgment about the truth or falsehood of the monetarist vision stemming from Friedman and Schwartz's interpretation of the Great Depression obviously had precious little to do with the acceptance of monetarist ideas. Of much more

significance was the attractiveness of the overall monetarist vision. Economists, like historians, have always engaged in debates regarding technical minutia without having a discernible impact on the course of economic, or historical, developments. But the visionary can have a substantial impact if the conditions are ripe. The worldwide inflationary climate of the second half of the 1960s and the 1970s proved singularly amenable to the acceptance of the monetarist vision. And a prominent proponent of monetarist ideas was Allan H. Meltzer.

Writing more than 25 years after Peter Temin, Allan Meltzer of Carnegie Mellon University and the American Enterprise Institute published in 2003 an 800-page first volume of a history of the Federal Reserve through its accord with the Treasury Department in March 1951. In 2009 he issued a 1,300-page second volume of Fed history going through 1986. Well before those studies, Meltzer had already attained distinction in a long academic career as well as achieved broad influence as a polemist. Meltzer and Karl Brunner were the founding members of the Shadow Open Market Committee, which first met in September 1973. In succeeding years it maintained a monetarist perspective that was highly critical of the Federal Reserve's design, implementation, and communication of monetary policy.¹⁵

His first volume contained still another take on the Fed's role in the Great Depression. Meltzer thought that both monetary and nonmonetary factors combined in a uniquely powerful way—much as a perfect storm—to cause the sustained economic collapse but that the Fed handled the situation very poorly:

The extreme positions—that monetary policy was the only cause or that monetary policy played no role—are difficult to sustain. A more plausible explanation is that the depth and severity of the Great Depression were the consequence of a series of shocks that the Federal Reserve neglected or failed to offset completely. The shocks include French gold policy, banking panics, increased demand for currency, departure of Britain from the gold standard, the stock market decline, failure of banks in Austria and Germany, collapse of United States export markets in Latin America, the effects of tariffs and retaliation on prices and thus on gold movements, and other events. Some of these events are both the effect of prior changes and the proximate cause of subsequent changes. We are unlikely to develop a complete list of “true” causes that operated independently of other events.¹⁶

Meltzer explained the Federal Reserve's ineffectiveness in limiting the severity of the Great Depression by its acceptance of the Burgess-Riefler doctrine. It was named after W. Randolph Burgess and Winfield Riefler—staff members at the New York Reserve Bank and the Board. After the theory had been sketched out in the Federal Reserve's *Tenth Annual Report* for 1923, those two economists wrote books developing their ideas in more detail.¹⁷

The operation of that doctrine in practice supplemented and partly supplanted the workings of the gold standard and the real bills doctrine. The Burgess-Riefler doctrine described commercial banks as reluctant to tap the discount window for borrowed reserves. The theory posited that the amount of bank borrowing of reserve balances from the Fed thus was positively associated with short-term market interest rates. Indeed, it held that the degree of tightness or ease of monetary policy itself could be indexed by whether borrowed reserves were high or low. A neutral level of borrowing was around the \$500 million level. Higher levels of borrowing would

induce individual banks to become more restrained in their lending and investing so as to avoid a posture of continuous indebtedness to the Federal Reserve. Rather than borrow reserves from the Fed out of a profit motive, banks instead would only come to the Fed hat in hand when they were in need of funds.

Thus, the Fed's open market sales of securities that extinguished reserves were a much more important reason for bank borrowings than the financial incentives that may have been created by rates on bank assets relative to the Fed's discount rate on its advances of reserve funds. Similarly, open market purchases of securities that inject reserves would induce banks to repay their Fed borrowings. Open market operations gained ascendancy as a policy instrument compared with the discount rate, which no longer was seen as having to be set at a penalty.

Meltzer correctly emphasized that interest rates when adjusted for expected inflation, or real interest rates, are much more influential in effecting the borrowing and spending of the public than the nominal rates observed in financial markets. But he asserted that the Fed ignored this crucial distinction by using the level of borrowed reserves to gauge the stance, and the associated thrust, of monetary policy.

Over nearly the first year of the downturn after the August 1929 peak in economic activity, the Fed followed the Burgess-Riefler doctrine in pursuing the lower borrowing all right that contributed to the decline in market interest rates, but it did not do so aggressively enough to keep high-powered money—which Meltzer calls the monetary base—from declining. But once borrowed reserves had gotten low enough and excess reserves had risen appreciably in mid-1932, the Fed gave up on systematically buying more securities in volume to inject the additional reserves that would have offset their decline stemming from the incipient currency drain. The Fed didn't do so on the grounds that banks would just allow the funds to sit idle in even larger excess reserves. Banks could not possibly use those funds to make productive loans that weren't demanded in any event or to purchase securities whose yields, at least on the low-risk short end, already were too low to be profitable.¹⁸

Meltzer, however, argued that any such notion of pushing on a string simply reflected an intellectual error. In Meltzer's opinion, had the Fed bought substantially more securities for its portfolio, the heftier increase in the monetary base would only initially have gone into excess reserves. Over time, private spending would have been stimulated and deposits and required reserves augmented, even with the very low nominal market interest rates that accompanied monetary "ease" but nonetheless with the cripplingly high real interest rates brought about by the severe price declines, that is, deflation. Meltzer, by contrast, considered the deflation to have been helpful. The price declines would have meant an even larger increase in the real monetary base after an adjustment to incorporate the effects of those changes in prices, implying a further spur to the monetary stimulus. Thus, the Great Depression, even well after it had gotten severe, could have been significantly cushioned and shortened.

I have my doubts. I just don't understand how the simulative mechanism is supposed to work. Ben S. Bernanke, Vincent R. Reinhart, and Brian P. Sack wrote an encyclopedic treatment of the possibility of monetary stimulus under conditions of extremely low short-term interest rates, a saturation of excess reserves, and deflation.¹⁹ I interpret their research as suggesting that once the conditions of the Great Depression had been established, and short-term interest rates driven to zero, massive

central bank purchases of securities in the open market, which would have elevated excess reserves further, would have imparted only very minor, if any, stimulation to the depressed private spending.

The experience in Japan—with the two-decade-long deflation of prices resulting stagnation in economic activity despite a half-decade of large-scale asset purchases early in the new millennium and its reestablishment of late—surely is not encouraging in this regard. After the approach of short-term interest rates to zero in 1999, the Bank of Japan made the admitted miscue of temporarily tightening in late 2000. But it soon repented and in March 2001 announced a zero interest rate policy along with a policy of massive purchases of securities. Thus, it did engage in a program of what came to be called quantitative easing that enlarged banks' excess reserves, thereby significantly augmenting the monetary base, but, as Chapter 13 will argue, to no avail. Both policies officially ended just five years later in March 2006. In the case of “operation twist” in the United States in 1961, discussed in the next chapter, the Fed had sold Treasury bills to raise short rates to attempt to support the dollar's exchange rate but had bought longer-term Treasuries to try to reduce long rates and spur economic activity. It had little impact, though the Treasury's enhanced issuance of long-maturity securities at the same time didn't help. And the evidence from the Fed's recent turn to quantitative easing after the financial meltdown, while still being assessed, arguably supports this view given the tepid recovery.

To account for the severe weakness in aggregate demand once the Great Depression got going, we saw that Temin, like Keynes, emphasized drops in autonomous spending, whereas Friedman and Schwartz pointed to bank panics and the resultant destruction of deposits, while Meltzer identified the Fed's focus on member bank discount-window borrowing as forestalling massive open market operations. I am advancing different arguments. I place the blame for the start of the downturn, the stock market crash, and the early development of the Great Depression squarely on the lagged effects of the restrictiveness in monetary policy in 1928 and much of 1929 that the Fed established to resist the stock market boom. I think, though, that the degree of monetary restraint in the late 1920s is understated by the flattening of M2 during 1929 noted by Friedman and Schwartz or even by the \$625 million rise in discount borrowings over the four years prior to October 1929 mentioned by Meltzer.²⁰ The degree of policy restraint is, I believe, far better captured by the near doubling of the interest rate on Treasury bills in the two years after the summer of 1927.²¹ Then, simply as a policy judgment, albeit constrained by the rules of the gold standard, the Fed was much too halting in forcing short-term interest rates to zero by buying securities in volume.

The conclusion that comes to my mind is drawn from modern macroeconomic theory. Assume that the initial collapse in economic activity largely *was* the delayed result of the earlier increases in Treasury bill rates on spending rather than because of other monetary factors and that the drop in the nominal money stock *was* mostly induced by the fall in nominal income. Despite these presumed facts—in fact, *precisely because of them*—the Federal Reserve still should be faulted for not reacting to the decline in the money stock. To be sure, the Fed should not have withdrawn reserves in order to raise Treasury bill rates so much in the two-year run-up to October 1929. Yet even taking that mistake as a given, had the Fed engaged in massive purchases of securities in the open market soon thereafter, even from October 1931 to February 1932 after England left the gold standard, it would have significantly

expanded the amount of reserves and high-powered money.²² If it had done so, the sellers would have received the payments in bank deposits backed by new reserves much sooner. The Fed then would have injected much more nonborrowed reserves into the banking system earlier in the 1930s, thereby easing liquidity conditions and lowering short rates more and faster from their peaks in 1929. Such actions would have stimulated private spending and lessened the severity of the later bank panics. But before February 1932 the Fed instead failed to make large-scale purchases of securities in the open market. And after short-rates finally had been driven to zero in mid-1932 when the Fed ceased sizable open market purchases, the ongoing contractionary forces could not have been restrained by a continuation of sizable open market purchases, as argued above.

Before he instituted the Fed's radical initiatives as chairman, Ben Bernanke as an academic economist at Princeton University made influential intellectual contributions to the study of the Great Depression. His research afforded a rationale for the central bank's counter-attack on the financial tumult in 2007 and 2008. His various previously published journal articles were collected in a book appearing early in the new century.²³ Bernanke's work encompassed evidence drawn from foreign as well as US experience. It apparently confirmed the emphasis placed by Friedman and Schwartz on declines in money, importantly induced by flaws in the workings of the international gold standard and mistakes on the part of central banks. The two factors were interrelated. Leaving the gold standard in the early years enabled foreign central banks to reflate and lessen the contractionary impacts of monetary policy. Recovery from the depths of the Great Depression later began in the United States only after the Federal Reserve was emancipated from its "golden fetters" by a departure from the gold standard in April 1933.²⁴

But Bernanke's research supplemented this causal factor by pointing to breakdowns in the functioning of the credit intermediation mechanism. On the demand side, the widespread deflation in asset prices decimated the financial position of debtors by undercutting their net worth. Their resulting bankruptcy eliminated their capacity to borrow to acquire working capital or to finance consumer durables. On the supply side, loan losses seriously impaired bank capital, disrupted their ability to lend, and gave rise to financial crises, including banking panics. Bernanke also demonstrated that slow downward adjustment of nominal wages in the face of the significant declines in prices or deflation meant that real wages kept rising, further depressing firms' desire to hire workers.

Let's now depart from the conclusions of academic research by economists and return to historical developments. President Hoover was notably unsuccessful in his repeated attempts in real time to encourage the Federal Reserve to take more effective action to stem the contraction. So the economic downturn worsened. A little after mid-year, Congress, in an attempt to counter the associated deflation, passed the Federal Reserve Act of 1932, also called the Glass-Steagall Act of 1932. It liberalized the collateral for discount window lending, allowing loans to member banks on any security the Federal Reserve banks considered satisfactory, and even permitted them to make loans to nonbank borrowers in "unusual and exigent circumstances." Hoover was soundly defeated by Franklin D. Roosevelt in the election in the fall of 1932. Early in the morning on the day Roosevelt was to be inaugurated, the Board awoke Hoover to request a banking holiday to counter pervasive runs on banks, an

appeal Hoover denied in an angry letter.²⁵ On his first full day in office, March 5, 1933, Roosevelt did declare the bank holiday.

In subsequent years, in part at President Roosevelt's behest, the Congress passed legislation addressing the perceived causes of the Great Depression. The Banking Act of 1933, also known as the Glass-Steagall Act of 1933, not only created deposit insurance but also segregated commercial banking (taking retail deposits and extending credit to firms and households) from investment banking (underwriting and trading stocks and bonds). The Securities Act, also passed that year, improved disclosure by mandating that securities sold across state lines be registered with the federal government. In 1934 the Securities Exchange Act became law, establishing the Securities and Exchange Commission, which regulated trading and required companies to disclose information regularly. The Public Utility Holding Company Act in 1935 established regulation of the interstate operations of utilities, while the Trust Indenture Act passed in 1939 enacted regulation over the issuance of debt securities. Moreover, the Investment Company Act and the Investment Advisers Act, both passed in 1940, gave the SEC regulatory authority over investment companies and investment advisers, respectively.²⁶

The next chapter recounts how legislation composed by recently appointed Board Chairman Marriner S. Eccles founded the modern Federal Open Market Committee in August 1935. But Fed had little practical independence during the war years owing to the Treasury's control over monetary policy. The Fed was relegated to pegging interest rates. The Fed and the Treasury reached an accord in March 1951 allowing for the central bank's independence. The main negotiator for the Treasury was William McChesney Martin, who became Board chairman a month later, serving until early 1970.