

the then existing gold parity.<sup>45</sup> After the election, rumors spread that the new administration planned to devalue, that Roosevelt had been persuaded by George Warren to follow a policy of altering the gold content of the dollar as a means of "reflating" prices. The rumors became particularly widespread in early 1933 and gained credence when Roosevelt refused to deny them. The effect of the rumors and the failure to deny them was that, for the first time in the course of the contraction, the internal drain in part took the form of a demand for gold coin and certificates thereby reinforcing the external drain arising from speculative accumulation of foreign exchange.

The rumors about gold were only one part of the general uncertainty during the interregnum about future financial and economic policy. Under ordinary circumstances, it would have been doubtful that such rumors and such uncertainty could be a major factor accounting for so dramatic and widespread a financial panic. But these were not ordinary circumstances. The uncertainty came after more than three years of severe economic contraction and after more than two years of banking difficulties in which one wave of bank failures had followed another and had left the banking system in a peculiarly vulnerable position. The Federal Reserve itself participated in the general atmosphere of panic. Once the panic started, it fed on itself.

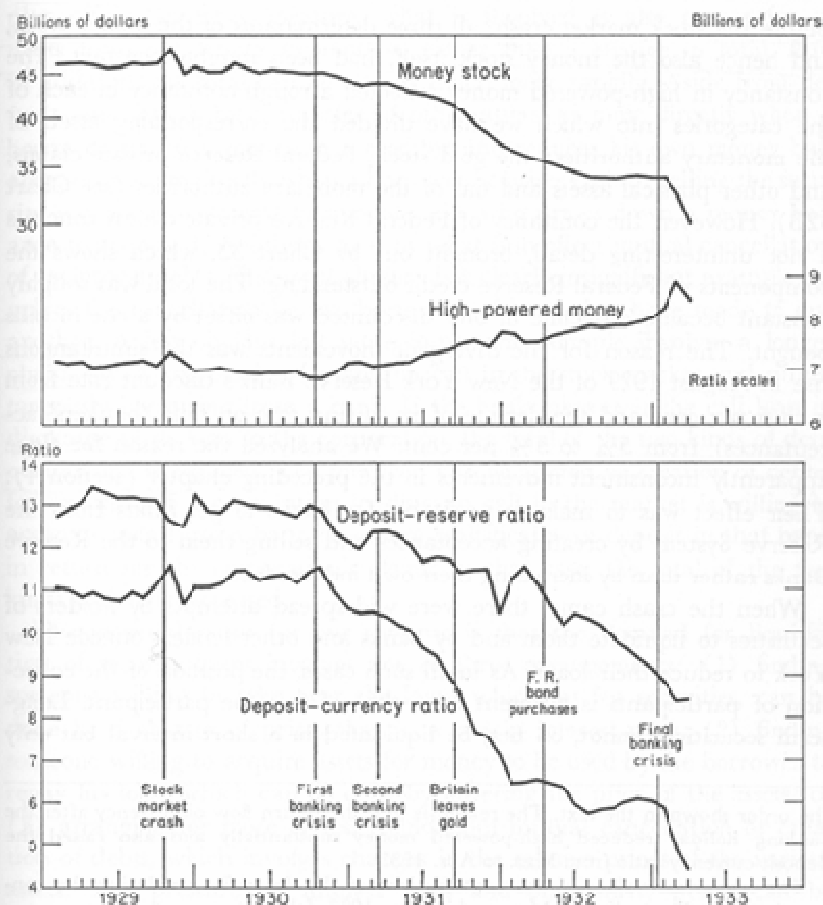
## 2. Factors Accounting for Changes in the Stock of Money

The factors accounting for changes in the stock of money during the four years from 1929 to 1933 are strikingly different from those in the other periods we have examined. Generally, the pattern for high-powered money has impressed itself most strongly on the total stock of money, the behavior of the two deposit ratios serving mainly to alter the tilt of the money stock relative to the tilt of high-powered money. That relation holds in Chart 31 only for the period up to October 1930, the onset of the first banking crisis. Thereafter, the two deposit ratios take command. High-powered money moves in a direction opposite to that of the total stock of money, and not even most of its short-term movements leave an impress on the stock of money.

From August 1929 to March 1933 as a whole, the change in high-powered money alone would have produced a rise of  $17\frac{1}{2}$  per cent in the stock of money. The change in the deposit-currency ratio alone would

<sup>45</sup> Frank B. Freidel, *Franklin Delano Roosevelt, Vol. 3, The Triumph*, Boston, Little, Brown, 1956, p. 351; Rixey Smith and Norman Beasley, *Carter Glass*, New York, Longmans, Green, 1939, pp. 321-323. When Roosevelt was authorized to reduce the gold content of the dollar under authority of the Thomas amendment to the Agricultural Adjustment Act of May 12, 1933, Glass, who had made an important speech on behalf of Roosevelt during the election campaign, made a vigorous attack on him in the Senate (Smith and Beasley, pp. 349-356).

CHART 31  
The Stock of Money and Its Proximate Determinants, Monthly,  
1929-March 1933



SOURCE: Tables A-1 (col. 8) and B-3.

have produced a decline of 37 per cent; the change in the deposit-reserve ratio, a decline of 20 per cent; interaction between the two ratios, a rise of 10 per cent; these three converted the  $17\frac{1}{2}$  per cent rise that high-powered money would have produced into a 35 per cent decline in the stock of money.<sup>46</sup> For a more detailed examination of these changes, we

<sup>46</sup> The trough of the money stock was reached in April 1933. Although the percentage decline from Aug. 1929 to Apr. 1933 is only slightly larger than from Aug. 1929 to Mar. 1933 (35.7 rather than 35.2 per cent), the percentage changes in the money stock each determinant would have produced if it alone had changed over the longer period show larger differences: 13, -35, -19, and 9 per cent, in

consider separately each of the periods distinguished in the preceding section and marked off on our charts.

## THE STOCK MARKET CRASH, OCTOBER 1929

Before the stock market crash, all three determinants of the money stock, and hence also the money stock itself, had been roughly constant. The constancy in high-powered money reflected a rough constancy in each of the categories into which we have divided the corresponding assets of the monetary authorities: the gold stock, Federal Reserve private claims, and other physical assets and fiat of the monetary authorities (see Chart 32B). However, the constancy of Federal Reserve private claims conceals a not uninteresting detail, brought out by Chart 33, which shows the components of Federal Reserve credit outstanding. The total was roughly constant because a decline in bills discounted was offset by a rise in bills bought. The reason for the divergent movements was the simultaneous rise in August 1929 of the New York Reserve Bank's discount rate from 5 to 6 per cent and the decline of its buying rate on bills (bankers' acceptances) from  $5\frac{1}{4}$  to  $5\frac{1}{8}$  per cent. We analyzed the reason for these apparently inconsistent movements in the preceding chapter (section 4). Their effect was to make it profitable for banks to get funds from the Reserve System by creating acceptances and selling them to the Reserve Banks rather than by increasing their own indebtedness.

When the crash came, there were widespread attempts by holders of securities to liquidate them and by banks and other lenders outside New York to reduce their loans. As in all such cases, the position of the collection of participants is different from that of any one participant. Long-term securities cannot, on net, be liquidated in a short interval but only

the order shown in the text. The reason is that the return flow of currency after the banking holiday reduced high-powered money substantially and also raised the deposit-currency ratio from Mar. to Apr. 1933.

The numerical values of the contributions of the determinants during the contraction, dated as ending in Mar. and in Apr. 1933, follow.

Change in Money Stock That Would Have Been Produced by Indicated Determinant if It Alone Had Changed

Proximate Determinant	Rate of Change Per Year (per cent)		Fraction of Total Change	
	Aug. 1929- Mar. 1933	Aug. 1929- Apr. 1933	Aug. 1929- Mar. 1933	Aug. 1929- Apr. 1933
	High-powered money	4.6	3.2	-0.37
Deposit-reserve ratio	-6.2	-5.9	0.52	0.49
Deposit-currency ratio	-13.0	-11.8	1.07	0.98
Interaction	2.6	2.3	-0.22	-0.19
All	-12.1	-12.0	1.00	1.00

Detail may not add to total because of rounding.

transferred from one holder to another. The widespread attempts to liquidate simply reduced prices to a level at which intended purchases matched intended sales.

Loans on securities, especially call loans, are a somewhat more complex affair. In large measure, what is involved is also a transfer of debts from one lender to another, rather than a change in total. But, in addition, the total can be altered much more rapidly. Aside from default, one way is by a transfer of other assets, as most directly when a borrower transfers money to a creditor and reduces his own money balance, or more indirectly when a borrower acquires cash by selling the security serving as collateral to someone else who draws down a money balance to acquire it. Another way is by what is in effect mutual cancellation of reciprocal debts. The most obvious but clearly insignificant example involves the cancellation by two borrowers of loans they have made to one another. A less obvious but more important example involves a longer chain, say, a corporation lending on call in the stock market and simultaneously borrowing from a bank. If the bank takes over the call loan in discharge of its loan to the corporation, the total of the two kinds of debt outstanding is reduced. The total can also be altered by creation of debts; for example, if a corporation lending on call in the market is willing to accept a note from a bank or—more realistically—a deposit in that bank in return for the corporation's claim. In that case, the total of the two kinds of debt is increased.

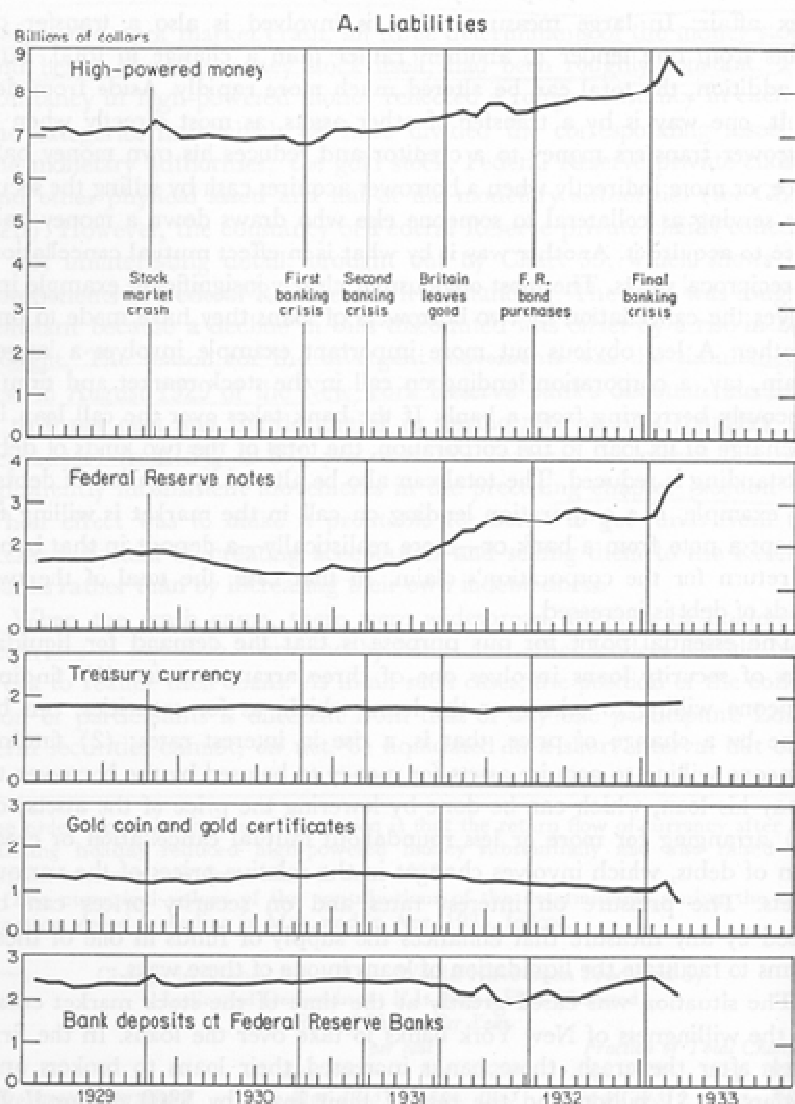
The essential point for our purpose is that the demand for liquidation of security loans involves one of three arrangements: (1) finding someone willing to take over the loans which, as for securities, can be done by a change of price, that is, a rise in interest rates; (2) finding someone willing to acquire assets for money to be used by the borrower to repay his loan, which can be done by lowering the price of the assets; or (3) arranging for more or less roundabout mutual cancellation or creation of debts, which involves changes in the relative prices of the various assets. The pressure on interest rates and on security prices can be eased by any measure that enhances the supply of funds in one of these forms to facilitate the liquidation of loans in one of these ways.

The situation was eased greatly at the time of the stock market crash by the willingness of New York banks to take over the loans. In the first week after the crash, those banks increased their loans to brokers and dealers by \$1 billion and the rest of their loans by \$300 million.<sup>47</sup> In large measure, this involved a creation of debts. The former lenders, the "others" for the accounts of whom the New York banks had been making loans, accepted deposits in New York banks as repaying their loans, and the New York banks in turn took over the claims on the bor-

<sup>47</sup> For sources, see footnote 5, above.

CHART 32

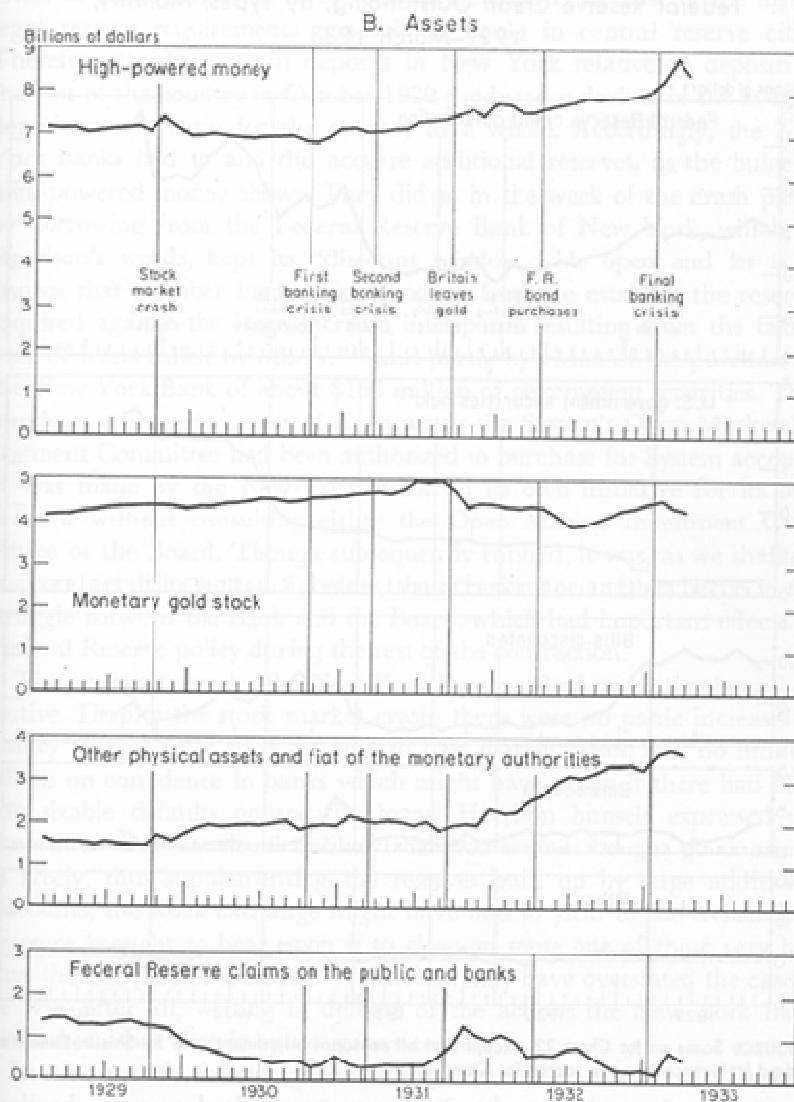
High-Powered Money, by Assets and Liabilities of the Treasury and Federal Reserve Banks, Monthly, 1929-March 1933



NOTE: Federal Reserve notes, Treasury currency, and gold coin and certificates are outside the Treasury and Federal Reserve Banks.

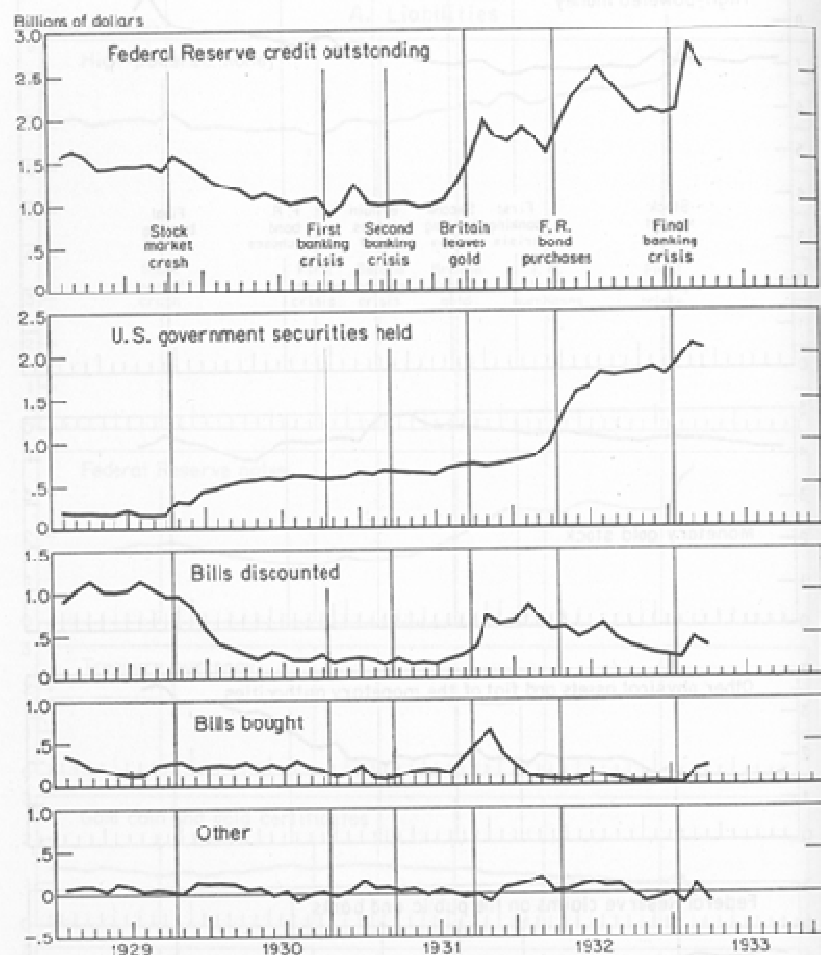
SOURCE: Same as for Chart 19.

CHART 32 (Concluded)



rowers without pressing for their immediate payment. That is the reason the monetary effect of the crash shows up in our money stock series as a sharp increase in demand deposits and the reason the increase was in New York City. Indeed, the increase in our estimates understates the magnitude of the action of the New York banks. Some of the loans taken over

CHART 33  
Federal Reserve Credit Outstanding, by Types, Monthly,  
1929–March 1933



SOURCE: Same as for Chart 22, except that all seasonal adjustments are by Shiskin-Eisenpress method (reference given in source for Chart 21).

were for the accounts of out-of-town banks and were matched by an increase in interbank deposits of \$510 million in New York City weekly reporting member banks. But our money stock estimates exclude interbank deposits.

To be able to expand deposits, the New York banks had to be able either to raise the ratio of deposits to reserves or to acquire additional reserves. The first was impossible because New York banks had no excess

reserves. Indeed, the ratio of deposits to high-powered reserves was lower in New York than in the rest of the country because of the higher legal reserve requirements imposed on banks in central reserve cities. Therefore the increase in deposits in New York relative to deposits in the rest of the country in October 1929 produced a decline in the average deposit-reserve ratio for the country as a whole. Accordingly, the New York banks had to and did acquire additional reserves, as the bulge in high-powered money shows. They did so in the week of the crash partly by borrowing from the Federal Reserve Bank of New York, which, in Harrison's words, kept its "discount window wide open and let it be known that member banks might borrow freely to establish the reserves required against the large increase in deposits resulting from the taking over of loans called by others;"<sup>48</sup> and partly by virtue of the purchase by the New York Bank of about \$160 million of government securities. That purchase was far in excess of the amount the System's Open Market Investment Committee had been authorized to purchase for System account. It was made by the New York Bank on its own initiative for its own account without consulting either the Open Market Investment Committee or the Board. Though subsequently ratified, it was, as we shall see in more detail in section 5, below, the occasion for another battle in the struggle between the Bank and the Board, which had important effects on Federal Reserve policy during the rest of the contraction.

The actions taken by the New York Reserve Bank were timely and effective. Despite the stock market crash, there were no panic increases in money market rates such as those in past market crises, and no indirect effects on confidence in banks which might have arisen if there had been any sizable defaults on security loans. Harrison himself expressed the view that "it is not at all unlikely that had we not bought governments so freely, thus supplementing the reserves built up by large additional discounts, the stock exchange might have had to yield to the tremendous pressure brought to bear upon it to close on some one of those very bad days the last part of October."<sup>49</sup> Harrison may have overstated the case—he was, after all, writing in defense of the actions the New York Bank had taken—but that is by no means certain.

In the month following the crash, there was a reversal. Deposits declined, as more lasting arrangements for the transfer and reduction of stock market loans replaced the temporary shift of many of those loans to New York banks. The changes in deposits produced a decline in the deposit-currency ratio, following the rise in October, and a decline in

<sup>48</sup> Harrison, *Miscellaneous*, Vol. I, letter, dated Nov. 27, 1929, Harrison to all governors. During the week ending Oct. 30, 1929, discounts increased \$200 million at all Reserve Banks, of which \$130 million was the increase in New York City weekly reporting member bank borrowings from the New York Reserve Bank.

<sup>49</sup> *Ibid.*, letter, dated Nov. 27, 1929, Harrison to all governors.

the deposit-reserve ratio milder than that in October. High-powered money also declined as a result of a reduction in bills discounted and in the gold stock, generally attributed to the withdrawal by foreigners of funds from the New York money market.<sup>50</sup> The net effect was to leave the stock of money after the crash at a lower level than before. At the end of November 1929, the stock of money was \$1.3 billion, or 3 per cent, less than it had been at the end of September. By the end of December, most of the loss had been made up; the stock of money was about \$0.5 billion, or 1 per cent, less than in September. These changes were concentrated in demand deposits. From December 1929 to October 1930, the stock of money fluctuated around a roughly constant level though with a mild downward trend. In October 1930, the stock of money was almost the same as it had been in November 1929 and nearly 2 per cent below its level at the end of December 1929.

For the period from August 1929 to October 1930 as a whole, the money stock declined by 2.6 per cent. High-powered money alone declined by 5 per cent. However, the deposit-currency ratio rose by about 7 per cent, enough to offset a minor decline in the deposit-reserve ratio as well as half the decline in high-powered money. In October 1930, the deposit-currency ratio stood at the highest level reached at any time in the 93 years covered by our data, except only for a fractionally higher peak reached in the month of the stock market crash (see Charts 31 and 64, and Table B-3). As we noted earlier, the public was clearly not greatly concerned at the time about the safety of bank deposits. But the high ratio made the System peculiarly vulnerable to the development of any such concern, as the following years were to demonstrate so tragically.

The decline in high-powered money occurred despite an increase of \$210 million in the gold stock and of \$470 million in the fiat of the monetary authorities. The latter increase reflected mostly a rise in government securities held by the System, i.e., the substitution of noninterest-bearing for interest-bearing government debt. Those expansionary factors were more than offset by a decline in Federal Reserve private claims of \$1,020 million—\$100 million in bills bought and \$920 million in bills discounted and other claims (see Chart 32B). Ultimately then, it was the failure of the Reserve System to replace the decline in discounts by other

<sup>50</sup> The return flow of foreign funds gave temporary relief to the foreign exchanges, which had been under pressure during the period of speculation. Foreign currencies had depreciated vis-à-vis the dollar, while foreigners were remitting funds to the security markets here. Before the peak in stock prices in 1929, the prices of those currencies had declined to the United States' gold import point. After the crash, the return flow of funds raised their prices to the gold export point. For example, the pound was as low as \$4.845857 in Sept. 1929 and in Dec. was as high as \$4.882010 (the figures are noon buying rates for cable transfers to New York, from *Commercial and Financial Chronicle*, Sept. 21, 1929, p. 1969; Dec. 27, 1929, p. 4017).

credit outstanding that was responsible for the decline in the stock of money.

The decline in discounts took place despite sharp reductions in discount rates—at the New York Bank, from 6 per cent to 2½ per cent in June 1930 (Chart 29). The successive declines in discount rates—the first of which came in November 1929, three months after the date set by the National Bureau as the reference cycle peak—though sharp and rapid by earlier standards, took place during a time when there was a sharp decline in the demand for loans and an increase in the demand for assets regarded as safe. Both made for a sharp decline in market interest rates. Though the discount rate fell absolutely, it probably rose relative to the relevant market interest rates, namely, those on short-term securities with essentially zero risk of default. Hence, discounting became less attractive. It is perhaps worth noting that this is not merely a retrospective judgment. The New York Reserve Bank favored more rapid reductions in the rate than those made. Harrison said in May 1931 that "if there had been no Federal Reserve System in October, 1929, money rates would probably have come down more rapidly than they had . . ." In September 1930, Adolph Miller of the Federal Reserve Board said at a meeting with all the governors, "Money is not really cheap nor easy." In mid-1930, Harold L. Reed, in the second of his two excellent books on the Federal Reserve System said: "In the writer's opinion, however, there was much stronger ground for holding that the rate reductions had been too gradual and long delayed" than that they had been too rapid.<sup>51</sup>

As the near-constancy of the deposit-reserve ratio indicates, there was no tendency of banks to accumulate excess reserves. It has been contended with respect to later years (particularly during the period after 1934, when large excess reserves accumulated) that increases in high-powered money, through expansion of Federal Reserve credit or other means, would simply have been added to bank reserves and would not have been used to increase the money stock. In other words, a rise in high-powered money would have been offset by a decline in the deposit-reserve ratio. We shall argue later that the contention is invalid even for the later period. It is clearly not relevant to the period from August 1929 to October 1930. During that period, additional reserves would almost certainly have been put to use promptly. Hence, the decline in the stock

<sup>51</sup> See sect. 5 below for the New York Bank's position. The quotation from Harrison is from Harrison, Notes, Vol. I, May 21, 1931; from Miller, Charles S. Hamlin, Hamlin Papers, Manuscript Division, Library of Congress, Diary, Vol. 18, Sept. 25, 1930, p. 85; from Reed, *Federal Reserve Policy, 1921-1930*, New York, McGraw-Hill, 1930, p. 191. This may not have been Miller's view earlier in the year. In May, Hamlin reported, "Miller said the Federal Reserve Bank of New York was obsessed with the idea that easy money would help the business recession" (Hamlin, Diary, Vol. 17, May 3, 1930, p. 151).

of money is not only arithmetically attributable to the decline in Federal Reserve credit outstanding; it is economically a direct result of that decline.

## ONSET OF FIRST BANKING CRISIS, OCTOBER 1930

The onset of the banking crisis is clearly marked in all three proximate determinants but particularly in the deposit ratios (Chart 31). From a peak of 11.5 in October 1930, the ratio of deposits to currency declined sharply—a decline that was to carry the ratio, with only minor interruptions along the way, to a low of 4.4 in March 1933. The deposit-reserve ratio likewise began a decline that was to carry it from a level of 12.9 in October 1930—the all-time high was 13.4 in April 1929—to a level of 8.4 in March 1933. These declines brought the deposit-currency ratio back to its level at the turn of the century and the deposit-reserve ratio to its level in 1912. They thus wiped out the whole of the much heralded spread in the use of deposits and “economy” in reserves achieved under the Reserve System.

The decline in the stock of money as a result of the banking crisis—a decline of slightly more than 3 per cent from October 1930 to January 1931, or more than in the preceding fourteen months—was clearly a result of the declines in the two deposit ratios, since high-powered money rose by 5 per cent. As Charts 32B and 33 show, the rise of \$340 million in high-powered money, seasonally adjusted, was produced partly by an inflow of \$84 million of gold<sup>52</sup>—the source that had always been the major reliance in pre-Federal Reserve crises—partly by an increase of \$117 million in Federal Reserve credit outstanding. The increase in Federal Reserve credit consisted partly of a rise of \$41 million in government securities, the balance of a rise in float. A rise in discounts just about offset a decline in bills bought. There was a brief spurt of roughly \$200 million in bills discounted in the two weeks after the failure of the Bank of United States, but it does not show up in the seasonally adjusted end-of-month figures plotted in Chart 33.

The rise in Federal Reserve credit certainly helped to offset some of the immediate effects of the banking crisis. But the movement was minor in magnitude. Many an earlier year-end shows rises of comparable magnitude and, even at its peak in December 1930, seasonally adjusted Federal Reserve credit was only 84 per cent of its level in the summer of 1929 when the System was seeking to curb speculation. The one other measure taken by the System in reaction to the banking crisis was a re-

<sup>52</sup> The gold inflows reflected partly the Hawley-Smoot Tariff Act passed in June 1930, which raised the tariff to the highest level up to that time in U.S. history; partly the reduction of U.S. lending abroad, and the continuance at a high level of interest and dividends on investments abroad and of war debt payments; partly the consequence of U.S. deflation on imports and exports. See sect. 4, below.

duction in late December 1930 in the New York Reserve Bank's discount rate to 2 per cent—to reassure the public.<sup>53</sup>

The rise in Federal Reserve Bank credit was temporary. After December 1930, discounts declined, bills bought were allowed to run off without replacement, while government security holdings increased by only a small fraction of the combined decline in discounts and bills bought. High-powered money rose in January 1931, only because a continued gold inflow offset the decline in Federal Reserve credit. It declined in February despite continued gold inflow, and rose slightly in March along with a minor rise in Federal Reserve credit and the gold stock. The decline in Federal Reserve credit from December 1930 to March 1931 was greater than the gold inflow. In effect, the System was not only sterilizing the gold inflow, but exerting a contractionary influence greater than the expansionary influence of the gold inflow.

Despite the reduction in high-powered money in February 1931, the money stock rose a bit because of a rise in both deposit ratios, as the wave of bank failures died down and confidence in banks was somewhat restored. As suggested earlier, if the rises in the deposit ratios had been reinforced by a vigorous expansion in high-powered money, instead of being offset by a reduction, the ground gained might have been consolidated and extended.

## ONSET OF SECOND BANKING CRISIS, MARCH 1931

The onset of the second banking crisis is clearly marked in Chart 31 by the renewed decline in the deposit ratios and the beginning of a decline in the money stock at the fastest rate so far in the contraction. In the five months from March to August, to exclude wholly the effects of Britain's departure from gold in September, the stock of money fell by 5¼ per cent, or by almost exactly the same percentage as in all the preceding nineteen months of the contraction. This was at the phenomenal annual rate of 13 per cent, yet the rate was soon to rise still higher.

As after the first banking crisis, the decline in the stock of money was entirely a consequence of the fall in the deposit ratios. High-powered money rose, this time by 4 per cent from March to August, and so offset nearly half the contractionary effect of the declining deposit ratios. There were, however, two differences between the second banking crisis and the first one some six months earlier.

<sup>53</sup> Governor Harrison wrote, “he had been urged from many quarters to make a reassuring statement: which might aid in quieting the banking situation. Such a statement was practically impossible because to be strong enough to do any good it would run the risk of being contradicted by any small bank failure which might thereafter occur. The rate reduction, apart from other reasons, served as a method of stating to the public that money was freely available” (Harrison, *Open Market*, Vol. II, Jan. 21, 1931).

(1) This time, the rise in high-powered money was produced almost entirely by the continued gold inflow, whereas earlier there had been at least a temporary increase in Federal Reserve credit, which helped to absorb some of the initial effects of the crisis. Federal Reserve credit remained almost perfectly stable, rising slightly only in July and August 1931. Despite the unprecedented liquidation of the commercial banking system, the books of the "lender of last resort" show a decline in bills discounted from the end of February to the end of April—a period when the usual seasonal movement is upward—and a rise from April to the end of August that made the whole increase from February to August less than the usual seasonal increase; they show irregular increases and decreases in bills bought, with the total at the end of August \$75 million higher than at the end of February, but still below its level at the turn of the year; and they show an increase of \$130 million in government securities purchased, the whole of the increase beginning late in June. Of this increase, \$50 million was a purely technical move rather than a reaction to domestic financial difficulties: it simply offset other reductions in credit outstanding. The remaining \$80 million represented a deliberate, if timid, move to contribute ease.<sup>54</sup>

(2) The second crisis lasted longer. In late 1930, there were signs of improvement after two or three months. On this occasion, as Chart 31 shows, the deposit-currency ratio—the most sensitive indicator of the public's attitude toward banks—not only continued to fall, but fell at an increasing rate. There was no sign that the crisis was drawing to an end when Britain's departure from gold intensified it.

Aside from the modest open market purchases in July and August, the only other domestic action of the System relevant to the money stock was a further reduction in the discount rate of the New York Reserve Bank to 1½ per cent in May—before the sharp June increase in bank failures. As we have seen, the reduction did not stimulate borrowing. On a different front, potentially of great consequence for the domestic money stock, the System participated in loans to foreign banks as part of an international effort to avert financial catastrophe abroad.<sup>55</sup>

<sup>54</sup> Federal Reserve Board, *Annual Report for 1931*, pp. 7–8. These figures are all as of Wednesdays. Of the \$130 million of government securities purchased, \$80 million was for System account and \$50 million for the New York Bank's own account (Harrison, *Open Market*, Vol. II, minutes of June 22 and Aug. 11, 1931, *Open Market Policy Conference meetings*; *Miscellaneous*, Vol. I, letter, dated July 9, 1931, Harrison to Seay; *Notes*, Vol. I, July 16, 1931, and Vol. II, Aug. 4, 1931). The latter purchase was made to offset the effect of the transfer of foreign-held balances from the acceptance market to Federal Reserve Banks.

<sup>55</sup> During the second and third quarters of 1931, the Federal Reserve Bank of New York in association with other Federal Reserve Banks purchased prime commercial bills with guaranteed repayment in gold from the Austrian National Bank, the National Bank of Hungary, the Reichsbank, and the Bank of England. The credit agreements with the Federal Reserve Banks at their separate maximums

## BRITAIN'S DEPARTURE FROM GOLD, SEPTEMBER 1931

In the few months after the departure of Britain from the gold standard, the proximate determinants of the money stock plotted in Chart 31 continued the pattern of the preceding five months, but the pattern was even more emphatic. The stock of money fell still faster: in the five months from August 1931 to January 1932, it fell by 12 per cent—compared with 5 per cent in the preceding five months—or at the annual rate of 31 per cent—compared with 13 per cent. High-powered money again rose, this time by about 4½ per cent, and again offset only part, and this time a smaller part, of the effect of the declines in the deposit ratios, particularly the deposit-currency ratio. The banks were so hard pressed to meet the demands of their depositors that, try though they did, they were able to do little to lower the ratio of their deposit liabilities to their reserves. That had to wait for a more propitious time, which is why the most rapid decline in the deposit-reserve ratio came later when the decline in the deposit-currency ratio had tapered off, and the slowest decline came earlier when the deposit-currency ratio was declining fastest. As we shall see in later chapters, much of the adjustment on the part of the banks did not come until after the end of the business contraction and the beginning of recovery. The timing relations between changes in the two deposit ratios during the 1931–32 segment of the contraction repeated the tendencies we have observed in each earlier banking crisis.

The major difference, aside from scale, between the five-month period, August 1931–January 1932, and the preceding five months is the source of the rise in high-powered money, which does not show up in Chart 31 but does in Charts 32B and 33. Up to August 1931, high-powered money had risen chiefly as a result of gold inflows. As noted in section 1 above, the period after Britain's departure from gold saw a sharp outflow, particularly in September and October 1931, large enough to offset

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aggregated about \$156 million and were renewed several times. Reserve Bank holdings of bills payable in foreign currencies increased from \$1 million at the end of March to \$145 million in August (Federal Reserve Board, *Annual Report for 1931*, pp. 12–13).

See also Harrison, *Miscellaneous*, Vol. I, letter, dated July 9, 1931, Harrison to McDougal; *Open Market*, Vol. II, minutes of meeting, Aug. 11, 1931; and *Notes*, Vol. I, June 1, 15, 22; July 13, 16, 1931; Vol. II, July 28, 30; Aug. 4; Sept. 24, 28, 1931, for discussion of the foreign credits. One of the directors of the New York Reserve Bank, Charles E. Mitchell, was quoted as saying, "In all of these cases, he was concerned about the soundness of the operation to be undertaken by the Federal reserve banks which, in their domestic business, take as few chances as possible," and "the thing which bothered him with regard to these foreign credits was the risk involved when, at home, the Federal reserve banks take no risks" (Harrison, *Notes*, Vol. I, June 22, 1931).

the gold inflows during the earlier segments of the contraction. High-powered money rose because Federal Reserve credit outstanding rose. Federal Reserve credit rose primarily because of the sharp rise in discounts as banks, having no other recourse open to them, were driven to borrowing from the Reserve System, despite the unprecedentedly sharp rises in discount rates in October 1931. Bills bought increased substantially in September and October, but then were allowed to run off so that, by January 1932, they had fallen below their level at the end of August 1931. All told, from August 1931 to January 1932, the rise of \$330 million in high-powered money was accounted for by a rise of \$560 million in discounts, \$80 million in government securities, \$270 million in other assets of the monetary authorities, offset by a decline of \$580 million in the gold stock.

During those five months when high-powered money rose by \$330 million, currency held by the public increased by \$720 million. The extra \$390 million had to come from bank reserves. Since banks were unwilling and unable to draw down reserves relative to their deposits,<sup>98</sup> the \$390 million, amounting to 12 per cent of their total reserves in August 1931, could be freed for currency use only by a multiple contraction of deposits. The multiple worked out to roughly 14, so deposits fell by \$5,727 million or by 15 per cent of their level in August 1931. It was the necessity of reducing deposits by \$14 in order to make \$1 available for the public to hold as currency that made the loss of confidence in banks so cumulative and so disastrous. Here was the famous multiple expansion process of the banking system in vicious reverse. That phenomenon, too, explains how seemingly minor measures had such major effects. The provision of \$400 million of additional high-powered money to meet the currency drain without a decline in bank reserves could have prevented a decline of nearly \$6 billion in deposits.

In discussing the 1907 crisis, we showed how the rise in deposit ratios had made the banking system more vulnerable to an attempted conversion of deposits to currency. The situation in 1931 was even more extreme. At no time in 1907 did the public hold more than \$6 in deposits for every \$1 it held in currency; in March 1931, when the second banking crisis began, it held over \$10 in deposits for every \$1 of currency, an amount it succeeded in reducing to under \$7 by January 1932. In 1907, the banks owed less than \$9 in deposits for every \$1 of high-powered money they held as reserves; in March 1931, they owed more than \$12. The more extensive use of deposits—widely regarded during the twenties as a sign of the great progress and refinement of the American financial structure—and the higher ratio of deposits to reserves—widely regarded as a sign of the effectiveness of the new Reserve System in promoting

<sup>98</sup> At the end of Jan. 1932, their excess reserves totaled \$40 million.

“economy” in the use of reserves—made the monetary system much more vulnerable to a widespread loss of confidence in banks. The defenses deliberately constructed against such an eventuality turned out in practice to be far less effective than those that had grown up in the earlier era.

When bank failures tapered off in February and March 1932, the deposit-currency ratio temporarily stopped falling. However, high-powered money declined by \$160 million in those two months, despite a dwindling of gold outflows, mainly as a result of changes in Reserve Bank credit: a decline of \$280 million in discounts, and a continued decline of \$50 million in bills bought, while government security holdings rose by about \$180 million. Discounts declined because banks took advantage of the pause in the demands on them to repay some of their borrowings. They followed that course despite a reduction in the New York Bank's discount rate to 3 per cent in February. The banks took advantage of the pause also to strengthen their reserve position somewhat, so the deposit-reserve ratio fell slightly from January to March 1932. The result was that the stock of money continued to decline though at a slower pace. In these two months it fell by another 2 per cent, an annual rate of 13 per cent, which can be described as moderate only by comparison with the preceding 31 per cent annual rate of decline.

#### BEGINNING OF LARGE-SCALE OPEN MARKET PURCHASES, APRIL 1932

The beginning of the purchase of government securities on a large scale by the Federal Reserve System in April 1932, involving purchase of \$350 million during that month (see Chart 33 for seasonally adjusted end-of-the-month figures), had no immediate effect on the behavior of the stock of money. It declined another 4½ per cent for another four months, or at an annual rate of 14 per cent. The decline then slowed up sharply, the money stock falling one-half of 1 per cent in the two months from July to September 1932, or at the annual rate of 3 per cent. From September on, it rose mildly until January 1933, when the money stock was one-half of 1 per cent higher than in September 1932, implying an average rate of growth of about 1¾ per cent per year.

The reason the bond purchases had no greater effect to begin with is that they were offset in part by a renewed outflow of gold and the rest was more than offset by continued declines in the deposit ratios. From April to July 1932, when Reserve System holdings of government securities went up by roughly \$1 billion, the gold stock fell by about half that amount, most of the outflow going to France. At the same time, a renewed flurry of bank failures in June produced a further appreciable decline in the deposit-currency ratio, and the continued efforts of the banks to strengthen their position produced a further decline in the deposit-reserve ratio.

The gold drain ceased in mid-June and was replaced by an inflow.



Over the rest of the year, the gold stock rose by \$600 million, bringing the gold stock in January 1933 above its level a year earlier. Reserve System bond purchases ceased in August 1932. Discounts and bills bought fell from July on, so that total Federal Reserve credit outstanding reached a peak in that month and fell by \$500 million from then to January 1933. Nonetheless, high-powered money continued to rise at roughly a constant rate from April 1932 to January 1933 because of the reversal of the gold flow, plus an increase of \$140 million in national bank notes. The latter increase was due to an amendment attached to the Home Loan Bank Act of July 1932, which broadened the range of government bonds eligible as security for national bank notes.<sup>57</sup> Once the deposit-currency ratio reached its trough in July 1932, the rise in high-powered money plus the rise in the deposit-currency ratio were enough to offset the continued fall in the deposit-reserve ratio and produce the pattern of change in the money stock already described.

The form taken by the improvement in the banking position, recorded in the deposit-reserve ratio, is worth noting because it presaged a development that was to be important in the next few years. Banks began to accumulate substantial reserves in excess of legal requirements. Since the Reserve System regarded the so-called "excess reserves" as a sign of monetary ease, their accumulation contributed to adoption of the policy of keeping total government securities at the level reached in early August. Excess reserves were interpreted by many as a sign of lack of demand for bank funds, as meaning that monetary authorities could make "credit" available but could not guarantee its use, a position most succinctly conveyed by the saying, "monetary policy is like a string; you can pull on it but you can't push on it." In our view, this interpretation is wrong. The reserves were excess only in a strictly legal sense. The banks had discovered in the course of two traumatic years that neither legal reserves nor the presumed availability of a "lender of last resort" was of much avail in time of trouble, and this lesson was shortly to be driven home yet again. Little wonder that the reserves they found it prudent to hold exceeded substantially the reserves they were legally required to hold.<sup>58</sup> As noted above, their reaction was the same as in

<sup>57</sup> The amendment permitted use for a period of three years of all government bonds bearing interest at 3½ per cent or less, including future bond issues during the period. From August 1929 up to July 1932 there was a slight increase—\$60 million—in national bank notes in circulation, as national banks exercised somewhat more fully their right to issue on the security of three government bond issues bearing interest at 2 per cent, which had the circulation privilege.

<sup>58</sup> See Chap. 8, sect. 1, for evidence on this view. In Dec. 1932, Governor Meyer said that "if the banks knew that there was going to be a constant amount of excess reserves over a long period, that amount could be relatively small and still be more effective than a much larger but uncertain amount . . . . We have not obtained the full effect of recent large excess reserves because of uncertainty as to our future policy" (Harrison, Notes, Vol. III, Dec. 22, 1932).

earlier crises, only greater in magnitude in response to the greater severity of the crisis.

## THE BANKING PANIC OF 1933

The final banking crisis, which terminated in the banking holiday early in March 1933, was in most essential respects a duplicate of the two preceding ones but still more drastic. The money stock fell 12 per cent in the two months from January to March 1933, or at an annual rate of decline of 78 per cent. For reasons we discuss in detail in the next chapter, our estimates overstate the decline in the stock of money, but hardly any reasonable allowance for error could cut the rate of decline to less than the 31 per cent rate of decline from August 1931 to January 1932. As in the earlier crises, high-powered money rose, primarily as a result of a rise in discounts and a lesser rise in bills bought. Chart 33 shows an appreciable rise in government securities. This rise is produced by the seasonal adjustment. There is no rise in the original figures. The early months of the years before 1933 were generally characterized by a decline in the Reserve portfolio of government securities in response to the return flow of currency from circulation usual at that season. In 1933, there was, of course, a drain of currency rather than a return flow: government securities were nevertheless reduced in January by \$90 million, but then raised in February by \$70 million, to a level at which they also stood at the end of March. Seasonal adjustment of the figures converted the decline in January and the modest rise in February to appreciable increases, and raised the original March figure only slightly less.

The banking holiday in March renders all the money figures non-comparable with earlier ones, so we consider the change from January to February alone, as an approximation of the decline up to the bank holiday. In that one month the money stock fell 4½ per cent, or at an annual rate of 56 per cent. Currency held by the public rose by over \$600 million, high-powered money by \$535 million—almost the same. But even the remaining \$65 million which had to be supplied from bank reserves, plus the scramble by banks for reserves, produced a decline in deposits of over \$2 billion in that one month, or nearly 7½ per cent of the already shrunken total. This time the multiplier was not 14 but 29.

The major monetary difference between the final banking crisis and the earlier ones was that for the first time the internal drain in part clearly took the form of a drain of gold coin and certificates. As Chart 32A shows, the volume of gold coin and certificates had risen mildly in 1930 but then had been constant or declining until the onset of the final crisis. In January 1933, the amount of gold coin and gold certificates outside the Treasury and Federal Reserve Banks was \$420 million less than at its peak in December 1930, \$340 million less than at its previous

January peak in 1931. The decline was apparently in some measure the result of a deliberate policy on the part of the Federal Reserve System of adding to its gold reserves by paying out Federal Reserve notes instead of gold certificates where feasible, a reversal of the policy adopted during the twenties to keep down the apparent reserve ratio (see Chapter 6, section 4).<sup>59</sup> Though the total of gold coin and gold certificates declined, the amount of gold coin alone increased by nearly \$120 million, from \$65 million in April 1931 to \$181 million in December 1932. That increase may have reflected a preference for gold coin in the earlier period, though to some extent it must reflect the growth of all forms of currency as opposed to deposits. But if it does reflect a preference for gold, that preference was not sufficiently widespread or dramatic to attract much attention. In February and March 1933, the situation was entirely different, as shown by the sharp spurt in gold coin and certificates in early 1933 in Chart 32A. Fears of devaluation were widespread and the public's preference for gold was unmistakable. On February 23, 1933, Harrison told the directors of the New York Reserve Bank, "there is little that foreigners can do to hurt our gold position, . . . the real danger comes from domestic sources."<sup>60</sup>

<sup>59</sup> Gold certificates in circulation declined in all but three months in 1931 and 1932—when the certificates may have been paid out partly because of a shortage of other forms of currency, as in Feb. and Mar. 1933 before the bank holiday—for a net change of \$460 million. Although there is no acknowledgment in the *Annual Report* for 1931 and 1932 that such a retirement policy was in effect, it is significant that the *Federal Reserve Bulletin* (Nov. 1931, p. 604) contains the following comment:

In considering the gold position of the country, it should be noted also that there are \$1,000,000,000 of gold certificates in circulation, a large part of which can be retired by the Federal reserve banks by substituting an equivalent amount of Federal [reserve] notes. The retirement of gold certificates would increase the gold holdings of the reserve banks, and of this increase 40 per cent would be required as reserves against the additional Federal reserve notes and 60 per cent would be added to the system's excess reserves.

<sup>60</sup> He went on to say, "During the last ten days out-payments of gold coin at this bank, and, probably, at all of the Federal reserve banks have been heavier than in any recent similar period. This movement represents something more than the hoarding of currency, which reflects a distrust of banks; it represents in addition a distrust of the currency itself and it is inspired by talk of devaluation of the dollar and inflation of the currency" (Harrison, Notes, Vol. III).

Harrison made efforts to get banks to discourage hoarding. He suggested that they refuse to provide facilities for storage of gold and to grant loans against the collateral of an equivalent amount of gold. With respect to the first, he suggested that banks impose no obstacles to the acquisition of gold but make no offer of safe-keeping facilities; with respect to the second, he advised banks to decline a loan to buy gold on the ground that it was a loan for a capital purpose. He said, "I saw no occasion for a member bank, in these times particularly when so many people who needed credit for business purposes could not obtain the credit, to make loans to their customers for the purpose of buying gold to hoard. It was nothing but a speculative loan gambling on our going off the gold standard" (*Conversations*, Vol. II, Feb. 9, 1933). Direct pressure had come full circle.

### 3. Bank Failures

The preceding account gives a prominent place in the sequence of events during the contraction to the successive waves of bank failures. Three questions about those failures deserve further attention: Why were the bank failures important? What was the origin of the bank failures? What was the attitude of the Federal Reserve System toward the bank failures?

#### ROLE OF BANK FAILURES

The bank failures had two different aspects. First, they involved capital losses to both their owners and their depositors, just as the failure of any other group of business enterprises involved losses to their owners and creditors. Second, given the policy followed by the Reserve System, the failures were the mechanism through which a drastic decline was produced in the stock of money. Which aspect was the more important for the course of business?

For the United States, the two aspects were so closely related that it may seem impossible to distinguish them and to judge their separate effects. But even for the United States alone, a few figures serve to show that the second was vastly more important than the first. Regarded solely in their first aspect, the failures imposed losses totaling about \$2.5 billion on stockholders, depositors and other creditors of the more than 9,000 banks that suspended operations during the four years from 1930 through 1933. Slightly more than half the loss fell on depositors, the rest on other creditors and stockholders.<sup>61</sup> A loss of \$2.5 billion is certainly sizable, yet by itself it would not entitle bank failures to the amount of attention we and other students of the period have devoted to them. By comparison, over the same four years, the value of all preferred and common stock in all enterprises in the United States is estimated to have declined by \$85 billion. Or, to make a different comparison, the decline in the total value of all shares listed on the New York Stock Exchange in October 1929 is estimated to have been nearly \$15½ billion.<sup>62</sup> As a fraction of total wealth, the losses produced by bank failures were minor and would deserve no more attention than losses of a comparable amount in, say, real estate.

<sup>61</sup> Loss to depositors, estimated at \$1.3 billion (unpublished FDIC estimates; see source notes to Table 16, part 1); loss to other creditors is a rough guess; loss to stockholders, estimated at \$0.9 billion (*Federal Reserve Bulletin*, Sept. 1937, p. 897). A sizable fraction of the losses was not realized until after the end of the banking holiday. Of the more than 9,000 banks that suspended in the years from 1930 through 1933, more than 3,500 suspended after Mar. 15, 1933.

<sup>62</sup> *Historical Statistics of the United States, Colonial Times to 1957*, Bureau of the Census, 1960, Series F-173, p. 150; *Business Statistics*, 1932 Supplement, p. 104.

In the second aspect, the situation is entirely different. The total stock of money fell by over one-third from 1929 to 1933; commercial bank deposits fell by over 42 per cent; in absolute amount, they fell \$13 billion. Total deposits in suspended banks alone were much larger than losses, close to \$7 billion in the same four years. If the bank failures deserve special attention, it is clearly because they were the mechanism through which the drastic decline in the stock of money was produced, and because the stock of money plays an important role in economic developments. The bank failures were important not primarily in their own right, but because of their indirect effect. If they had occurred to precisely the same extent without producing a drastic decline in the stock of money, they would have been notable but not crucial. If they had not occurred, but a correspondingly sharp decline had been produced in the stock of money by some other means, the contraction would have been at least equally severe and probably even more so.

Persuasive evidence for this final statement is provided by Canadian experience. Canada had no bank failures at all during the depression; its 10 banks with 3,000-odd branches throughout the country did not even experience any runs, although, presumably as a preventive measure, an eleventh chartered bank with a small number of branches was merged with a larger bank in May 1931. But because Canada kept its exchange rate with the United States fixed until Britain left the gold standard in September 1931 and then maintained its exchange rate at a new level involving a smaller depreciation than that undergone by the pound sterling, its internal level of income and its stock of money had to adjust to maintain external equilibrium. Though the required fall in both prices and income was sharp, the depreciation of the Canadian exchange rate permitted the percentage fall to be somewhat smaller than that in the United States. The stock of money fell sharply also, but by a much smaller percentage than in the United States. Even the smaller fall was, however, nearly one and a half times as large as the fall in any contraction in U.S. history since the Civil War except only the 1929-33 contraction. So it can hardly be regarded as minor. The relevant figures are as follows:<sup>63</sup>

Percentage Decline, 1929-33	United States	Canada
Stock of money	33	13
Net national product	53	49
Velocity	29	41

<sup>63</sup> Except for the Canadian currency component, which is an uncentered annual average of monthly data, money stock figures are annual averages of monthly data, centered on June 30. Canadian data are sums of demand, notice, and provincial government deposits in chartered banks, minus duplications (*Canada Gazette*, Dominion of Canada, Jan. 1929-Jan. 1934), plus currency held by the public (*Canada Year Book*, 1947, Dominion Bureau of Statistics, p. 1023). Net national income at factor cost, for Canada, from *Canadian Statistical Review*, 1953 Supplement, Dominion Bureau of Statistics, p. 15.

Why was the decline in the stock of money so much sharper in the United States relative to the decline in income than it was in Canada? Or, alternatively, why did not the stock of money in Canada have to fall much more sharply than it did to be consistent with so sharp a decline in income? The reason for the difference is, we believe, primarily the effect of the U.S. bank failures themselves. The bank failures made deposits a much less satisfactory form in which to hold assets than they had been before in the United States or than they remained in Canada. That, of course, is the reason they produced such a shift in the deposit-currency ratio in the United States. While currency was an alternative, it was not a fully satisfactory alternative, otherwise deposits would never have constituted so large a fraction of the total stock of money. Hence the demand for the sum of deposits and currency was reduced by the diminished attractiveness of deposits—an effect of the bank failures not heretofore considered. Of course, that effect was not strong enough to offset completely the increased demand for money relative to income as a result of the other factors associated with the contraction, such as the great increase in uncertainty, the decline in attractiveness of equities and real goods, and so on (see Chapter 12). If it had been, the amount of money would have fallen by a larger percentage than income fell, i.e., velocity would have risen rather than have fallen as it did. But the effect was strong enough to make the decline in velocity decidedly smaller in the United States than in Canada, where the same effect was not present. In Canada, deposits remained as attractive as they had ever been, and there was accordingly no reduction in the demand for money from this source. The other factors increasing the demand for money had full scope.

Paradoxically, therefore, the bank failures, by their effect on the demand for money, offset some of the harm they did by their effect on the supply of money. That is why we say that, if the same reduction in the stock of money had been produced in some other way, it would probably have involved an even larger fall in income than the catastrophic fall that did occur.

#### ORIGIN OF BANK FAILURES

The issue that has perhaps received the most attention centers on the reasons for the bank failures. Did they arise primarily from the financial practices of the preceding years? Or were they produced by the developments of the early thirties? Even if the first view were correct, the indirect monetary consequences of the failures are separable from the failures as such and need not have been also the near-inevitable consequences of the developments of the twenties. As we have just seen, it was the indirect consequences that were the most important effect of the bank failures.

As noted in Chapter 6, there is some evidence that the quality of loans and investments made by individuals, banks, and other financial institutions deteriorated in the late twenties relative to the early twenties in the ex ante sense that, had the later loans and investments been subject to the same economic environment as the earlier ones, they would have displayed a higher ratio of losses through default. The evidence for such deterioration is fully satisfactory only for foreign lending. For the rest, the studies made have not satisfactorily separated, and some have not even recognized, the difference between the ex ante deterioration, in the sense just specified, and the ex post deterioration that occurred because the loans and investments came to fruition and had to be repaid in the midst of a major depression. Loans and investments, identical in every respect except the year made, would have fared worse if made in the later than if made in the earlier twenties. By their concentration on ex post experience, authors of most of the studies unquestionably exaggerate whatever difference in ex ante quality there was. Indeed, many of the results are consistent with no deterioration at all in ex ante quality.

If the evidence is unsatisfactory for loans and investments in general, it is even sparser and more unsatisfactory for the loans and investments of commercial banks in particular. And there is some reason to believe that the experience of banks may have been different from that of other lenders. During the later years of the twenties, particularly in 1928 and 1929, banks were under steady reserve pressure. As we have seen, their total deposits were roughly constant from early 1928 to after the cyclical peak in August 1929. Whatever they might have done in the generally optimistic and exuberant environment of the time if they had been more plentifully supplied with reserves, they had no choice but to be highly selective in their loans and investments.

If there was any deterioration at all in the ex ante quality of loans and investments of banks, it must have been minor, to judge from the slowness with which it manifested itself. As we have seen, the contraction in business during the first fourteen months from the peak in August 1929 to October 1930 and particularly during the twelve months after the stock market crash was extremely severe. One reason may have been that banks were being forced to contract by a reduction in high-powered money, so that their deposits fell by 2 per cent in the course of the fourteen months. Yet, in that fourteen-month period, deposits in banks that suspended operations were only one-fifth to one-third higher than they were in the fourteen months beginning with either the cyclical peak of May 1923 or of October 1926: the amounts are \$263 million for 1923-24, \$281 million for 1926-27, and \$347 million for 1929-30. In both earlier contractions, the decline in general economic activity, and hence the pressure on borrowers, was milder than from 1929 to 1930;

and, in addition, deposits in commercial banks rose by 5 to 6 per cent rather than falling as they did from 1929 to 1930.

The great surge in bank failures that characterized the first banking crisis after October 1930 may possibly have resulted from poor loans and investments made in the twenties. After the failure of the Bank of United States in December 1930, Governor Harrison told his board of directors that "the Reserve Bank had been working for a year or more to improve conditions in the Bank of United States, although there was no evidence that the condition of the bank was impaired," and J. H. Case, chairman of the board, said the bank's condition was probably not satisfactory in July 1929.<sup>64</sup> However, the subsequent pay-out record during the liquidation of the Bank of United States suggests that, if there was any permanent impairment of assets at the time the bank failed, it could not have been great.

Whatever may have been true of the initial bank failures in the first banking crisis, any ex ante deterioration in the quality of loans and investments in the later twenties or simply the acquisition of low-quality loans and investments in that period, even if no different in quality than in earlier periods, was a minor factor in the subsequent bank failures. As we have seen, the banking system as a whole was in a position to meet the demands of depositors for currency only by a multiple contraction of deposits, hence of assets. Under such circumstances, any runs on banks for whatever reason became to some extent self-justifying, whatever the quality of assets held by banks. Banks had to dump their assets on the market, which inevitably forced a decline in the market value of those assets and hence of the remaining assets they held. The impairment in the market value of assets held by banks, particularly in their bond portfolios, was the most important source of impairment of capital leading to bank suspensions, rather than the default of specific loans or of specific bond issues.<sup>65</sup> As W. R. Burgess, at the time a deputy governor of the

<sup>64</sup> Harrison, Notes, Vol. I, Dec. 18, 1930.

<sup>65</sup> The president of Federation Bank and Trust Company, closed by the New York State Superintendent of Banks on Oct. 30, 1931, explained that the bank had prospered for many years "and as a matter of fact right up to the past few months, when due to the nationwide rapid and unforeseen depreciation in bonds and other securities, the falling away in values of the bonds and securities owned by the company impaired the bank's capital structure" (*Commercial and Financial Chronicle*, Nov. 7, 1931, p. 3038).

In his contemporary account of the American banking system, R. W. Goldsmith wrote: "The depression of bond values, which started as far back as 1929 in the field of urban real estate bonds and reached foreign bonds and land bank bonds in the course of 1931, began to endanger the whole banking structure and notably the large city banks the moment first-grade bonds were affected in a most drastic way: From the middle of 1931 to the middle of 1932, railroad bonds lost nearly 36 per cent of their market value, public utility bonds 27 per cent, industrial bonds 22 per cent, foreign bonds 45 per cent, and even United States Government securities 10 per cent" (R. W. Goldsmith [Goldsmith], *The Changing Structure*

New York Reserve Bank, told the Bank's board of directors in February 1931, the chief problem confronting many banks was the severe depreciation in their bond accounts; "given a better bond market and rising bond prices, . . . the condition of banks now jeopardized by depreciation in their bond accounts would, in many cases, improve automatically beyond the point of immediate danger."<sup>66</sup> Because there was an active market for bonds and continuous quotation of their prices, a bank's capital was more likely to be impaired, in the judgment of bank examiners, when it held bonds that were expected to be and were honored in full when due than when it held bonds for which there was no good market and few quotations. So long as the latter did not come due, they were likely to be carried on the books at face value; only actual defaults or postponements of payment would reduce the examiners' evaluation. Paradoxically, therefore, assets regarded by the banks as particularly liquid and as providing them with a secondary reserve turned out to offer the most serious threat to their solvency.

The most extreme example of the process we have been describing is the experience after Britain left the gold standard. The decline of 10 per cent in the price of government bonds and of 20 per cent in the price of high-grade corporate bonds (noted in the preliminary memorandum for the January 11, 1932, meeting of the Open Market Policy Conference, cited earlier) clearly did not reflect any deterioration in the quality of credit in the twenties or "bad" banking in any meaningful sense of the term. It reflected the inevitable effect of the enforced dumping of bonds by banks to reduce the volume of their assets by a large multiple of the amount of additional currency supplied to depositors.

If deterioration of credit quality or bad banking was the trigger, which it may to some extent have been, the damaging bullet it discharged was the inability of the banking system to acquire additional high-powered money to meet the resulting demands of depositors for currency, without a multiple contraction of deposits. That inability was responsible alike for the extent and importance of bank failures and for the indirect effect bank failures had on the stock of money. In the absence of the provision of additional high-powered money, banks that suffered runs as a result

of *American Banking*, London, Routledge, 1933, p. 106). We are indebted to Manuel Gottlieb for this reference.

Commenting on bank suspensions in 1932, Bray Hammond wrote: "The situation had worked to the point where the stronger banks were being dragged down by the weaker banks, partly because the latter drew on the former for reserves and partly because the forced liquidation of portfolios by banks in difficulties impaired the value of portfolios of all other banks" ("Historical Introduction," *Banking Studies*, Board of Governors of the Federal Reserve System, 1941, p. 29).

<sup>66</sup> Harrison, Notes, Vol. I, Feb. 26, 1931. See also footnote 12, above.

of the initial failure of "bad" banks would not have been helped by holding solely U.S. government securities in addition to required reserves. If the composition of their assets did not stop the runs simply by its effect on depositors' confidence, the banks would still have had to dump their government securities on the market to acquire needed high-powered money, and many would have failed.<sup>67</sup> Alternatively, the composition of assets held by banks would hardly have mattered if additional high-powered money had been made available from whatever source to meet the demands of depositors for currency without requiring a multiple contraction of deposits and assets. The trigger would have discharged only a blank cartridge. The banks would have been under no necessity to dump their assets. There would have been no major decline in the market prices of the assets and no impairment in the capital accounts of banks. The failure of a few bad banks would not have caused the insolvency of many other banks any more than during the twenties when a large number of banks failed. And even if an abnormally large number of banks had failed because they were bad, imposing losses on depositors, other creditors, and stockholders, comparable to those actually imposed, that would have been only a regrettable occurrence and not a catastrophe if it had not been accompanied by a major decline in the stock of money.

#### FEDERAL RESERVE SYSTEM'S ATTITUDE

The failure of the Bank of United States provoked much soul searching by the directors of the New York Reserve Bank. They devoted meeting after meeting from mid-December 1930 to April 1931 to discussions of the responsibilities of the Reserve Bank with respect to member bank suspensions and of the actions it could take to prevent them. They were well aware of the serious shock the failures had administered to confidence not only in commercial banks but also in the Federal Reserve System. Owen D. Young, then deputy chairman of the board of directors of the New York Bank, repeated to his fellow directors the remark of an upstate New York banker that the failure of the Bank of United States "had shaken confidence in the Federal Reserve System more than any other occurrence in recent years."<sup>68</sup> At the first joint meeting of the Federal Reserve Board and the Open Market Policy Conference after the banking difficulties had developed, Adolph Miller, a member of the Board, commented that "the banking situation was now more important than the credit situa-

<sup>67</sup> Of course, had banks held only U.S. government securities in addition to their required reserves, the Reserve System would have been under much greater pressure than it was to intervene by providing additional high-powered money to support the prices of those securities. But that is an aspect of the problem wholly different from the effect of the possible deterioration of credit quality.

<sup>68</sup> Harrison, Notes, Vol. II, Aug. 13, 1931.

tion, and asked what the governors were planning to do in different districts if further banking trouble started.<sup>10</sup> The minutes of directors' meetings of the New York Bank and memoranda prepared for meetings of the Open Market Policy Conference reveal that the technical personnel of the Bank and the Board were fully aware of the interconnection between the banking and the credit situations, and of the effects of the liquidation of securities to meet the demands of depositors.<sup>11</sup> Repeatedly during the next two years, the problem of bank failures and bank supervision was discussed at meetings within the System.

Despite the attention to the problem after 1930, the only System actions directed specifically at the problem of bank failures were the proposals noted above for measures that others might take, with particular emphasis on proposals designed to permit assets to be valued more liberally in bank examinations. The general tenor of System comments, both inside and out, was defensive, stressing that bank failures were a problem of bank management which was not the System's responsibility.

The major reason the System was so belated in showing concern about bank failures and so inactive in responding to them was undoubtedly limited understanding of the connection between bank failures, runs on banks, contraction of deposits, and weakness of the bond markets—connections we have tried to spell out earlier in this chapter. The technical personnel of the New York Bank understood these connections, as undoubtedly many other individuals in the System did also; but most of the governors of the Banks, members of the Board, and other administrative officials of the System did not. They tended to regard bank failures as regrettable consequences of bad management and bad banking practices, or as inevitable reactions to prior speculative excesses, or as a consequence but hardly a cause of the financial and economic collapse in process. As implied in Miller's comment quoted above, they regarded the banking situation as something different from the credit situation.

Four additional circumstances may help to explain the System's failure both to develop concern over bank closings at an earlier date and to undertake more positive measures when concern did develop. (1) Federal Reserve officials had no feeling of responsibility for nonmember banks. In 1921-29 and the first ten months of 1930, most failed banks were nonmembers, and nonmembers held a high percentage of the deposits involved. (2) The failures for that period were concentrated among smaller banks and, since the most influential figures in the System were big-city bankers who deplored the existence of smaller banks, their disappearance may have been viewed with complacency. (3) Even in November and December 1930, when the number of failures increased sharply, over 80

<sup>10</sup> Harrison, Open Market, Vol. II, minutes of meeting, Jan. 21, 1931, p. 7.

<sup>11</sup> See, for example, quotations in footnote 12, above.

per cent were nonmembers. (4) The relatively few large member banks that failed at the end of 1930 were regarded by many Reserve officials as unfortunate cases of bad management and therefore not subject to correction by central bank action.<sup>12</sup>

In September 1931, when Governor Harrison convened a meeting of commercial bankers to discuss means of making deposits in closed banks available, he recalled that "at one time it was the feeling of many of us down town that the effects of the failure of . . . small banks in the community could be isolated," but "it was clear that the continued closing of institutions in the city is now having serious repercussions. . . ."<sup>12</sup>

#### 4. International Character of the Contraction

In 1929, most countries of the Western world had returned to a monetary standard involving fixed exchange rates between different national currencies. The standard was widely known as the gold-exchange standard because many countries kept their monetary reserves in the form of balances of other currencies convertible into gold at fixed prices, notably sterling and dollars, rather than in the form of gold itself. Official agencies in such countries, usually the central banks, often fixed exchange rates directly by standing ready to buy or sell the national currency at fixed rates in terms of other currencies, rather than indirectly by standing ready to buy or sell gold at fixed prices in terms of the national currency.

Since the gold-exchange standard, like the gold standard, involved fixed exchange rates, it also meant that, so long as the standard was maintained, prices and incomes in different countries were intimately connected. They had to behave so as to preserve a rough equilibrium in the balance of payments among the countries. The use of the gold-exchange standard did mean, however, that there was less leeway in the adjustments among countries—the rough equilibrium could not be quite so rough as under the full gold standard. The gold-exchange standard rendered the international financial system more vulnerable to disturbances for the same reason that the rise in the deposit-reserve ratio rendered the domestic monetary system more vulnerable: because it raised the ratio of claims on the relevant high-powered money—in this case, ultimately, gold—to the amount of high-powered money available to meet those claims.

The links forged by the fixed rates of exchange ensured a worldwide decline in income and prices after 1929, just as the links forged by the less rigidly fixed exchange rates in 1920 ensured a worldwide decline then. No major contraction involving a substantial fall in prices could develop in any one country without those links enforcing its trans-

<sup>12</sup> We are indebted to Clark Warburton for this paragraph.

<sup>13</sup> Harrison, Office, Vol. II, Sept. 11, 1931.

mission and spread to other countries. There was sufficient play in the links to permit minor uncoordinated movements but not to permit major ones.

As in 1920, the worldwide scope of the contraction once it got under way does not mean that it did not originate in the United States. Ever since World War I at the latest, the United States has been a sufficiently important participant in world trade and in world capital and financial markets and has held a sufficiently large fraction of the world's gold stock to be capable of initiating worldwide movements and not merely of reacting to them. Of course, if it did initiate a worldwide disturbance, it would inevitably be affected in turn by reflex influences from the rest of the world.

We saw in Chapter 5 that there is good reason to regard the 1920-21 contraction as having been initiated primarily in the United States. The initial step—the sharp rise in discount rates in January 1920—was indeed a consequence of the prior gold outflow, but that in turn reflected the United States inflation in 1919. The rise in discount rates produced a reversal of the gold movement in May. The second step—the rise in discount rates in June 1920 to the highest level in Federal Reserve history before or since—was a deliberate act of policy involving a reaction stronger than was needed, since a gold inflow had already begun. It was succeeded by a heavy gold inflow, proof positive that the other countries were being forced to adapt to United States action in order to check their loss of gold, rather than the reverse.

The situation in 1929 was not dissimilar. Again, the initial climactic event—the stock market crash—occurred in the United States. The series of developments which started the stock of money on its accelerated downward course in late 1930 was again predominantly domestic in origin. It would be difficult indeed to attribute the sequence of bank failures to any major current influence from abroad. And again, the clinching evidence that the United States was in the van of the movement and not a follower is the flow of gold. If declines elsewhere were being transmitted to the United States, the transmission mechanism would be a balance of payments deficit in the United States as a result of a decline in prices and incomes elsewhere relative to prices and incomes in the United States. That decline would lead to a gold outflow from the United States which, in turn, would tend—if the United States followed gold-standard rules—to lower the stock of money and thereby income and prices in the United States. However, the U.S. gold stock rose during the first two years of the contraction and did not decline, demonstrating as in 1920 that other countries were being forced to adapt to our monetary policies rather than the reverse.

The international effects were severe and the transmission rapid,

not only because the gold-exchange standard had rendered the international financial system more vulnerable to disturbances, but also because the United States did not follow gold-standard rules. We did not permit the inflow of gold to expand the U.S. money stock. We not only sterilized it, we went much further. Our money stock moved perversely, going down as the gold stock went up. In August 1929, our money stock was 10.6 times our gold stock; by August 1931, it was 8.3 times the gold stock. The result was that other countries not only had to bear the whole burden of adjustment but also were faced with continued additional disturbances in the same direction, to which they had to adjust. As Harrison noted in early 1931, foreign commentators were particularly critical of the monetary policy of the United States because

the gold as it came into the country has been used by member banks to repay Federal reserve credit in one form or another, with the result that in this period the total volume of Federal reserve credit had declined by an amount equal to the gold imports. Thus it may be said that the United States has prevented the usual or normal effect of gold which has come to it . . . . The evils to the world of continued gold sterilization . . . are so great as to make desirable a careful scrutiny of Federal reserve open market policy.<sup>23</sup>

The effects first became severe in those countries that had returned to gold with the smallest actual gold reserves, and whose financial structures had been most seriously weakened by World War I—Austria, Germany, Hungary, and Rumania. To shore up the financial systems of those countries, international loans, in which the Reserve System participated, were arranged. But so long as either the basic pressure on those countries deriving from deflation in the United States was not relieved, or the fixed exchange-rate link which bound them to the U.S. dollar was not severed, such assistance was at best a temporary palliative. In country after country, that is what it proved to be. As they experienced financial difficulties, the United States, as we have seen, was in turn affected by the reflex influence of the events it had set in train.

The key role of fixed exchange rates in the international transmission mechanism is cogently illustrated by the case of China. China was on a silver rather than a gold standard. As a result, it had the equivalent of a floating exchange rate with respect to gold-standard countries. A decline in the gold price of silver had the same effect as a depreciation in the foreign exchange value of the Chinese yuan. The effect was to insulate Chinese internal economic conditions from the worldwide depression. As world prices fell in terms of gold, so did the gold price of silver. Hence the prices of goods in terms of silver could remain approximately the same. China could continue to maintain external balance without undergoing an internal deflation. And that is what happened. From 1929

<sup>23</sup> Harrison, *Open Market*, Vol. II, Apr. 27, 1931.

to 1931, China was hardly affected internally by the holocaust that was sweeping the gold-standard world,<sup>74</sup> just as in 1920-21, Germany had been insulated by her hyperinflation and associated floating exchange rate.<sup>75</sup>

The first major country to cut the link was Britain, when she left the gold standard in 1931. The trough of the depression in Britain and in other countries that accompanied Britain in leaving gold was reached in the third quarter of 1932. In the countries that remained on the gold standard or, like Canada, that went only part way with Britain, the depression dragged on. In China, whose currency appreciated relative to the pound as a result of the sharp depreciation of the pound relative to gold, the depression set in for the first time in 1931.

Of course, the country in the vanguard of such an international movement need not stay there. France, which had accumulated a large stock of gold as a result of returning to the gold standard in 1928 at an exchange rate that undervalued the franc, and therefore had much leeway, at some point passed the United States and not only began to add to its gold stock but also, after late 1931, to drain gold from the United States. The link between the franc and the dollar was cut when the United States suspended gold payments in March 1933, which proved to be the business cycle trough for the United States and countries closely linked to it. In France, which stayed on gold for a further interval, the contraction dragged on still longer. Although there was an upturn from July 1932 to July 1933, the low point of the interwar years was not reached until April 1935.

### 5. Development of Monetary Policy

The course of monetary policy in the difficult and critical years of the contraction was greatly influenced by the struggle for power within the Federal Reserve System, the beginnings of which were described in the preceding chapter. At the time of the stock market crash, the New York Reserve Bank acted in the tradition of its earlier dominance, moving rapidly, decisively, and on its own. The adverse reaction of the Board greatly inhibited further independent measures by New York.

In 1930, New York strongly favored expansionary open market operations, but after the middle of the year was unable to persuade either the other Bank governors—all of whom by this time had become members of the reorganized Open Market Policy Conference, which replaced the earlier Open Market Investment Committee—or the Board in Washington. The same was true in 1931, except that New York was less

<sup>74</sup>Arthur Salter, *China and Silver*, New York, Economic Forum, 1934, pp. 3-6, 15-17.

<sup>75</sup>Frank D. Graham, *Exchange, Prices, and Production in Hyperinflation: Germany, 1920-23*, Princeton University Press, 1931, pp. 287-288.

vigorous in pressing for expansionary action, though it was now supported by the new governor (Eugene Meyer) of the Federal Reserve Board.

The reaction to Britain's departure from gold did not provoke a flare-up of those conflicts. The measures adopted at that time were favored by almost all affiliated with the System. The agreement reflected the dominant importance then attached to the preservation of the gold standard and the greater significance attached to external than to internal stability, by both the System and the community at large. Not long after, the differences within the System that had been submerged in the fall of 1931 re-emerged, New York generally pressing for expansionary open market operations, supported by the governor and some other members of the Board and by a few Bank governors, and opposed by most of the Bank governors.

The open market operation of 1932 was acceded to largely under Congressional pressure and with the new Glass-Steagall Act ostensibly permitting release of the System's expansionary powers. The operation was terminated in August, shortly after Congress adjourned, because so many Bank governors remained unenthusiastic about the policy and reluctant or unwilling to pursue it. The deadlock persisted through the rest of the contraction.

### THE STOCK MARKET CRASH, OCTOBER 1929

At the time of the stock market crash, the Open Market Investment Committee consisted of five Bank governors with the New York governor as chairman. It was operating under its recommendation to the Board, September 4, which had been approved by the Board on October 1, to purchase "not to exceed \$25,000,000 a week" of short-term government securities if needed to supplement purchases of acceptances, "for the purpose of avoiding any increase and, if possible, facilitating some further reduction in the total volume of member bank discounts . . ." Up to the week ending October 23, the Committee had not made any government security purchases because bills had been available. The System's holdings had declined by \$16 million, while its bill holdings had increased by \$115 million.<sup>76</sup>

When the crash came, the New York Bank had no doubt about what steps should be taken and proceeded to take them. It purchased \$160 million of government securities in addition to encouraging New York banks to discount freely. The amount purchased was far in excess of the amount that the Open Market Investment Committee was authorized to purchase, but the New York Bank did not claim to be operating for the Committee. It contended it had the right to purchase government secu-

<sup>76</sup>Harrison, *Open Market*, Vol. I, minutes, Sept. 24, 1929, and letter, dated Oct. 1, 1929, Young to Harrison.



rities for its own account, as a matter of general credit policy, without the Board's approval.<sup>77</sup> Harrison informed Governor Young of the Federal Reserve Board that his directors had authorized him to purchase government securities without limitation as to amount, and that on October 29, before the call loan rate was announced, a purchase had been arranged.

Members of the Board regarded the New York Bank's failure to seek the authorization of the Board before taking action as smacking of insubordination, though some regarded the action itself as desirable. As a legal matter, the New York Bank seemed clearly within its rights. Under the 1923 agreement setting up the Open Market Investment Committee, each Reserve Bank retained the right to purchase and hold government securities for its own account. Young and most Board members acknowledged the legal right yet felt that the challenge to the Board's authority was insupportable. After much discussion, the Board finally authorized Young to tell Harrison that, if New York should request approval of a reduction of its rate to 5 per cent, the Board would consent on condition that no further purchases of government securities be made except with approval of the Board.<sup>78</sup> On November 1, the discount rate at the New York Bank was so reduced. To the New York directors it was clear that the System ought to proceed immediately with further purchases for "unless this is done, after the events of the past weeks, there may be greater danger of a recession in business with consequent depression and unemployment, which we should do all in our power to prevent," as they declared in a resolution they adopted on November 7.<sup>79</sup> Under the leadership of Harrison, the Open Market Investment Committee, meeting November 12, recommended that "the present limit of \$25,000,000 per week on the purchase of government securities be removed and that the Committee be authorized in lieu thereof to purchase not to exceed \$200,000,000 of government securities for account of such banks as care to participate . . ." having in mind also the fact "that present conditions may possibly develop to the point where, as an emergency measure, in the interest of maintaining banking and business stability, it may be necessary quickly to purchase large amounts of Government securities in order to avoid any undue stringency in credit."<sup>80</sup>

<sup>77</sup> Of the \$160 million government securities purchased by New York in the week ending Oct. 30, \$75 million was transferred to System account. During the following two weeks, the New York Bank bought an additional \$25 million directly for System account.

<sup>78</sup> Hamlin, *Diary*, Vol. 16, Oct. 29, 30, 1929, pp. 187-196. Miller did not consider the purchase desirable. He suggested a resolution to the effect that the Board would not have approved the purchase, had it been consulted; that New York was more concerned about the stock market than the general credit situation; that forcing the banks to come to the discount window would have been the proper response.

<sup>79</sup> For the resolution, see Harrison, *Miscellaneous*, Vol. I.

<sup>80</sup> Open Market, Vol. I, minutes of meeting, Nov. 12, 1929.

The next day, the Board notified the Committee that "the general situation was not sufficiently clarified for the System to formulate and adopt a permanent open market policy at that time," but conceded that if "an emergency should arise with such suddenness and be so acute that it is not practicable to confer with the Governor, the Board will interpose no objection to a purchase operation being undertaken, with the understanding, however, that prompt advice of such purchase be furnished the Board."<sup>81</sup>

On November 15, Governor Young of the Federal Reserve Board was in New York, and Harrison had an exchange of views with him: "I told him," Harrison wrote in recording the interview, "that I wanted a very frank and complete conversation with him regarding our present differences in the matter of the purchase of government securities . . . that it had become obvious that the Federal Reserve Board and the directors of the Federal Reserve Bank of New York were reaching a point in their views regarding their respective powers where it might have very serious consequences unless we could come to some sort of a workable understanding or agreement . . . I told him that more and more the Board had taken to itself not supervisory powers but the equivalent of operating functions and the responsibility for the detailed transactions of the various Federal reserve banks. . . ." Harrison then reviewed the Board's veto, earlier in 1929 for a period of four months, of the increase in the discount rate the directors of the New York Bank had repeatedly voted; the Board's decision that year to fix the spread above the minimum buying rate for acceptances within which the Bank might operate, although it had never done so earlier, and, during the fall of the year, its actual determination of the minimum rate, which had always been the Bank's prerogative; and finally, its stand

that we should go to the Federal Reserve Board in advance for a prior approval of any transactions in government securities . . . I told him that the logical consequence of his point of view, which was that the Federal Reserve Board should approve of all these things in advance, was that the Federal Reserve Board would become a central bank operating in Washington . . . [H]is only comment was that the Federal Reserve Board had been given most extraordinarily wide powers, that as long as the Board had those powers, they would feel free to exercise them and Congress could determine whether they objected to having a central bank operating in Washington.<sup>82</sup>

Neither side was prepared to make any concessions until Governor Young had a meeting with Owen D. Young, deputy chairman of the board of directors of the New York Bank, in the office of Secretary of the Treasury Mellon, the ex-officio chairman of the Reserve Board, on November 22 to discuss the Board's power over transactions in govern-

<sup>81</sup> *Ibid.*, letter, dated Nov. 13, 1929, Young to Harrison.

<sup>82</sup> Harrison, *Conversations*, Vol. I, Nov. 15, 1929.

ment securities. Secretary Mellon said he was willing to give the New York directors the widest discretion, but he realized that the Board had rights and duties in the matter. Owen D. Young said he saw no reason—apart from sudden critical emergencies, about which there was no dispute—his directors could not obtain the consent of the Board to all major transactions. Governor Young replied that was just what the Board wanted.<sup>83</sup>

The next day, November 23, Governor Young and Secretary Mellon met with Harrison, who stated that "we in New York were willing and prepared to operate any policy agreed upon either for our own account or for the System account." Young answered that he was prepared to approve without reservation the Open Market Investment Committee's recommendation of November 12, but first wanted to know

where this would leave the debated question of the New York bank's operating for its own account. I [Harrison] told him that I felt that this involved a matter of procedure and jurisdiction which I would like to leave for determination sometime later on when we were through this critical period and when we could work out some mutually satisfactory procedure when conditions and peoples' emotions were in a quieter and more normal state. I then made this proposition: That if the Federal Reserve Board would approve the Open Market Investment Committee's report without qualification, leaving it to the committee to execute, I would recommend to our directors on next Wednesday [November 27] that the Federal Reserve Bank of New York refrain, until such time as it and the Federal Reserve Board might formulate some mutually satisfactory procedure, from purchasing government securities for its own account as a matter of general credit policy without the Board's approval.

As a result of this understanding, the Board reconsidered, November 25, and voted to approve the Committee's recommendation and the policy outlined in the resolution of the directors of the New York Bank.<sup>84</sup> Although authorized to purchase \$200 million, the Committee purchased only \$155 million between November 27, 1929, and January 1, 1930.

In response to inquiries from other Banks about the New York purchases during the week of the stock market crash, Harrison wrote a long letter to all governors on November 27, describing the situation in New York at the time, explaining the reasons for the measures the Bank took, and defending them. Some governors supported the action and ex-

<sup>83</sup> Hamlin, *Diary*, Vol. 17, Nov. 12, 13, 22, 1929, pp. 13, 17, 20-22, 31-32.

<sup>84</sup> The motion to approve was passed 5 to 3, the Secretary of the Treasury and the Comptroller voting with Governor Young, Vice-Governor Platt, and Hamlin. Miller objected on the ground that "money was now cheap and would be made cheaper by the purchase of Government securities" and that it would be bad Federal Reserve policy—"abdication in favor of the Federal Reserve Bank of New York." The two other negative votes were cast by Board members Edward Cunningham, an Iowa farmer, and George James, a Memphis merchant (see section 7, below). Harrison, *Miscellaneous*, Vol. I, letter, dated Nov. 25, 1929, Young to Harrison; Office, Vol. II, memorandum of Nov. 25, 1929; Hamlin, *Diary*, Vol. 17, Nov. 24, 25, 1929, pp. 35-36, 38-40.

pressed willingness to participate in the purchases. Others criticized the action on the ground that it merely delayed "natural liquidation" and hence recovery.<sup>85</sup>

The situation which confronted the New York Bank during the first few weeks after the crash was to recur during the succeeding years of the contraction: it had a policy, which the Board or the other Banks would not approve, or would approve only reluctantly after protracted discussion. At the time of the crash, New York went ahead on its own. Though the Bank then yielded to the Board in November 1929, later on it again considered but, as we shall see, did not adopt, the alternative of ignoring the System account and purchasing for its own account, as it had in October 1929.

#### FROM THE STOCK MARKET CRASH TO BRITAIN'S DEPARTURE FROM GOLD, 1929-31

From the time of the crash on, the New York Bank favored the reduction of discount rates and purchase of bills and securities in sufficiently large amounts to offset reductions in discounts. The directors of the New York Bank apparently voted to reduce the discount rate from 5 per cent to 4½ per cent for the first time on November 14, 1929, and the Board gave its approval. On January 30, 1930, the directors voted to reduce the rate to 4 per cent; the Board disapproved by a tie vote. On February 7, the reduction was again voted by the directors and on the first vote by the Board again lost on a tie vote. One member then changed his vote to affirmative, not because he approved the rate reduction, but because he disapproved defeat of a motion on a tie vote; so the reduction was approved. The reduction of the rate to 3½ per cent on March 14 was apparently approved by the Board the first time the directors voted it. On April 24, the directors voted to reduce the discount rate to 3 per cent; the reduction was disapproved by the Board. It was voted again on May 1, with the directors this time even considering but deciding against a public statement if the Board should again disapprove. However, the Board approved it. Similar repeated delays were encountered in getting Board approval of reductions in buying rates on bills.<sup>86</sup>

<sup>85</sup> Harrison, *Miscellaneous*, Vol. I, Nov. 27, 1929; for criticism, see Notes, Vol. I, meeting of executive committee, June 9, 1930.

<sup>86</sup> For the time before Apr. 17, 1930, the first date of minutes of directors' meetings of the New York Reserve Bank in the Harrison Papers, we have relied mainly on Hamlin's *Diary* for statements about delays in Board approval of New York's requests for reductions in discount rates. Hamlin simply notes the Board's approval on Nov. 14, 1929, without indicating whether the motion to reduce was before the Board for the first time. He does not refer to the reduction in the rate, effective Mar. 14, 1930. (See Hamlin, *Diary*, Vol. 17, Nov. 14, 1929; Jan. 30, Feb. 6, Apr. 24, May 1, 1930, pp. 23, 87, 97, 139-141, 145-146; also Harrison, *Miscellaneous*, Vol. I, letter, dated Feb. 5, 1930, Harrison to all governors; another letter,

New York had even less success in winning approval of its recommendations for open market purchases. After the purchases in the final months of 1929, which were in accord with the usual seasonal pattern of increase in Federal Reserve credit outstanding, the Open Market Investment Committee was most reluctant to engage in further purchases. Some members were in favor of selling government securities in the usual pattern of the post-Christmas season. The final recommendation of the January meeting of the Committee was that "no open market operations in Government securities [were] necessary at this time either to halt or to expedite the present trend of credit."<sup>87</sup>

In early March, concerned about the worsening of the economic situation and the inability of the New York Bank to maintain its bill portfolio, the directors of the Bank voted to authorize purchase of \$50 million of government securities. The purchases were carried out after approval by the Board and a circular letter to all Bank governors asking whether they wanted to participate. When the Open Market Committee met formally at the end of March, it concluded that "at present there is no occasion for further purchases of Government securities."<sup>88</sup>

That was the final meeting of the Open Market Investment Committee. It was replaced by the Open Market Policy Conference of all twelve Bank governors, with an executive committee consisting initially of the same five governors who had constituted the Committee (New York, Boston, Chicago, Cleveland, Philadelphia). But the executive committee was in a different position from the former Committee. It was entrusted with executing policy decisions of the Conference; it did not, like the earlier Committee, both initiate and execute policy. The Conference itself remained a voluntary organization of equals. Each Bank was free to decide whether it would or would not participate in a purchase or sale recommended by the Conference, though dissenters were required to acquaint the Federal Reserve Board and the chairman of the executive committee with the reasons for not participating. Each Bank also reserved the option to withdraw from the Conference. New York was not at all happy about the change and consented to it reluctantly and only with the explicit proviso that the Conference had no authority over transactions in

dated Mar. 17, 1930, Case to Governor Young; and a letter, dated Apr. 29, 1930, Harrison to Platt; Notes, Vol. I, Apr. 24, May 1, 1930.)

At the Open Market Policy Conference meeting on May 21-22, 1930, Governor Harrison reported that "in a number of recent weeks the Federal Reserve Board had failed to approve without delay applications of the Federal Reserve Bank of New York for a lower minimum buying rate on bills, and that for considerable periods the New York bank had therefore been without any downward flexibility in its bill buying rate as was the case at that very time" (Open Market, Vol. I).

<sup>87</sup> *Ibid.*, minutes of meeting, Jan. 28-29, 1930.

<sup>88</sup> Miscellaneous, Vol. I, letter, dated Mar. 7, 1930, Case to all governors; Open Market, Vol. I, minutes of meeting, Mar. 24-25, 1930.

bankers' acceptance.<sup>89</sup> As in 1929, New York hoped to be able to accomplish through the purchase of bills what it might not be able to persuade the rest of the System to do through transactions in government securities. Unfortunately, New York was not successful with its alternative.

At its first meeting in May 1930, the Open Market Policy Conference made no recommendation but left limited authority in the hands of the executive committee. Early in June, Harrison recommended that the System undertake the purchase of \$25 million a week for a two-week trial period, arguing that "small purchases of Government securities at this time could do no harm . . . and might be desirable," and, as in earlier years, suggesting that security purchases be resorted to only if easing through the acceptance market failed. The recommendation to purchase was much milder than the statements at the meetings of the New York directors, and the amount recommended was much smaller than they thought desirable. Indeed, "there was some reluctance" on the part of the New York directors "to accept this program on the grounds that our difficulties of credit administration have grown largely out of our disposition to postpone action and to administer remedies in homeopathic doses." Apparently, however, Harrison felt that a bold program was certain to be rejected and preferred agreement on a small program to rejection of a large one. A majority of the executive committee and of governors agreed (after being consulted by telephone or telegram), the Board approved, and the purchase was made. A decline in the System's bill holdings during the two weeks largely offset the effect of the purchase of government securities, so, on June 23, Harrison suggested that purchases continue in the amount of about \$25 million a week. This time, the executive committee rejected the recommendation by a vote of 4 to 1.<sup>90</sup>

Faced with a clear rejection of its leadership, the New York Bank considered three alternatives: (1) simply to accede without further action in the hope that its views would eventually prevail; (2) to "withdraw from the . . . Conference and, assuming that the approval of the Federal Reserve Board either can be or need not be secured, purchase Government securities for the account of this bank"; (3) to conduct a campaign of persuasion. The Bank adopted the third alternative, perhaps partly because Harrison had lingering doubts about the validity of New York's

<sup>89</sup> Commenting the following year on the change, Harrison was recorded by Hamlin as saying that "he had always felt it was a mistake to put all the Governors on the Open Market Policy Conference; that the Governors came instructed by their directors; that under the former System the Executive Committee were never so instructed" (Hamlin, Diary, Vol. 19, Aug. 1931, p. 123). See also Harrison, Open Market, Vol. I, minutes of meeting, Mar. 24-25, 1930; Notes, Vol. I, May 1, 1930; Open Market, Vol. I, letter, dated May 15, 1930, Case to Young.

<sup>90</sup> Harrison, Open Market, Vol. I, minutes of meeting, May 21-22, 1930; Miscellaneous, Vol. I, telegram, dated June 3, 1930, Harrison to Young; Notes, Vol. I, June 5, 1930; Open Market, Vol. I, June 23, 1930.

position. As the report on the relevant directors' meeting has it, the decision to adopt the third alternative was influenced by the existence of a "real difference of opinion among those deemed capable of forming a judgment, as to the power of cheap and abundant credit, alone, to bring about improvement in business and in commodity prices."<sup>91</sup>

In July 1930, Harrison accordingly wrote a long letter to all governors, telling them his directors "felt so earnestly the need of continuing purchases of government securities that they have suggested that I write to you outlining some of the reasons why the Federal Reserve Bank of New York has for so many months favored having the Federal Reserve System do everything possible and within its power to facilitate a recovery of business." There followed a closely reasoned, informed, and well documented analysis of the economic situation and the problem of monetary policy. Harrison stressed the seriousness of the recession, indicated that while there were many other causes of the recession, tight money of the preceding two years had contributed to it, and placed greatest importance on the depressed state of the bond market and the limited availability of funds for long-term financing. "In previous business depressions," he wrote, "recovery has never taken place until there has been a strong bond market." Harrison acknowledged that there was little demand for short-term funds, and that "when the System buys securities, short-time money becomes more plentiful and cheaper." However, "it has been demonstrated in the past that in such circumstances, through a further increase in the reserves of member banks money will be made available for the bond market or shifted to the bond market from the short time market or from other investments less profitable than bonds." He pointed out that Federal Reserve credit had declined and that banks were sensitive to borrowing. "[A]n even small amount of borrowing under present conditions is as effective a restraint as substantially a greater amount was a year ago." He concluded that "while there may be no definite assurance that open market operations in government securities will of themselves promote any immediate recovery, we cannot foresee any appreciable harm that can result from such a policy and believe that the seriousness of the present depression is so great as to justify taking every possible step to facilitate improvement."<sup>92</sup>

One notable omission from Harrison's letter was reference to the stock of money, as such. Like almost every other document on monetary policy

<sup>91</sup> Harrison, Notes, Vol. I, June 26, 1930. On several occasions, Harrison revealed doubts (Notes, Vol. I, July 17, Sept. 17, 1930). It is clear from internal documents of the Bank that the technical personnel, notably W. R. Burgess and Carl Snyder, were the most consistent supporters of expansionary measures on a large scale. Perhaps because of these doubts, perhaps because of his overriding desire to secure consensus, Harrison continued to present to the rest of the System purchase proposals scaled down well below the level that some of the directors and technical personnel of the Bank regarded as desirable.

<sup>92</sup> Miscellaneous, Vol. I, letter, dated July 3, 1930, Harrison to all governors.

within the System until the 1950's, the emphasis was exclusively on credit conditions rather than the stock of money. However, the omission did not affect the policy conclusion; it only altered the line of argument through which it was reached. Consideration of the behavior of the stock of money would have led to precisely the same conclusion: that the System should act so as to prevent a reduction in the amount of high-powered money available and indeed so as to increase it. Moreover, as we saw in section 3, there was a particularly close connection at the time between the bond market and the money stock. Improvement in the bond market would have done much to avert the subsequent bank failures. And though this connection was not explicit in the letter, it was implicit.<sup>93</sup> Harrison's letter and the replies to it provide an extraordinarily illuminating and comprehensive picture of attitudes toward monetary matters within the System. Only two governors—Eugene Black of Atlanta and George Seay of Richmond—clearly and unambiguously agreed with Harrison's analysis and supported his policy recommendations. The rest disagreed, most of them sharply.

James McDougal of Chicago wrote that it seemed to him there was "an abundance of funds in the market, and under these circumstances, as a matter of prudence . . . it should be the policy of the Federal Reserve System to maintain a position of strength, in readiness to meet future demands, as and when they arise, rather than to put reserve funds into the market when not needed." He went on to stress the danger that "speculation might easily arise in some other direction" than in the stock market. McDougal had all along been the most outspoken opponent of the New York policy and was to remain for the rest of the contraction a consistent proponent of selling government securities on almost any occasion. The demands for which the System should husband its resources remained in the future. McDougal's outlook was particularly influential because Chicago was next only to New York in importance as a financial center, and because he had been with the System so long. McDougal had been appointed governor of the Chicago Bank at its founding in 1914, at the same time Strong was appointed governor in New York. He had had disagreements with New York on earlier occasions.<sup>94</sup>

<sup>93</sup> One important advantage of explicit attention to the stock of money, both on that occasion and later, would have been provision of a clearly defined indicator by which to judge in quantitative terms the needs and effects of policy. The outsider is struck, in reading the reports of discussions within the System, by the vagueness and imprecision of the criteria used. For example, with the "needs of business" undefined, one participant regarded "credit," also undefined, as "redundant," another as "tight." Lack of a common universe of discourse and inability to reduce differences of opinion to quantitative terms were probably important factors enabling differences to persist for so long with no approach to a meeting of minds.

<sup>94</sup> Harrison, Miscellaneous, Vol. I, letter, dated July 10, 1930, McDougal to Harrison; Lester V. Chandler, *Benjamin Strong, Central Banker*, Brookings, 1938, pp. 79, 445.

John U. Calkins of San Francisco was no less explicit than McDougal was. In an earlier letter to Governor Young explaining why San Francisco had not participated in the June open market purchases, he had stated that "with credit cheap and redundant we do not believe that business recovery will be accelerated by making credit cheaper and more redundant." In his reply to Harrison's letter, he repeated the sentiment, expressed the view that "the creation, promotion, or encouragement of a bond market" is not "within the province of the Federal Reserve System," and that "no encouragement of the market for foreign bonds can counterbalance the destructive effect upon our foreign trade of the tariff bill recently approved." He went on to say, "We believe that the volume of credit forcibly fed to the market up to this time has had no considerable good effect, certainly no discernible effect in the last few months. We also believe that every time we inject further credit without appreciable effort, we diminish the probable advantage of feeding more to the market at an opportune moment which may come."<sup>95</sup>

Lynn P. Talley of Dallas wrote that his directors were not "inclined to countenance much interference with economic trends through artificial methods to compose situations that in themselves grow out of events recognized at the time as being fallacious"—a reference to the stock market speculation of 1928-29. Talley's letter, like some others, reveals resentment at New York's failure to carry the day in 1929 and the feeling that existing difficulties were the proper punishment for the System's past misdeeds in not checking the bull market. "If a physician," wrote Talley, "either neglects a patient, or even though he does all he can for the patient within the limits of his professional skill according to his best judgment, and the patient dies, it is conceded to be quite impossible to bring the patient back to life through the use of artificial respiration or injections of adrenalin."<sup>96</sup>

W. B. Geery of Minneapolis wrote that "there is danger of stimulating financing which will lead to still more overproduction while attempting to make it easy to do financing which will increase consumption."<sup>97</sup>

George W. Norris of Philadelphia replied that discussions with an insurance company executive and with a private banker in Philadelphia had confirmed him in his own view "of the fruitlessness and unwisdom of attempting to depress still further the abnormally low interest rates now prevailing." Later in the year, at a meeting of the Open Market Policy Conference in September, Norris, in strong disagreement with what he regarded as the current policy of the System, read a lengthy memorandum summarizing the Philadelphia view. The Philadelphia Bank objected to

<sup>95</sup> Miscellaneous, Vol. I, letter, dated June 16, 1930, Calkins to Young; letter, dated July 10, 1930, Calkins to Harrison.

<sup>96</sup> Miscellaneous, Vol. I, letter, dated July 15, 1930, Talley to Harrison.

<sup>97</sup> *Ibid.*, letter, dated July 7, 1930, Geery to Harrison.

"the present abnormally low rates for money" as an interference "with the operation of the natural law of supply and demand in the money market . . ." and concluded, "this is a complete and literal reversal of the policy stated in the Board's Tenth Annual Report . . . We have been putting out credit in a period of depression, when it was not wanted and could not be used, and will have to withdraw credit when it is wanted and can be used."<sup>98</sup>

These views, which seem to us confused and misguided, were by no means restricted to the Reserve System. The Federal Advisory Council, whose members were leading bankers throughout the country, consistently adopted recommendations expressing the same point of view, using phrases such as, "the present situation will be best served if the natural flow of credit is unhampered by open-market operations."<sup>99</sup> However, even in the financial community, the New York Reserve Bank was not alone in its view of the situation. The July 1930 monthly letter of the Royal

<sup>98</sup> Harrison, Miscellaneous, Vol. I, letter, dated July 8, Norris to Harrison; Open Market, Vol. I, memorandum read by Norris at Sept. 25, 1930, meeting. The memorandum is such a remarkably clear statement of the real bills doctrine that was so widely accepted at the time and earlier that it is worth quoting at greater length. The policy which had

created artificially low interest rates, and artificially high prices for government securities . . . is an injustice to our member banks. It had resulted in making open market operations usurp the discount function, and tends to foster the regrettable impression that there is some element of impropriety in borrowing by member banks . . . [A]s the result of injecting a large amount of unasked and unneeded Federal Reserve credit into an already glutted money market, we find ourselves with over 600 millions of governments on hand, the bulk of which must ultimately be disposed of . . . We do not undertake to say how much Federal Reserve credit should be in use today, but we do hold to the belief that a substantial part of it should be the result of a demand expressed in borrowing by member banks, and used in cooperation with those banks. Less than one-sixth of it is of this character today.

In addition to the letters quoted, and the two from Black and Seay, a brief letter was sent to Harrison by O. M. Attebery, deputy governor at St. Louis, on behalf of Governor Martin, on vacation, expressing doubts and stating that conditions in the Eighth District provided no justification for further open market purchases (Miscellaneous, Vol. I, letter, dated July 9, 1930). Frederic H. Curtiss, chairman of the Boston Bank, sent a lengthy letter dated July 9 (the Boston Bank at the time had no governor, Harding having died in April, and Young, still governor of the Board, not yet having been appointed to fill the Boston Bank vacancy). Curtiss' letter expressed strong opposition to further purchases on the ground that they were likely to feed the stock market rather than the bond market.

Only the Federal Reserve Bank of Cleveland did not reply, but its governor acknowledged the letter by telephone. In a letter to Governor Young, Harrison summarized the views expressed by Governor Fancher of Cleveland on his own behalf and as spokesman for a majority of his directors, "that continued purchases of government securities would not contribute substantially to . . . recovery and that, therefore, they would not . . . favor further purchases" (Miscellaneous, Vol. I, letter, dated July 23, 1930, Harrison to Young).

<sup>99</sup> Quoted from recommendation, dated Nov. 18, 1930 (Federal Reserve Board, Annual Report for 1930, p. 228).

Bank of Canada concluded that "immediate and decisive action on the part of the Federal Reserve Banks in putting new funds into the market in large volume is what is necessary to arrest the present serious and protracted price decline and to change the present psychology of business."

One cannot read the correspondence with Harrison just reviewed, the minutes of open market meetings, and similar Reserve System documents without being impressed with the extraordinary differences between New York and most of the other Banks in the level of sophistication and understanding about monetary matters. Years of primary and direct responsibility for the conduct of monetary policy in the central money market of the country and of cooperation with men similarly placed in the other leading money markets of the world had developed in the technical personnel, officers, and directors of the New York Bank a profound awareness of monetary relations and a sensitive recognition of the effects of monetary policy actions. Those qualities were clearly absent at most other Reserve Banks, which had of necessity been concerned primarily with local and regional matters, or at the Federal Reserve Board, which had played only a minor role in the general conduct of policy and had had no important operating functions.

The largely negative response evoked by Harrison's letter induced New York on several occasions during July to consider again engaging in open market purchases on its own but with the approval of the Board, and Harrison sounded out the sentiment of the Board about such action. The results were sufficiently unfavorable to deter any attempt.<sup>100</sup>

By September, 1930, some of the Banks were even opposed to seasonal easing. As Harrison told his directors,

Some of the other Federal Reserve Banks, including perhaps a majority of the banks whose governors form the executive committee of the System Open Market Policy Conference, advocate a policy of correction rather than of anticipation. They would allow tightening of the money market and hardening of rates of interest to develop, and then would move to correct the situation through the purchase of Government securities.

A few days later, when Carl Snyder, at a meeting of the officers' council of the New York Bank, suggested that "this deflation should now be aggressively combatted by additional purchases of Government securities . . .," Harrison replied that "from a System standpoint it is a practical impossibility to embark on such a program at the present time—to do so would mean an active division of System policy."<sup>101</sup>

Despite the decline in Federal Reserve credit outstanding, the Board described its policy for the year 1930 as one of "monetary ease . . . expressed through the purchase at intervals of additional United States

<sup>100</sup> Harrison, Notes, Vol. I, July 10, 24, 1930; and Office, Vol. II, June 5, 1930.

<sup>101</sup> Notes, Vol. I, Sept. 11, 17, 1930.

Government securities and in progressive reductions of reserve bank discount and acceptance rates."<sup>102</sup> This is a striking illustration of the ambiguity of the terms "monetary ease" and "tightness" and of the need stressed above (p. 272) to interpret Federal Reserve actions in the light of all the forces affecting the stock of money and credit conditions. It seems paradoxical to describe as "monetary ease" a policy which permitted the stock of money to decline in fourteen months by a percentage exceeded only four times in the preceding fifty-four years and then only during extremely severe business-cycle contractions. And those words seem especially paradoxical when other factors were tending to expand the money stock, so that a potential expansion was converted into an actual contraction entirely by the decline in Federal Reserve credit outstanding.

In the context of the changes then occurring in the economy and in the money markets, the policy followed should be regarded as one of monetary "tightness" not "ease." During a period of severe economic contraction extending over more than a year, the System was content to let its discounts decline by nearly twice its net purchases of government securities, and to let its total credit outstanding decline by almost three times the increase in the gold stock. Through early 1932, the most striking feature of the System's portfolio of government securities and bills bought is the usual seasonal pattern of contraction during the first half of the year and expansion during the second. From August 1929 to October 1930, the whole increase in government securities plus bills bought came in the second half of 1929. The System's holdings of government securities plus bills bought were nearly \$200 million lower at the end of July 1930 than they were at the end of December 1929. Even a mechanical continuation of the System's earlier gold sterilization program, by which it had quite explicitly recognized the need to determine its actions in light of other factors outside its control, would have called for more vigorous expansionary action from August 1929 to October 1930. Such action would have limited the decline in Federal Reserve credit outstanding to \$210 million, the magnitude of the rise in the gold stock, instead of allowing the actual seasonally adjusted decline of \$590 million. As we read the earlier policy statements of the Board, they called for going beyond mechanical gold sterilization in view of contemporary economic conditions. Since the bull market in stocks had collapsed and there were no signs of anything approaching speculation in commodities, any expansion in credit would be likely to be, in the words of the *Tenth Annual Report* (for 1923), "restricted to productive uses."<sup>103</sup>

<sup>102</sup> Federal Reserve Board, *Annual Report for 1930*, p. 1.

<sup>103</sup> It should be noted, however, that the possibility that easy money conditions might stimulate speculative excesses in the stock market was a recurrent theme in