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## CHAPTER 1

# New Deal Changes in the Banking Structure and Monetary Standard

THE New Deal period offers a striking contrast in monetary and banking matters. On the one hand, monetary policy was accorded little importance in affecting the course of economic affairs and the policy actually followed was hesitant and almost entirely passive. On the other hand, the foundations of the American financial structure and the character of the monetary standard were profoundly modified. Both developments were direct outgrowths of the dramatic experiences of the preceding years. The apparent failure of monetary policy to stem the depression led to the relegation of money to a minor role in affecting the course of economic events. At the same time, the collapse of the banking system produced a demand for remedial legislation that led to the enactment of federal deposit insurance, to changes in the powers of the Federal Reserve System, and to closer regulation of banks and other financial institutions. The depressed state of the economy, the large preceding fall in prices and, despite those conditions, the poor competitive position of our exports thanks to the depreciation of the pound and other currencies, all combined with the New Deal atmosphere to foster experimentation with the monetary standard. The experiments involved temporary departure from gold, a period of flexible and depreciating exchange rates, silver purchases, subsequent nominal return to gold at a higher price for gold, and drastic changes in the terms and conditions under which gold could be held and obtained by private parties.

This chapter describes the changes that were made in the banking structure (section 1) and in the monetary standard (section 2). The next chapter discusses the monetary policies followed during the New Deal period.

### 1. *Changes in the Banking Structure*

Three kinds of legislative measures were enacted after the 1933 banking panic: emergency measures designed to reopen closed banks and to strengthen banks permitted to open; measures that effected a more lasting alteration in the commercial banking structure—the most important being federal deposit insurance—and, more generally, in the financial structure; measures that altered the structure and powers of the Federal Reserve System. In addition, the banking system was affected in important

ways by the reaction of the banks themselves, independently of legislation, to their experiences during the prior contraction.

#### EMERGENCY MEASURES

We have already had occasion to refer to the Emergency Banking Act of March 9, 1933. Title I of the act approved and confirmed the action taken by President Roosevelt in proclaiming a nationwide bank holiday from March 6 to March 9, inclusive, under the wartime measure of October 6, 1917, which conferred broad powers over banking and currency upon the President of the United States.<sup>1</sup> Title I, further, amended the wartime measure to empower the President in time of national emergency to regulate or prohibit the payment of deposits by all banking institutions. During the period of emergency proclaimed by the President, member banks were forbidden to transact any banking business unless authorized by the Secretary of the Treasury with the approval of the President.

Title II of the act provided for the reopening and operation on a restricted basis of certain national banks with impaired assets, which under existing laws would have been placed in receivership and liquidated. Conservators were to be appointed for those banks by the Comptroller of the Currency. The Comptroller could direct the conservators to make available for immediate withdrawal amounts of existing deposits he deemed it safe to release; and the conservators, subject to his approval, could receive new deposits, available for immediate withdrawal without restriction and segregated from other liabilities of the bank. The conservators were also to be charged with the duty of preparing plans of reorganization, subject to the Comptroller's approval, which could be put into effect with the consent of 75 per cent of a bank's depositors and other creditors or of two-thirds of the stockholders.

Title III provided for issues of nonassessable preferred stock by national banks to be sold to the general public, or the Reconstruction Finance Corporation (RFC), which might also buy similar issues from state banks.

Title IV provided for emergency issues of Federal Reserve Bank notes up to the face value of direct obligations of the United States deposited as security, or up to 90 per cent of the estimated value of eligible paper and bankers' acceptances acquired under the provisions of the Emergency Banking Act. After the emergency recognized by the Presidential proclamation of March 6, 1933, had terminated, Federal Reserve Bank notes could be issued only on the security of direct obligations of the United States. Over \$200 million of Federal Reserve Bank notes were issued

<sup>1</sup> By a proclamation issued on Dec. 30, 1933, the President relinquished jurisdiction over nonmember banks assumed by the federal government at the time of his proclamation of a banking holiday.

in 1933. Thereafter until the war, they were retired as fast as returned from circulation. The liability for those notes was assumed by the Treasury in March 1935.

Under Title IV, Federal Reserve Banks were also authorized, until March 3, 1934, to make advances in exceptional and exigent circumstances to member banks on their own notes on the security of any acceptable assets. That provision superseded the one regarding advances to member banks in the Glass-Steagall Act (see Chapter 7, footnote 26). The provision was extended by Presidential proclamation until March 3, 1935, when it expired. The provision adopted in the Banking Act of 1935 omitted the requirement that advances be made only in exceptional and exigent circumstances and to member banks whose other means of obtaining accommodation from Federal Reserve Banks were exhausted (see below, pp. 447-448).

### *Opening of Banks*

Under the authority of the Emergency Banking Act, President Roosevelt issued a proclamation on March 9 continuing the banking holiday, and an executive order on March 10 empowering the Secretary of the Treasury to issue licenses to member banks to reopen. Every member bank was directed to make application for a license to the Federal Reserve Bank of its district, which would serve as an agent of the Secretary in granting licenses. The executive order also empowered state banking authorities to reopen their sound banks that were not members of the Federal Reserve System. Another executive order dated March 18 granted state banking authorities permission to appoint conservators for unlicensed state member banks when consistent with state law.

In a statement to the press on March 11 and a radio address on March 12, the President announced the program for reopening licensed banks on March 13, 14, and 15. Member banks licensed by the Secretary of the Treasury as well as nonmember banks licensed by state banking authorities "opened for normal business on an unrestricted basis, except so far as affected by legal contracts between the banks and depositors with respect to withdrawals or notice of withdrawals"<sup>2</sup> on March 13, in the twelve Federal Reserve Bank cities; on March 14, in some 250 cities having active, recognized clearing house associations; and on March 15, elsewhere.

### *Effect on Number and Deposits of Banks*

At the turn of the year, two months before the banking holiday, there had been nearly 17,800 commercial banks in operation, by the definition of banks then in use (Table 13). When the banking holiday was ter-

<sup>2</sup> Statement by the Secretary of the Treasury to the superintendent of banks of each state, Mar. 11, 1933, *Federal Reserve Bulletin*, Mar. 1933, p. 128.

TABLE 13  
NUMBER AND DEPOSITS OF COMMERCIAL BANKS BEFORE  
AND AFTER BANKING HOLIDAY

| Definition of Banks and<br>Class of Banks   | Number<br>(1) | Deposits<br>(billions of dollars)                                 |  | Ratio<br>(3) ÷ (2)<br>(4) |
|---|---------------|---|--|---------------------------|
|   |               | Adjusted<br>Demand<br>Plus Time,<br>Seasonally<br>Adjusted<br>(2) | Total<br>Demand<br>Plus Time,<br>Unadjusted<br>for Seasonal<br>(3) |                           |
| As defined in:  |               | DEC. 31, 1932   |  |                           |
| <i>All-Bank Statistics</i>  |               |   |  |                           |
| 1. Active commercial banks  | 18,074        | 29.2  | 36.1   | 1.24                      |
| 2. Not classified as banks by<br>1932 definition                                      | 278           | 1.0   |  |                           |
| <i>Federal Reserve Bulletin, 1932</i>   |               |   |  |                           |
| 3. Active commercial banks  | 17,796        | 28.2  |  |                           |
| MAR. 15, 1933   |               |   |  |                           |
| 4. Suspended, merged, or<br>liquidated between<br>Dec. 31, 1932, and<br>Mar. 15, 1933 | 447           |   | 0.2  |                           |
| 5. Total commercial banks<br>(line 3 minus line 4)                                    | 17,349        |   |  |                           |
| 6. Licensed   | 11,878        | 23.3  | 27.4   | 1.18                      |
| 7. Unlicensed   | 5,430         | 3.4   | 4.0  |                           |
| 8. Licensed plus unlicensed<br>(line 6 plus line 7)                                   | 17,308        | 26.7  | 31.4   |                           |
| 9. Discrepancy<br>(line 5 minus line 8)   | 41            |   |  |                           |

NOTE: Where reported figures are not available, estimates are shown only for items useful in deriving line 8, as described in source notes.

SOURCE, BY LINE

- Col. 1: Interpolation between June 1932 and June 1933 figures, shown in *All-Bank Statistics*, p. 37; the interpolation was based on June and Dec. 1932 and June 1933 figures on number of banks in *Banking and Monetary Statistics*, p. 19. The difference between the latter and former series at June dates was interpolated along a straight line and added to the Dec. figure in *ibid.*  
Col. 2: Table A-1.  
Col. 3: Interpolation between June 1932 and June 1933 figures, shown in *All-Bank Statistics*, p. 36; the interpolation was based on June and Dec. 1932 and June 1933 figures on deposits of banks in *Banking and Monetary Statistics*, p. 19. The ratio of the Dec. figure to its own inter-June straight-line trend value was multiplied by the straight-line trend value computed at the end of Dec. between the June figures in *All-Bank Statistics*.
- Col. 1: Line 1 minus line 3.  
Col. 2: The excess of demand deposits adjusted plus time deposits for June dates, 1932-33, in *All-Bank Statistics* (pp. 60 and 36), over the corresponding sums in *Banking and Monetary Statistics* (p. 34) was obtained; an estimate of the excess was interpolated for Dec. along a straight line. An estimate was then added for deposits

(continued)

## NOTES to TABLE 13 (continued)

in commercial banks included in the *Banking and Monetary Statistics* series but not included in the *Federal Reserve Bulletin (FRB)* series for 1932 (referred to in the table as defined in *FRB*, 1932, ). *FRB* in 1932 did not show adjusted deposits, so only a comparison of total deposits excluding interbank deposits in this source (Dec. 1933, p. 746) and in *Banking and Monetary Statistics* (p. 19) is possible. A rough conversion to adjusted deposits was made of excess of total deposits in *ibid.* over the *FRB* figure, and added to the excess of adjusted deposits in *All-Bank Statistics* over the series in *Banking and Monetary Statistics*.

3. Col. 1: *FRB*, Dec. 1933, p. 746.  
Col. 2: Line 1 minus line 2.
4. Cols. 1, 3: *FRB*, Sept. 1937, p. 867.
6. Col. 1: Sum of figures for licensed member banks on Mar. 15, 1933 (*FRB*, June 1935, p. 404), and for licensed nonmember banks on Mar. 22, 1933 (*Annual Report* of the Secretary of the Treasury, 1933, p. 24).  
Col. 2: Figure for end of Mar. from Table A-1: (a) adjusted to Mar. 15, by multiplying by ratio of total deposits of licensed member banks on Mar. 15 to corresponding figure for Mar. 29 (25,554/25,850, *FRB*, June 1935, p. 404 and Apr. 1933, p. 216); and (b) adjusted to 1932 definition of banks by subtracting line 2, col. 2, reduced 10 per cent for assumed change in deposits, Dec. 31, 1932-Mar. 15, 1933.  
Col. 3: Sum of figures for licensed member banks on Mar. 15, 1933 (*FRB*, June 1935, p. 404), for licensed nonmember banks on Apr. 12, 1933 (*FRB*), minus an estimate of the deposits in nonmember banks that were licensed between Mar. 15 and Apr. 12. The figures are deposits as of Dec. 31, 1932, scaled down 10 per cent for assumed change in deposits, Dec. 31, 1932-Mar. 15, 1933.
7. Cols. 1, 3: Derived as the sum of:

|   | Number | Deposits<br>(\$ millions) |
|---|--------|---------------------------|
| (a) Unlicensed member banks on<br>Mar. 15, 1933 ( <i>Federal Reserve Bulletin</i> ) | 1,621  | 2,867                     |
| (b) Unlicensed nonmember banks on<br>Apr. 12, 1933 ( <i>FRB</i> )                   | 2,959  | 1,321                     |
| (c) Fall in unlicensed nonmember banks,<br>Mar. 15-Apr. 12, 1933                    | 850    | 325                       |
|   | 5,430  | 4,513                     |

For item c, the changes, Mar. 15-Apr. 12, 1933, were estimated as follows:

|   | Number |
|---|--------|
| (1) Licensed nonmember banks,<br>Mar. 22 ( <i>Annual Report</i> ,<br>Treasury, 1933, p. 24)                             | 6,800  |
| (2) Licensed nonmember banks,<br>Apr. 12 ( <i>FRB</i> , June 1935, p. 404)  | 7,392  |
| (3) Liquidations of licensed and<br>unlicensed nonmember banks,<br>Mar. 16-Apr. 30 ( <i>FRB</i> ,<br>Apr. 1934, p. 251) | 258    |
| Change in number, (2) + (3) - (1)   | 850    |

We had no information on deposits corresponding to numbers shown above. We arbitrarily assumed that the change in deposits in licensed nonmember banks, Mar. 22-Apr. 12, 1933, on a per-bank basis, approximated the change in deposits of licensed member banks, on a per-bank basis, Mar. 15-Apr. 12, 1933. The ratio for member banks between those two dates was 105.0. We used 104.0 for nonmember banks, multiplied average deposits on Apr. 12 by this ratio to get the

(continued)

average on Mar. 22, and multiplied again by the number of licensed nonmember banks to get estimated deposits in licensed nonmember banks on Mar. 22.

|   | Deposits<br>(\$ millions) |
|---|---------------------------|
| (1) Licensed nonmember banks, Mar. 22 (as above)  | 4,803                     |
| (2) Licensed nonmember banks, Apr. 12 ( <i>FRB</i> ,<br>June 1935, p. 404)  | 5,020                     |
| (3) Liquidations of licensed and unlicensed nonmember<br>banks, Mar. 16-Apr. 30 ( <i>FRB</i> , Apr. 1934, p. 251) | <u>108</u>                |
| Change in deposits, (2) + (3) - (1)   | <u>325</u>                |

The figure for number of banks needed no further adjustment. That for deposits needed to be reduced \$161 million to correct for overstatement of deposits in nonmember banks; and by \$321 million, for overstatement of deposits in member banks. The deposits of nonmember banks on Apr. 12, 1933, and of member banks on Mar. 15, 1933, are the deposits those banks had on Dec. 31, 1932. We have a measure of the overstatement for nonmember banks on June 30, 1933: data on number of and deposits in unlicensed member and nonmember banks in *Federal Reserve Bulletin*, June 1935, p. 404, where member bank deposits are the deposits those banks held on June 30, 1933, and nonmember bank deposits are the deposits those banks held on Dec. 31, 1932. These figures may be compared with the data in *All-Bank Statistics*, p. 72 (6 mutual savings banks with estimated \$7 million in deposits have been deducted to obtain all commercial bank figures), which presumably show actual June 30, 1933, nonmember as well as member bank figures. The Dec. 1932 data for nonmember banks overstate deposits on June 30, 1933, by 12.2 per cent. Applying this percentage to line b, above, yields \$161 million.

The measure of the overstatement for member banks is also based on an end-of-June 1933 comparison. For June 28, 1933, deposits in unlicensed member banks are the deposits those banks had on Dec. 31, 1932 (*FRB*, July 1933, p. 453). For June 30, 1933, we have actual deposits in those banks on this date (*FRB*, June 1935, p. 404). There is an 11.2 percentage difference between the two sets of figures. Applying this percentage to line a, above, yields \$321 million.

7. Col. 2: Entry for unlicensed in col. 3 divided by ratio, line 6, col. 4.
9. Col. 1: Line 3 minus the sum of lines 4 and 8. Any of the components, lines 4, 6, and 7, may contribute to the discrepancy of 41 banks, based on the total shown in line 3. (In *Banking and Monetary Statistics*, p. 19, the total figure is 17,802, presumably because of the addition of certain private banks that did not report to state banking authorities and of institutions earlier not classified as commercial banks.) Line 4, for example, gives revised figures. Earlier sources showed the number of suspended banks, Jan. 1-Mar. 15, 1933, as 462 (see *Federal Reserve Bulletin*, Apr. 1934, p. 251). If 15 banks were excluded from the number of suspensions by the later source because they were reopened by June 30, 1933 (banks not licensed after the holiday were not considered suspensions if reopened by that date), our total of active banks in Dec. 1932 derived from lines 4, 6, and 7 would be too small by that number. Both lines 6 and 7 are partly estimated. The use of Mar. 22 figures for licensed nonmembers may slightly exaggerate the total for all banks in line 6. The figure for unlicensed nonmember banks included in line 7 was obtained indirectly and may well be too small not only by the discrepancy of 41 but also by a larger number, if line 6 is an overstatement.

minated, only 17,300 remained to be recorded in the statistics, and fewer than 12,000 of those were licensed to open and do business. The more than 5,000 unlicensed banks were left in a state of limbo, to be either reopened later—the fate of some 3,000—or to be closed for good and either liquidated or consolidated with other banks—the fate of over 2,000

TABLE 14  
DISPOSITION BY DECEMBER 31, 1936, OF COMMERCIAL BANKS NOT LICENSED TO OPEN AT  
TERMINATION OF BANKING HOLIDAY, MARCH 15, 1933  
(deposits in millions of dollars)

| Date                                     | Number<br>Still<br>Unlicensed<br>(1) | Change in Number of Banks |                                 |   | Deposits<br>in Banks<br>Still<br>Unlicensed <sup>a</sup><br>(5) | Change in Deposits in Banks |                                 |   |
|--|--------------------------------------|---------------------------|---------------------------------|---|---|-----------------------------|---------------------------------|---|
|  |                                      | Total<br>(2)              | Licensed<br>to<br>Reopen<br>(3) | Suspended,<br>Liquidated,<br>or Merged<br>(4) |   | Total<br>(6)                | Licensed<br>to<br>Reopen<br>(7) | Suspended,<br>Liquidated,<br>or Merged<br>(8) |
| 1933                                     |                                      |                           |                                 |   |   |                             |                                 |   |
| Mar. 15                                  | 5,430                                |                           |                                 |   | 4,031   |                             |                                 |   |
| June 30                                  | 3,078                                | 2,352                     | 1,964                           | 388   | 2,200   | 1,831                       | 642                             | 1,189   |
| Dec. 30                                  | 1,769                                | 1,309                     | 576                             | 733   | 1,025   | 1,175                       | 496                             | 679   |
| 1934                                     |                                      |                           |                                 |   |   |                             |                                 |   |
| June 30 <sup>b</sup>                     | 622                                  | 1,147                     | 477                             | 670   | 346   | 679                         | 225                             | 454   |
| Dec. 26                                  | 190                                  | 432                       | 174                             | 258   | 96  | 250                         | 79                              | 171   |
| 1936                                     |                                      |                           |                                 |   |   |                             |                                 |   |
| Dec. 31                                  | 0                                    | 190                       | 107                             | 83  | 0   | 96                          | 67                              | 29  |
| Total                                    |                                      |                           |                                 |   |   |                             |                                 |   |
| Mar. 15,<br>1933, to<br>Dec. 31,<br>1936 |                                      | 5,430                     | 3,298                           | 2,132   |   | 4,031                       | 1,509                           | 2,522   |

<sup>a</sup> Deposits are unadjusted for interbank deposits, float, or seasonal.

<sup>b</sup> For nonmember banks, June 27, 1934.

#### SOURCE, BY COLUMN

- (1, 5) Sums of data for member and nonmember banks.  
Mar. 15, 1933: Unrounded figures from notes to Table 13, line 7, col. 1.  
June 30, 1933: *All-Bank Statistics*, p. 72 (6 mutual savings banks with estimated \$7 million in deposits deducted to obtain all unlicensed commercial bank figures). Other dates: *Federal Reserve Bulletin*, Jan. 1935, p. 62. Zero is shown for Dec. 31, 1936, although there were still 10 unlicensed banks, with \$1,748,000 deposits, neither granted licenses to reopen nor placed in liquidation or receivership on this date (*FRB*, Sept. 1937, p. 867). These banks are treated here as if they were in receivership by this date.
- (2) Change in col. 1.
- (3) Col. 2 minus col. 4.
- (4, 8) *Annual Report of the Comptroller of the Currency*, 1934, pp. 785-790; 1935, pp. 807-808. Figure for Dec. 31, 1936, is a residual obtained by subtracting sum of data through Dec. 30, 1934, from total for period through Dec. 31, 1936, in *FRB*, Sept. 1937, p. 867.
- (6) Change in col. 5.
- (7) Col. 6 minus col. 8. Deposits in banks granted licenses, July 1, 1933, to Dec. 31, 1936 (*FRB*), amounted to \$716 million compared with total of \$867 million shown here.



(Table 14). The changes in deposits were only slightly less drastic. From December 1932 to March 15, 1933, deposits in banks open for business fell by one-sixth. Seventy per cent of the decline was accounted for by the deposits on the books of banks not licensed to open, yet not finally disposed of (Table 13, lines 3-7, col. 2).

The banks licensed to open operated generally without restrictions, though in some cases legal contracts were in effect limiting withdrawals by depositors to a specified fraction of the amounts due them.<sup>3</sup> Many of the unlicensed banks, in their turn, were open for a limited range of business, with conservators authorized to receive new deposits subject to the order of the depositor and segregated from other funds. The line between licensed and unlicensed banks was therefore less sharp in practice than in the records.

### *Fate of Unlicensed Banks*

Table 14 shows what happened to the unlicensed banks over the next several years. By the end of June 1933 over 2,300 of the banks, holding nearly half the total restricted deposits, had been disposed of—nearly 2,000 banks were licensed to reopen, 388 closed. However, the closed banks had decidedly the larger volume of deposits, and this was to remain true for the rest of the period as well, so that the three-fifths of the banks ultimately reopened held only three-eighths of the deposits.

The RFC played a major role in the restoration of the banking system as it had in the futile attempts to shore it up before the banking holiday. It invested a total of over \$1 billion in bank capital—one-third of the total capital of all banks in the United States in 1933—and purchased capital issues of 6,139 banks, or almost one-half the number of banks.<sup>4</sup> In addition, it made loans to open banks for distribution to de-

<sup>3</sup> "Deposits in licensed banks the payment of which has been deferred beyond the time originally contemplated" amounted to \$103 million in June 1933, \$55 million in June 1934, and were apparently zero in June 1935 (sums of national and nonnational bank data from Comptroller of the Currency, *Annual Report*, 1933, pp. 420, 629; 1934, pp. 523, 755).

<sup>4</sup> The RFC was authorized to buy preferred stock and capital notes and debentures of banks by the Emergency Banking Act and an amendment to it. Most of the banks in which it invested were those originally permitted to resume operations only on a limited withdrawal basis (Jesse H. Jones [with Edward Angly], *Fifty Billion Dollars*, New York, Macmillan, 1951, p. 21). To avoid the suggestion that RFC investment signified a bank's weakness, some stronger banks which did not actually need new capital were asked to sell the Corporation a modest amount of preferred stock or capital notes. According to Jones, fewer than twenty of the more than six thousand banks into which the RFC put capital actually had no need of it (p. 34). The capital was invested on the understanding that it would be retired out of about one-half the net earnings of the banks after payment of dividends or interest on RFC capital. RFC investment permitted the banks to charge off losses. Approximately 51 per cent of its investment had been retired by February 1939 (Reconstruction Finance Corporation, *Seven-Year Report to the*

positors of \$187 million and to closed banks of over \$900 million, on the security of the best assets of those institutions. The loans, made after the banking panic, were in addition to loans of \$951 million to open banks and of \$80 million to closed banks made before the banking panic.<sup>5</sup> In aggregate, 5,816 open banks and 2,773 closed banks obtained RFC loans totaling more than \$2 billion. RFC and other federal authorities doubtless also played a role in fostering bank mergers, particularly purchase by larger banks of smaller banks with doubtful portfolios, that served further to reduce the number of individual banks and, hopefully, to strengthen their solvency.

### *Effects on Money Stock Measures*

The banking holiday and its aftermath make our recorded figures on the money stock even less reliable than for other times as indicators of some consistent economic magnitude meriting the label money. Before the banking holiday, many banks had imposed restrictions on the use of deposits in an attempt to avoid suspension. Those deposits are counted in full in the recorded money stock. On the other hand, after the holiday, both restricted and unrestricted deposits in unlicensed banks are excluded completely from the recorded money stock.<sup>6</sup> The shift in treatment, which can hardly correspond to a shift in economic significance, is the major factor behind the sharp decline in the recorded figures in March 1933. Consistent accounting would require exclusion of restricted deposits throughout or their inclusion throughout. Criteria of economic significance would call for including in the money stock a fraction of restricted deposits, the fraction fluctuating over time. Any one of these courses would eliminate the discontinuous drop in our series in March 1933 and yield a milder decline before March and a milder rise thereafter.

Unfortunately, there is no adequate statistical basis for estimating

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*President and the Congress of the U.S., February 2, 1932, to February 1, 1939, p. 5).*

<sup>5</sup> RFC, *Seven-Year Report*, pp. 4, 6, for total loans. For RFC loans from Feb. 2, 1932, to Mar. 3, 1933, see RFC, *Summaries of the Activities of the RFC and Its Condition as of December 31, 1935*, GPO, Jan. 1936, p. 14. Loans for distribution to depositors in closed banks were relatively small before the banking holiday because the original RFC Act limited their aggregate amount to \$200 million. An amendment June 14, 1933, removed the limit. Loans to going banks were relatively small after the banking holiday because they were superseded by RFC capital purchases.

<sup>6</sup> The restricted deposits in licensed banks referred to in footnote 3 above are included in Table A-1. Figures on unrestricted deposits in unlicensed banks are available only for national banks at call dates June 1933–Dec. 1934 (Comptroller of the Currency, *Annual Report*, 1933, p. 649; 1934, p. 776; 1935, p. 806). The largest amount of unrestricted deposits recorded was \$77 million in June 1933, 8 per cent of frozen deposits. The absolute amount declined along with frozen deposits in unlicensed banks, the ratio of the first to the second remaining in the neighborhood of a tenth.

restricted deposits before March 1933;<sup>7</sup> hence they cannot easily be excluded. Table 15 and Chart 34 therefore bridge the discontinuity at that month by *including* restricted deposits throughout to derive an alternative estimate of the stock of money similar in construction before and after the holiday. This alternative estimate is compared with the estimate in our basic tables.

Neither of these two estimates is economically ideal. The alternative estimate may be viewed as setting an upper limit to the "ideal" estimate of the money stock, and our money stock figures in Table A-1 as setting a lower limit. We have noted that the figures in Table A-1 are not continuous from February to March 1933, since the figures for February include restricted deposits and the figures for March exclude them. That is why a dotted line is used on Chart 34 in connecting the values for February and March. The alternative estimate at the end of March, however, is also not strictly continuous with the end-of-February figure, so a dotted line again is used in connecting the two figures. At the end of March, depositors in unlicensed banks, for which neither a conservator nor a receiver had been appointed, had reason to regard deposits in such

<sup>7</sup> See *Federal Reserve Bulletin*, Dec. 1937, p. 1206, for a discussion of the extent of the restriction of withdrawals before the banking holiday.

The placing of restrictions on deposit withdrawals, a practice that had been used in 1931 in the East North Central States, became more prevalent in 1932 as a measure to cope with the steady withdrawal of funds. These restrictions on deposit withdrawals were usually imposed through 'depositors' agreements' deferring withdrawal of varying percentages of deposits over periods of time ranging up to five years, certain percentages of deposits to be released at the end of the first year and additional percentages at the end of the succeeding years. New business was conducted on an unrestricted basis. Unfortunately, comprehensive figures are not available to show the number of banks that obtained deposit deferment agreements, or the amount of deposits involved in such deferment agreements, but from what information is available it appears that the practice was followed in a number of States during 1931 and 1932.

Another type of bank moratoria that became common during this period, particularly in the East North Central States, was the reorganization of banks through the waiver or surrender of a portion of deposits by the depositors. This was accomplished in some cases through outright contributions by certain of the depositors, but usually there was a segregation of assets for the benefit of waiving depositors under a trust agreement, with a right in the bank to substitute assets during a period of time running generally from two to five years. Figures are not available at present to show the losses sustained by depositors through this type of reorganization of distressed banks. . . .

Many banks in a number of places had closed temporarily in 1932 under special 'banking holidays' declared by civil authorities. The first of a series of State-wide banking holidays was declared in Nevada at the beginning of November, 1932. Though originally for a 12-day period, it was subsequently extended. Early in 1933 more local bank holidays were declared by city authorities and many existing ones were extended, in order to permit banks to obtain deposit deferment or waiver agreements and to afford banks an opportunity to raise funds and make adjustments necessary to enable them to continue to meet their obligations.

TABLE 15  
ALTERNATIVE MONEY STOCK ESTIMATES, MARCH 1933-JUNE 1935  
(amounts in millions of dollars)

| Date     | Ratio of Total<br>Deposits,<br>Unlicensed to<br>Licensed Banks<br>(1) | Commercial<br>Bank<br>Deposits<br>Adjusted<br>(2) | Unlicensed<br>Bank<br>Deposits<br>Adjusted<br>(3) | Commercial Bank<br>(Licensed and<br>Unlicensed)<br>Deposits<br>Adjusted<br>(4) | Currency<br>Held by<br>the Public<br>(5) | Currency Plus<br>Commercial Bank<br>(Licensed and<br>Unlicensed)<br>Deposits<br>Adjusted<br>(6) | Recorded<br>Money<br>Stock<br>(7) |
|----------|---|---|---|--|--|---|-----------------------------------|
| 1933     |   |   |   |  |  |   |                                   |
| Mar. 29  | 13.49   | 24,461  | 3,300   | 27,761   | 5,509                                    | 33,270  | 29,970                            |
| Apr. 12  | 12.84   |   |   |  |  |   |                                   |
| May 3    | 10.96   | 24,545  | 2,690   | 27,235   | 5,202                                    | 32,437  | 29,747                            |
| May 31   | 8.87  | 25,081  | 2,225   | 27,306   | 5,019                                    | 32,325  | 30,100                            |
| June 28  | 7.18  | 25,138  | 1,805   | 26,943   | 4,949                                    | 31,892  | 30,087                            |
| June 30  | 7.07  |   |   |  |  |   |                                   |
| Aug. 2   | 6.30  | 25,274  | 1,592   | 26,866   | 4,886                                    | 31,752  | 30,160                            |
| Aug. 30  | 5.71  | 25,342  | 1,447   | 26,789   | 4,850                                    | 31,639  | 30,192                            |
| Sept. 27 | 5.17  | 25,431  | 1,315   | 26,746   | 4,830                                    | 31,576  | 30,261                            |
| Oct. 25  | 4.69  |   |   |  |  |   |                                   |
| Nov. 1   | 4.50  | 25,584  | 1,151   | 26,735   | 4,803                                    | 31,538  | 30,387                            |
| Nov. 29  | 3.82  | 25,719  | 982   | 26,701   | 4,844                                    | 31,545  | 30,563                            |
| Dec. 30  | 3.18  |   |   |  |  |   |                                   |
| 1934     |   |   |   |  |  |   |                                   |
| Jan. 3   | 3.10  | 25,968  | 805   | 26,773   | 4,839                                    | 31,612  | 30,807                            |
| Jan. 31  | 2.58  | 26,463  | 683   | 27,146   | 4,491                                    | 31,637  | 30,954                            |
| Feb. 28  | 2.15  | 27,101  | 583   | 27,684   | 4,513                                    | 32,197  | 31,614                            |
| Mar. 5   | 2.08  |   |   |  |  |   |                                   |
| Mar. 28  | 1.78  | 27,690  | 493   | 28,183   | 4,550                                    | 32,733  | 32,240                            |
| May 2    | 1.41  | 28,015  | 395   | 28,410   | 4,556                                    | 32,966  | 32,571                            |
| May 30   | 1.17  | 28,232  | 330   | 28,562   | 4,566                                    | 33,128  | 32,798                            |
| June 27  | 0.97  | 28,489  | 276   | 28,765   | 4,584                                    | 33,349  | 33,073                            |
| June 30  | 0.95  |   |   |  |  |   |                                   |
| July 25  | 0.80  |   |   |  |  |   |                                   |
| Aug. 1   | 0.77  | 28,957  | 223   | 29,180   | 4,609                                    | 33,789  | 33,566                            |

|          |      |        |     |        |       |        |        |
|----------|------|--------|-----|--------|-------|--------|--------|
| Aug. 22  | 0.70 | 29,606 | 198 | 29,804 | 4,628 | 34,432 | 34,234 |
| Aug. 29  | 0.67 |        |     |        |       |        |        |
| Sept. 26 | 0.57 | 29,470 | 156 | 29,626 | 4,627 | 34,253 | 34,097 |
| Oct. 3   | 0.53 | 30,155 | 115 | 30,270 | 4,590 | 34,860 | 34,745 |
| Oct. 31  | 0.38 | 30,547 | 104 | 30,651 | 4,631 | 35,282 | 35,178 |
| Nov. 28  | 0.34 |        |     |        |       |        |        |
| Dec. 26  | 0.26 |        |     |        |       |        |        |
| 1935     |      |        |     |        |       |        |        |
| Jan. 2   | 0.25 | 30,502 | 76  | 30,578 | 4,559 | 35,137 | 35,061 |
| Jan. 30  | 0.20 | 31,414 | 63  | 31,477 | 4,621 | 36,098 | 36,035 |
| Feb. 27  | 0.18 | 32,065 | 58  | 32,123 | 4,700 | 36,823 | 36,765 |
| Mar. 27  | 0.14 |        |     |        |       |        |        |
| Apr. 3   | 0.13 | 32,103 | 42  | 32,145 | 4,714 | 36,859 | 36,817 |
| Apr. 24  | 0.12 |        |     |        |       |        |        |
| May 1    | 0.12 | 32,669 | 39  | 32,708 | 4,708 | 37,416 | 37,377 |
| May 29   | 0.11 | 32,866 | 36  | 32,902 | 4,715 | 37,617 | 37,581 |
| June 30  |      | 33,341 | 0   | 33,341 | 4,708 | 38,049 | 38,049 |

## SOURCE, BY COLUMN

- (1) At italicized dates, data for licensed and unlicensed banks are available. Ratios for dates not in italics, corresponding to the Wed. nearest end of month in Table A-1, were interpolated on a straight line between logarithms of the ratios at italicized dates.
- Data for licensed and unlicensed banks are sums for member and nonmember banks. For member banks, see *Federal Reserve Bulletin*, Apr. 1933, p. 216; and Sept. 1934-June 1935 issues. For nonmember banks: Mar. 29, 1933, estimated as in Table 13, lines 6 and 7, col. 3; Apr. 12, 1933, June 30, 1933 (licensed), and subsequent italicized dates; *FRB*, Sept. 1934-June 1935 issues; June 30, 1933 (unlicensed), *All-Bank Statistics*, p. 72.
- Original figures for Mar. 29, and Apr. 12, 1933, are deposits held by the designated licensed and unlicensed banks on Dec. 31, 1932. No adjustment for shrinkage in deposits after Dec. 1932 was made, on the assumption

that col. 1 would not be affected. Figures for unlicensed banks and for licensed member banks on June 30, 1933, are as of that date; original figures for licensed nonmember banks are deposits held by those banks on Dec. 31, 1932; these figures were reduced 10 per cent for comparability with data for other banks on this date. Figures for member banks on Oct. 25, 1933, are as of that date; for nonmember banks the deposits held by those banks on Dec. 31, 1932; figures for licensed nonmembers were reduced 10 per cent, for unlicensed nonmembers 12.2 per cent for comparability with member bank data. Thereafter figures were assumed to be on a current basis.

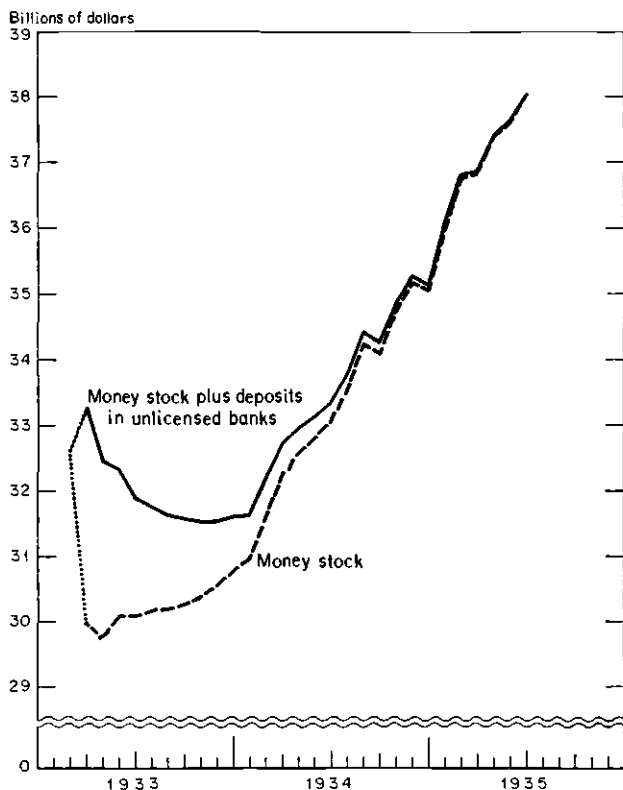
(2, 5, 7) Table A-1.

(3) Col. 1 times col. 2.

(4) Col. 2 plus col. 3.

(6) Col. 4 plus col. 5.

CHART 34  
Alternative Money Stock Estimates, February 1933–June 1935



SOURCE: Table 15, cols. 6 and 7, and Table A-1, col. 8.

banks as less akin to cash than they had been before the banking holiday, even though restricted then. The attempt to achieve continuity with February by including all deposits in unlicensed banks in March figures accordingly overstates the money stock even on the concept implicit in the estimates for the end of February.<sup>8</sup> And that concept itself overstates

<sup>8</sup> The figures for currency held by the public in the alternative estimate also involve an overstatement. Table A-1 treats vault cash in unlicensed banks, beginning Mar. 1933, as currency held by the public because unlicensed banks are not counted as banks. We estimate the amount of vault cash in unlicensed banks to have been about \$50 million at the end of that month, and to have declined thereafter along with the reduction in deposits in unlicensed banks. Strictly, the alternative estimate of money stock including deposits in unlicensed banks should exclude from currency held by the public the vault cash in those banks.

the money stock by treating \$1 of restricted deposits as strictly on a par with \$1 of unrestricted deposits.

Another defect in our figures traceable to the bank holiday is their exclusion of perhaps as much as \$1 billion of currency substitutes introduced in communities bereft of banking facilities before, during, and immediately after the panic.<sup>9</sup> To the extent currency substitutes were used because restricted deposits were unavailable to depositors, the error of their exclusion from Table A-1 before the panic is offset by the error of the inclusion of restricted deposits. To the extent they were so used after the panic, currency substitutes should be added to Table A-1, since unlicensed bank deposits are not included in that table, but not to the alternative estimates in Table 15 or Chart 34, since these include unlicensed bank deposits. To the extent currency substitutes came into use to replace deposits in failed banks and the reduction of deposits in open banks, i.e., to enable the public to raise the ratio of currency to deposits, both Table A-1 and Table 15 should include them. There seems no way now, however, of estimating the changing amounts of these currency substitutes in 1932 and 1933.

Finally, we note two minor defects in the series in Table A-1: the figures exclude unrestricted deposits in unlicensed banks; the figures for commercial bank deposits are probably too low for February 1933 and too high for March 1933.<sup>10</sup>

None of the several experiments we have made to take these various defects into account has been sufficiently illuminating to add much to the simple statement that an "ideal" estimate would be somewhere between the two curves in Chart 34. Almost any such intermediate curve which is plausible, in the sense that it is consistent with our qualitative knowledge of other defects and also divides the space between the two limits in proportions that do not vary erratically from month to month, implies that economic recovery in the half-year after the panic owed nothing to monetary expansion; the apparent rise in the stock of money is simply a statistical fiction. The emergency revival of the banking system contributed to recovery by restoring confidence in the monetary and economic system and thereby inducing the public to reduce money balances

<sup>9</sup> See Chap. 7, footnote 32.

<sup>10</sup> For the information available on the amount of unrestricted deposits in unlicensed banks, see footnote 6 above.

As to the second defect, the reason is that no published figures are available between the middle of Feb. and the middle of Apr. for the interpolators used to estimate nonmember bank deposits between call dates. End-of-Feb. and end-of-Mar. interpolators were obtained along a straight line between the Feb. and Apr. figures for the interpolators. This problem does not arise with the monthly member bank figures, since the gaps in this series were filled on the basis of weekly reporting member bank figures which are available throughout for Wednesdays nearest the end of the month. See our forthcoming companion volume, "Trends and Cycles in the Stock of Money in the United States, 1867-1960," a National Bureau study.

relative to income (to raise velocity) rather than by producing a growth in the stock of money.

#### REFORM MEASURES AFFECTING THE BANKING STRUCTURE

##### *Federal Insurance of Bank Deposits*

Federal insurance of bank deposits was the most important structural change in the banking system to result from the 1933 panic, and, indeed in our view, the structural change most conducive to monetary stability since state bank note issues were taxed out of existence immediately after the Civil War. Individual states had experimented with systems of deposit insurance and numerous proposals for federal deposit insurance had been introduced into the U.S. Congress over many years. A bill providing for deposit insurance was passed by the House of Representatives in 1932 under the sponsorship of Representative Henry B. Steagall, chairman of the House Banking and Currency Committee, but killed in the Senate because of intense opposition by Senator Carter Glass, an influential member of the Senate Banking and Currency Committee. Glass favored merely a liquidating corporation to advance to depositors in failed banks the estimated amount of their ultimate recovery. In 1933, Steagall and Glass agreed to combine the two proposals and incorporate them in the Banking Act of 1933. The resulting section of the act provided for a permanent deposit insurance plan with very extensive coverage to become effective July 1, 1934.<sup>11</sup>

It is a nice example of how institutions are developed and shaped that the actual plan which first became effective on January 1, 1934, resulted from an amendment to the Banking Act of 1933 introduced by a Senator from the minority party and at least initially opposed by President Roosevelt.<sup>12</sup> It was opposed also by leading bankers and by some ranking

<sup>11</sup> FDIC, *Annual Report*, 1950, pp. 63-67. We have also been greatly helped by a letter from Clark Warburton, which summarized the detailed origins of federal deposit insurance. See also Chap. 7, footnote 27, above.

<sup>12</sup> Jones (*Fifty Billion Dollars*, pp. 45-46) asserts that President Roosevelt opposed deposit insurance and requested Congress to reject the Vandenberg amendment. See also Arthur M. Schlesinger, Jr., *The Coming of the New Deal*, Boston, Houghton Mifflin, 1959, p. 443; B. N. Timmons, *Jesse H. Jones*, New York, Holt, 1956, pp. 184, 195.

Carter H. Golembe comments:

... it was the only important piece of legislation during the New Deal's famous 'one hundred days' which was neither requested nor supported by the new administration.

Deposit insurance was purely a creature of Congress. For almost fifty years members had been attempting to secure legislation to this end, without success; while in individual states the record of experimentation with bank-obligation insurance systems dated back more than a century. The adoption of nation-wide deposit insurance in 1933 was made possible by the times, by the perseverance



individuals in the Federal Reserve System.<sup>13</sup> The amendment, introduced by Senator Arthur Vandenberg, provided for a temporary system of deposit insurance, pending the adoption on July 1, 1934, of the permanent system. The period of operation of the temporary plan was extended to July 1, 1935, by an amendment in 1934 and to August 31, 1935, by a Congressional resolution signed by the President. On August 23, 1935, a permanent system in roughly its present form became effective under the provisions of Title I of the Banking Act of 1935.

The Banking Act of 1933 neither abolished nor reduced the powers of any existing government body concerned with banking. It simply superimposed an additional agency, the Federal Deposit Insurance Corporation, whose functions both supplemented and duplicated those of existing agencies. Under the terms of the act, all banks that were members of the Federal Reserve System were required to have their deposits insured by the FDIC; nonmember banks could be admitted to insurance upon application to and approval by the Corporation. Insurance was initially (January 1, 1934) limited to a maximum of \$2,500 of deposits for each depositor; the limit was raised to \$5,000 on July 1, 1934, and to \$10,000 on September 21, 1950.<sup>14</sup> Insured banks were required in return to pay

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of the Chairman of the House Committee on Banking and Currency [Henry B. Steagall], and by the fact that the legislation attracted support from two groups which formerly had divergent aims and interests—those who were determined to end destruction of circulating medium due to bank failures and those who sought to preserve the existing banking structure ("The Deposit Insurance Legislation of 1933," *Political Science Quarterly*, June 1960, pp. 181-182).

<sup>13</sup> Golembe, "Deposit Insurance Legislation," p. 198, footnote 23. At meetings of the board of directors of the New York Federal Reserve Bank in 1933, strong opposition to deposit insurance was expressed by Harrison, Eugene Black, then governor of the Federal Reserve Board, and members of the New York board. The chief alternative proposed was RFC loans under liberalized lending authority, possibly combined with Federal Reserve loans to member banks under sect. 10(b), the Reserve System to be guaranteed against loss on such loans by the federal government. Also proposed was a relaxation of requirements for membership by banks in the Reserve System. The alternative makes clear that opposition was not so much to the assumption by government of ultimate responsibility for deposits as to the by-passing of the Reserve System and the establishment of a potential competitor (George L. Harrison Papers on the Federal Reserve System, Columbia University Library, Harrison, Notes, Vol. III, Apr. 10, May 25, June 1, 1933, pp. 153-156, 197-200, 205-206; for a full description of the Papers, see Chap. 5, footnote 41 and the accompanying text).

<sup>14</sup> Despite the impression conveyed by these limits, protection of the circulating medium rather than protection of the small depositor against loss was the overriding concern of the legislators in establishing deposit insurance, as in earlier attempts to introduce it. In support of this contention, Golembe cites the fact that "under the original insurance plan, slated to go into operation on June 30, 1934, insurance coverage was to apply to all types of deposit accounts, with maximum limits for each depositor which were fairly generous . . . Only in the temporary plan, designed to operate for six months, was coverage restricted to \$2,500 for each depositor. However, the original plan never did go into effect. After several extensions of the temporary plan, during the course of which coverage

premiums calculated as a percentage of their deposits<sup>15</sup> and, if not members of the Federal Reserve System, to submit to examination by the FDIC. The Corporation had the right to examine national and state member banks only if it obtained the written consent either of the Comptroller of the Currency or of the Board of Governors of the Federal Reserve System. In 1950, however, the FDIC was empowered to make special examinations of member banks at its own discretion. Member banks are therefore in principle subject to examination by three agencies: the Federal Reserve System; the Comptroller of the Currency, if national banks, or their state banking commissions, if state banks; and the FDIC. Nonmember insured banks may be examined by two agencies: their state banking commissions and the FDIC. In practice, of course, agreements have been worked out among the different agencies to minimize duplicate examination.<sup>16</sup>

Insurance first became effective on January 1, 1934. Within six months, nearly 14,000 of the nation's 15,348 commercial banks, accounting for

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was raised to \$5,000 for each depositor . . . it was found that this provided full coverage for more than 98 per cent of the depositors." Moreover, FDIC procedures in helping a distressed insured bank, which have the effect of protecting all deposits, and the immediate payment of insured deposits rather than payment over time in the form of receivers' dividends, suggest that protection of the circulating medium from the consequences of bank failures was the primary function of deposit insurance (Golembe, "The Deposit Insurance Legislation," pp. 193-194).

<sup>15</sup> The premium for members of the Temporary Deposit Insurance Fund was  $\frac{1}{2}$  of 1 per cent of deposits eligible for insurance. Only one-half the premium was ever paid, and part of that half which was unused at the close of the temporary fund was returned to the banks. Under the permanent system, the premium was changed to  $\frac{1}{2}$  of 1 per cent of total deposits, payable semiannually. The Federal Deposit Insurance Act of Sept. 21, 1950, again changed the base for deposit insurance assessment. Each semiannual assessment computation is now based on the average of reports on two dates instead of the daily average for the six-months' period; also, in determining the assessment base, other items besides cash items are deductible from deposits. In addition, the act provided that three-fifths of the premium payments by insured banks in excess of the Corporation's operating expenses, losses, and additions to the insurance fund to cover anticipated losses during the calendar year are to be credited pro rata to the banks to be applied in the following year as part payment for premiums which become due in that year. An amendment, dated July 14, 1960, raised the fraction to two-thirds.

<sup>16</sup> In addition numerous clearing house associations also exercise a degree of supervision over their member banks. The variety of supervisory agreements has been a perennial source of concern to the supervising bodies themselves, and one of their important activities has been coordination of examination and standards (see Board of Governors of the Federal Reserve System, *Annual Report*, 1938, pp. 11-18; and FDIC, *Annual Report*, 1938, pp. 61-79). See also Clark Warburton, "Co-ordination of Monetary, Bank Supervisory, and Loan Agencies of the Federal Government," *Journal of Finance*, June 1950, pp. 161-166. Warburton argues, correctly in our view, that the Board of Governors should be relieved of such duties as the regular examination of member banks, which should be concentrated in the agencies concerned with the affairs of individual banks, such as the Comptroller of the Currency, the state banking commissions, and the FDIC.

some 97 per cent of all commercial bank deposits, were covered by insurance. The number of uninsured commercial banks has since declined to under 400, and their deposits now amount to less than 1 per cent of total deposits in all commercial banks. Mutual savings banks, which were also eligible for insurance, found it much less attractive. In mid-1934 only 66 out of 565 banks, accounting for only a bit over one-tenth of all mutual savings deposits, were insured. The coverage of mutual savings banks rose slowly until World War II, then accelerated, so that by the end of 1945, 192 out of 542 banks accounting for two-thirds of all deposits were insured, and by the end of 1960, 325 out of 515 accounting for 87 per cent of all deposits.<sup>17</sup>

Federal deposit insurance has been accompanied by a dramatic change in commercial bank failures and in losses borne by depositors in banks that fail (Table 16). From 1921 through 1933, every year requires at least three digits to record the number of banks that suspended; from 1934 on, two digits suffice, and from 1943 through 1960, one digit, for both insured and noninsured banks. For the thirteen-year period 1921 to 1933, losses borne by depositors averaged \$146 million a year or 45 cents per \$100 of adjusted deposits in all commercial banks. For the twenty-seven years since, losses have averaged \$706,000 a year, or less than two-tenths of 1 cent per \$100 of adjusted deposits in all commercial banks; moreover, over half the total losses during the twenty-seven years occurred in the very first year of the period and were mostly a heritage of the pre-FDIC period.

Technically, only deposits not exceeding a specified sum (since 1950, \$10,000) are insured. In 1960, insured deposits amounted to only 57 per cent of all deposits of insured banks. In practice, however, the near-absence of bank failures recorded in Table 16 means that all deposits are effectively insured. The reduction in failures is not of course attributable to any correspondingly drastic improvement in the quality of bank officials or in the effectiveness of the supervisory authorities; nor is it attributable to the addition of still another examination agency, though the addition

<sup>17</sup> The wartime increase is attributable to the admission to membership of 125 New York State mutual savings banks on July 1, 1943. They and others had withdrawn from the temporary deposit insurance plan in June 1934. They wanted a premium rate that recognized the lower factor of risk in insuring savings banks and, in addition, believed that the savings banks' own insurance agency could safeguard depositors better than any national agency. In New York the mutual savings banks created their own insurance fund on July 1, 1934. Mutual savings banks in two New England states also organized statewide insurance plans. The New York plan and the arguments for it were abandoned in favor of membership in the FDIC in 1943. It was then held that in a real emergency statewide protection would not be strong enough and federal assistance would be required (A. A. Berle, *The Bank that Banks Built: The Story of Savings Banks Trust Company, 1933-1958*, New York, Harper, 1959, pp. 65, 71-73). See also FDIC, *Annual Report*, 1960, pp. 91, 93.

TABLE 16  
COMMERCIAL BANK SUSPENSIONS, 1921-60

## PART I. BEFORE FDIC

| Year | Number<br>of Suspensions<br>(1) | Deposits<br>(thousands of dollars)<br>(2) | Losses Borne<br>by Depositors<br>(3) | Losses to Depositors<br>per \$100 of Deposits<br>Adjusted in All<br>Commercial Banks<br>(dollars)<br>(4) |
|------|---------------------------------|---|--------------------------------------|--|
| 1921 | 506                             | 172,806                                   | 59,967                               | 0.21   |
| 1922 | 366                             | 91,182                                    | 38,223                               | 0.13   |
| 1923 | 646                             | 149,601                                   | 62,142                               | 0.19   |
| 1924 | 775                             | 210,150                                   | 79,381                               | 0.23   |
| 1925 | 617                             | 166,937                                   | 60,799                               | 0.16   |
| 1926 | 975                             | 260,153                                   | 83,066                               | 0.21   |
| 1927 | 669                             | 199,332                                   | 60,681                               | 0.15   |
| 1928 | 498                             | 142,386                                   | 43,813                               | 0.10   |
| 1929 | 659                             | 230,643                                   | 76,659                               | 0.18   |
| 1930 | 1,350                           | 837,096                                   | 237,359                              | 0.57   |
| 1931 | 2,293                           | 1,690,232                                 | 390,476                              | 1.01   |
| 1932 | 1,453                           | 706,187                                   | 168,302                              | 0.57   |
| 1933 | 4,000                           | 3,596,708                                 | 540,396                              | 2.15   |

## PART II. AFTER FDIC

## ALL COMMERCIAL BANKS

|      |    |         |       |         |
|------|----|---------|-------|---------|
| 1934 | 61 | 37,332  | 6,502 | 0.02282 |
| 1935 | 31 | 13,902  | 600   | 0.00180 |
| 1936 | 72 | 28,100  | 185   | 0.00049 |
| 1937 | 82 | 33,877  | 155   | 0.00039 |
| 1938 | 80 | 58,243  | 293   | 0.00076 |
| 1939 | 71 | 158,627 | 1,374 | 0.00329 |
| 1940 | 48 | 142,787 | 57    | 0.00012 |
| 1941 | 17 | 29,797  | 33    | 0.00006 |
| 1942 | 23 | 19,517  | 20    | 0.00003 |
| 1943 | 5  | 12,525  | 13    | 0.00002 |
| 1944 | 2  | 1,915   | 4     | 0.0     |
| 1945 | 1  | 5,695   | 0     | 0.0     |
| 1946 | 2  | 494     | 0     | 0.0     |
| 1947 | 6  | 7,207   | 0     | 0.0     |
| 1948 | 3  | 10,674  | 0     | 0.0     |
| 1949 | 8  | 8,027   | 69    | 0.00006 |
| 1950 | 5  | 5,555   | 0     | 0.0     |
| 1951 | 5  | 6,097   | 394   | 0.00031 |
| 1952 | 4  | 3,313   | 0     | 0.0     |
| 1953 | 3  | 18,652  | 70    | 0.00005 |
| 1954 | 4  | 2,948   | 407   | 0.00028 |
| 1955 | 5  | 11,953  | 8     | 0.00001 |
| 1956 | 3  | 11,689  | 178   | 0.00011 |
| 1957 | 2  | 2,418   | 0     | 0.0     |
| 1958 | 9  | 10,413  | 277   | 0.00016 |
| 1959 | 3  | 2,595   | 46    | 0.00003 |
| 1960 | 2  | 7,990   | 546   | 0.00031 |

(continued)

TABLE 16 (concluded)  
PART II. AFTER FDIC

| Year | Insured Banks         |                      |                                      | Noninsured Banks      |                       |                                       |
|------|-----------------------|----------------------|--------------------------------------|-----------------------|-----------------------|---------------------------------------|
|      | Number of Suspensions | Deposits (thousands) | Losses Borne by Depositors (dollars) | Number of Suspensions | Deposits* (thousands) | Losses Borne by Depositors* (dollars) |
|      | (1)                   | (2)                  | (3)                                  | (1)                   | (2)                   | (3)                                   |
| 1934 | 9                     | 1,968                | 19                                   | 52                    | 35,364                | 6,483                                 |
| 1935 | 25                    | 13,319               | 415                                  | 6                     | 583                   | 185                                   |
| 1936 | 69                    | 27,508               | 171                                  | 3                     | 592                   | 14                                    |
| 1937 | 75                    | 33,349               | 110                                  | 7                     | 528                   | 45                                    |
| 1938 | 73                    | 57,205               | 33                                   | 7                     | 1,038                 | 260                                   |
| 1939 | 59                    | 156,188              | 936                                  | 12                    | 2,439                 | 438                                   |
| 1940 | 43                    | 142,429              | 31                                   | 5                     | 358                   | 26                                    |
| 1941 | 15                    | 29,718               | 33                                   | 2                     | 79                    | 0                                     |
| 1942 | 20                    | 19,186               | 5                                    | 3                     | 331                   | 15                                    |
| 1943 | 5                     | 12,525               | 13                                   | 0                     | 0                     | 0                                     |
| 1944 | 2                     | 1,915                | 4                                    | 0                     | 0                     | 0                                     |
| 1945 | 1                     | 5,695                | 0                                    | 0                     | 0                     | 0                                     |
| 1946 | 1                     | 347                  | 0                                    | 1                     | 147                   | 0                                     |
| 1947 | 5                     | 7,040                | 0                                    | 1                     | 167                   | n.a.                                  |
| 1948 | 3                     | 10,674               | 0                                    | 0                     | 0                     | 0                                     |
| 1949 | 4                     | 5,475                | 0                                    | 4                     | 2,552                 | 69                                    |
| 1950 | 4                     | 5,513                | 0                                    | 1                     | 42                    | 0                                     |
| 1951 | 2                     | 3,408                | 0                                    | 3                     | 2,689                 | 394                                   |
| 1952 | 3                     | 3,170                | 0                                    | 1                     | 143                   | 0                                     |
| 1953 | 2                     | 18,262               | 0                                    | 1                     | 390                   | 70                                    |
| 1954 | 2                     | 998                  | 0                                    | 2                     | 1,950                 | 407                                   |
| 1955 | 5                     | 11,953               | 8                                    | 0                     | 0                     | 0                                     |
| 1956 | 2                     | 11,329               | 62                                   | 1                     | 360                   | 116                                   |
| 1957 | 1                     | 1,163                | 0                                    | 1                     | 1,255                 | n.a.                                  |
| 1958 | 4                     | 8,240                | 55                                   | 5                     | 2,173                 | 222                                   |
| 1959 | 3                     | 2,595                | 46                                   | 0                     | 0                     | 0                                     |
| 1960 | 1                     | 6,955                | 289                                  | 1                     | 1,035                 | 257                                   |

## SOURCE, BY COLUMN

## PART I

- (1-3) Unpublished estimates, Division of Research and Statistics, FDIC, used with permission of the Corporation. Number and deposits slightly revised, by FDIC, from *Federal Reserve Bulletin*, Sept. 1937, pp. 868, 873. Losses estimated by FDIC by applying to the deposits the appropriate loss percentages derived from samples (see FDIC, *Annual Report*, 1934, pp. 84, 86; 1940, pp. 70-73).
- (4) Col. 3 divided by June commercial bank deposits in Table A-1.

## PART II

*All Commercial Banks*

- (1-3) Sum of corresponding cols. for insured and noninsured banks.
- (4) Col. 3 divided by June commercial bank deposits in Table A-1.

*Insured Banks*

- (1-3) FDIC, *Annual Report*, 1958, pp. 5, 27-28; 1959, p. 5; 1960, p. 5. The banks counted are those requiring disbursements by the FDIC. Two mutual savings (continued)

## NOTES TO TABLE 16 (concluded)

banks included in the published figures were deducted by us (*ibid.*, 1938, pp. 250, 256, and 1939, p. 216).

*Noninsured Banks*

- (1-3) Unpublished estimates, Division of Research and Statistics, FDIC; for cols. 1 and 2, the estimates are revisions of figures given in FDIC, *Annual Report*, 1960, p. 181, and sources listed there.

<sup>a</sup> Deposits of noninsured suspended banks are missing in the following years for the following numbers of banks: 1938, 1; 1939, 2; 1941, 1; and 1954, 1.

<sup>b</sup> Losses borne by depositors for the following numbers of noninsured suspended banks are missing in the years marked "n.a." and in the additional years listed below.

| Year | Banks | Deposits<br>(\$000's) |
|------|-------|-----------------------|
| 1934 | 6     | 341                   |
| 1938 | 1     | n.a.                  |
| 1939 | 2     | n.a.                  |
| 1940 | 2     | 12                    |
| 1941 | 1     | n.a.                  |
| 1942 | 1     | 101                   |
| 1951 | 1     | 1,600                 |
| 1954 | 1     | n.a.                  |
| 1958 | 3     | 454                   |

n.a. = not available.

of the FDIC apparently meant closer supervision and examination of insured state banks. Rather, it reflects, in the main, two other factors. First, "bad" banks, though perhaps no less frequent than before, are seldom permitted to fail if they are insured; instead, they are reorganized under new management or merged with a good bank, with the FDIC assuming responsibility for losses in connection with depreciated assets. Second, the knowledge on the part of small depositors that they will be able to realize on their deposits even if the bank should experience financial difficulties prevents the failure of one bank from producing "runs" on other banks that in turn may force "sound" banks to suspend. Deposit insurance is thus a form of insurance that tends to reduce the contingency insured against.

Adopted as a result of the widespread losses imposed by bank failures in the early 1930's, federal deposit insurance, to 1960 at least, has succeeded in achieving what had been a major objective of banking reform for at least a century, namely, the prevention of banking panics. Such panics arose out of or were greatly intensified by a loss of confidence in the ability of banks to convert deposits into currency and a consequent desire on the part of the public to increase the fraction of its money held in the form of currency. The resulting runs on banks could be met in a fractional reserve system only if confidence were restored at an early

stage. Otherwise, they inevitably brought restriction of convertibility of deposits into currency.

As we have seen, the Aldrich-Vreeland Act and then the Federal Reserve System were both attempts to solve this problem by enabling banks to convert their assets into additional high-powered money for use in meeting the demands of their depositors for currency. The aim was to make it possible for runs or their equivalent, once begun, to be met without forcing banks either to suspend business individually or, by concerted action, to restrict the conversion of deposits into currency. The Aldrich-Vreeland Act succeeded on the one occasion it was used, the outbreak of World War I. The Federal Reserve System failed in the early 1930's though, as we have seen, proper use of its powers could have averted the panic. As these powers were in fact used, however, the existence of the System served only to postpone repeatedly the final crisis, which, when it finally came, was more severe and far-reaching than any earlier panic.

Federal deposit insurance attempts to solve the problem by removing the initial reason for runs—loss of confidence in the ability to convert deposits into currency. While there have been substantial changes since 1934 in the ratio of currency to deposits (see Chapters 9 to 11 below), there have been no radical changes in short periods like those before 1934, always the invariable hallmark of a liquidity crisis and a banking panic. And it is hard to believe that any are likely to occur in the foreseeable future.

True, if for any reason there should be a substantial and long-continued decline in the stock of money, such as occurred from 1929 to 1933, the effects on the value of bank assets would very likely cause so many banks to become insolvent as to exhaust existing reserve funds of the FDIC. However, the greater part of the 1929-33 decline in the stock of money was not independent of the initial bank failures. It was rather a consequence of them, because of their effect on the deposit-currency ratio and the failure of the Reserve System to offset the fall in the ratio by a sufficient increase in high-powered money. Had federal deposit insurance been in existence in 1930, it would very likely have prevented the initial fall in the deposit-currency ratio in late 1930 and hence the tragic sequence of events that fall set in train, including the drastic decline in the money stock. It may be that, today, a radical change in the deposit-currency ratio would evoke a different and more suitable response from the monetary authorities, so that, even in the absence of federal deposit insurance, a banking panic, once begun, would not be permitted to cumulate. The existence of federal deposit insurance greatly reduces, if it does not eliminate, the need to rely on such a response.

As we have seen in earlier chapters, banking panics have occurred only during severe contractions and have greatly intensified such contractions,

if indeed they have not been the primary factor converting what would otherwise have been mild contractions into severe ones. That is why we regard federal deposit insurance as so important a change in our banking structure and as contributing so greatly to monetary stability—in practice far more than the establishment of the Federal Reserve System.<sup>18</sup>

### *Other Changes*

The other changes in the commercial and savings banking structure during the New Deal period are much less far reaching than the establishment of deposit insurance and can be noted summarily.

Conditions of membership in the Federal Reserve System were modified to make permissible the admission of Morris Plan and mutual savings banks. Rules governing the establishment of branch banks were somewhat liberalized, and double liability on stock of national banks was eliminated. Investment affiliates of commercial banks were prohibited, and interlocking directorates between commercial banks and investment companies restricted.

National bank notes were converted into a Treasury obligation and arrangements made to retire them from circulation. The provision for issuing them terminated on August 1, 1935, with the redemption of the two remaining issues of U.S. bonds bearing the circulation privilege.<sup>19</sup> The volume in circulation had declined to \$650 million by August 1935. It has been declining steadily ever since; even so, at the end of 1960, the volume listed as still in circulation was \$55 million.<sup>20</sup>

<sup>18</sup> See Milton Friedman, "Why the American Economy is Depression-Proof," *Nationalekonomiska Föreningens*, sammantrade den 28 April 1954, pp. 59–60. To avoid misunderstanding, we should note explicitly that deposit insurance is but one of several ways in which a panic-proof banking system could have been achieved. Our comments are not intended to suggest that some other method might not have been preferable to deposit insurance. For an alternative method, see Friedman, *A Program for Monetary Stability*, New York, Fordham University Press, 1960, pp. 65–76.

<sup>19</sup> Each national bank transferred to the Treasury the liability for its circulating notes by depositing enough funds with it over and above the 5 per cent redemption fund already held by the Treasury to cover its notes outstanding. Those deposits reduced member bank reserves, but the funds disbursed by the Treasury to redeem the called bonds restored reserves. Since 1935, as national bank notes have returned from circulation, Federal Reserve Banks have shipped them to the Treasury for retirement. Payment for these notes is made to the Federal Reserve Banks by a charge against the Treasury's account. The Treasury replenishes its account by depositing with the Reserve Banks gold certificate credits which it set aside for this purpose, drawn from part of the profit accruing to the government upon the devaluation of the dollar (see footnote 53, below).

<sup>20</sup> This sum includes the amount that has been lost or destroyed as well as notes that are in numismatic collections and notes that are still in use as currency. To judge from the rate at which the sum outstanding has been declining, it seems likely that perhaps half the sum outstanding will sooner or later be offered for retirement. If we ignore amounts held in numismatic collections, this implies that



Banks were prohibited by law or regulation from paying interest on demand deposits and from paying rates of interest on time deposits higher than those specified by the Board of Governors of the Federal Reserve System for member banks and by the FDIC for insured non-member banks. Member banks were also prohibited from acting as agents of nonbank lenders in placing funds in the form of security loans in the stock market.<sup>21</sup>

Throughout American banking history, the view has recurrently been expressed that payment of interest on deposits led to "excessive" competition among banks, and "forced" them to reduce reserves to an undesirably low level and to engage in unduly risky investment and lending policies because of the necessity of earning income to pay the interest. The suggestion had frequently been made that the payment of interest be prohibited.<sup>22</sup> The prohibition was finally adopted for demand deposits in

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something like \$30 million of national bank notes has been lost or destroyed. Though large in absolute amount, the annual rate of loss implied is rather small. For the 97 years from 1864 through 1960, the average amount of national bank notes in circulation was \$369 million. The conjectured sum lost or destroyed is roughly 10 per cent of this average or roughly one-tenth of 1 per cent per year.

These estimates imply that paper currency is lost or destroyed at the rate of \$1 per year for each \$1,000.

<sup>21</sup> In addition, the Banking Act of 1933 made member banks subject to severe reprisal for undue use of bank credit "for the speculative carrying of or trading in securities, real estate, or commodities, or for any other purposes inconsistent with the maintenance of sound credit conditions." The Reserve Banks were authorized to suspend uncooperative banks "from the use of the credit facilities of the Federal Reserve System." The Federal Reserve Board was authorized to fix for each district "the percentage of individual bank capital and surplus which may be represented by loans secured by stock or bond collateral." If, despite an official warning to curtail them, such loans by member banks were increased, Reserve Bank 90-day advances to the offending banks on their own notes became due immediately, and the banks might be suspended from rediscount privileges.

<sup>22</sup> L. W. Mints, *A History of Banking Theory*, University of Chicago Press, 1945, pp. 141, 185, 209, 234-235. The suggestion predated the establishment of the Federal Reserve System—when there was no general distinction between demand and time deposits—and the arguments advanced related particularly to payment of interest on bankers' balances which were, for the most part at least, withdrawable on demand. In 1933, during the discussions leading to the Banking Act of 1933, the arguments were restated against demand deposits generally, whether or not they were bankers' balances. A quotation from O. M. W. Sprague (*History of Crises Under the National Banking System*, National Monetary Commission, 1910, p. 21) provides a good summary of the general stand against payment of interest on deposits:

The interest-paying banks were unable to maintain large reserves and at the same time realize a profit from the use of the funds thus attracted. Particularly was this the case when the accumulation of such funds was only temporary. The extra supply of money to be lent forced down rates, and, as rates fell, more and more had to be lent by the banks in order even to equal the interest which they had contracted to pay.

The argument is of course a standard one made by private groups seeking "cartel" powers: e.g., one of the arguments used in the 1930's in justifying control

member banks—in the Banking Act of 1933—and for demand deposits in other insured banks—in the Banking Act of 1935—partly because of the greater willingness after 1933 to legislate with respect to economic matters, partly because of the view—in our opinion, largely erroneous—that the banking difficulties of the early 1930's derived in considerable measure from the stock market boom and the participation of banks in the boom as direct lenders and as agents for others.<sup>23</sup>

One consequence of the prohibition of payment of interest on demand deposits has been a marked decline in the importance of interbank deposits—the demand deposits on which the payment of interest had been most widespread and at the highest rates. For member banks, balances at domestic banks were 76 per cent of deposits at Federal Reserve Banks at the end of 1933. They had fallen to 49 per cent by the end of 1937 and to 28 per cent by 1948. They have since risen to about 50 per cent. Beyond this, the prohibition had no great effect until recent years. The

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over entry into medicine was that physicians whose incomes were "unduly" low would be driven to engage in "unethical" practices. See, for example, A. D. Bevain, "The Overcrowding of the Medical Profession," *Journal of the Association of Medical Colleges*, Nov. 1936, pp. 377-384; and Milton Friedman and Simon Kuznets, *Income from Independent Professional Practice*, New York, NBER, 1945, p. 12 and references there cited in footnote 18.

The payment or nonpayment of interest on demand deposits does not alter in any way the incentive to use assets so as to yield the largest return, as judged by the banker, where return is defined to include nonmonetary as well as monetary elements. The prohibition of payment of interest is simply a government enforced price-fixing agreement. If the prohibition were effective, if it initially increased returns to existing banks, and if entry into the banking industry were free, the effects would be the usual open cartel effects: more banks than would otherwise exist, each operating at partial capacity and competing away the initial extra returns until the returns to skill and capital invested in banking were the same as in other fields. Since entry is not free, thanks to the need to get a franchise from a government authority, the results would likely be intermediate between those just described and the results to be expected if entry were prohibited entirely: a higher market value of the stock of banks, and roughly the competitive return to skill and per dollar of market value of capital.

Of course, all this assumes that the prohibition is not evaded as, of course, it can be at least partly by altering the amount of services given to depositors.

<sup>23</sup> After the prohibition of the payment of interest on demand deposits was in effect, another reason favoring the prohibition was discovered. Under the temporary deposit insurance plan, banks were assessed on insured deposits only; under the proposed permanent plan, on total deposits. City banks complained that under the permanent plan, their assessments would subsidize small country banks, since total deposits of city banks were considerably larger than their insured deposits while total deposits of country banks were not much more than their insured deposits. It was then noted that the reduction in expenses as a result of the prohibition of the payment of interest on demand deposits—expenses mainly borne by city banks—served as an offset to their assessments for deposit insurance (*Banking Act of 1935*, Hearings before a subcommittee of the Senate Committee on Banking and Currency on S. 1715, 74th Cong., 1st sess., 1935, part 1, pp. 29-30; part 2, pp. 433, 490-492).

rate of earnings on bank assets was so low during the 1930's and 1940's that banks were led to impose service charges on depositors, that is, the rate of interest on demand deposits was essentially negative, so that the fixed price for demand deposits was, as it were, above the market price for demand deposits. Competition has taken the form of changes in these service charges and of the provision of special services to depositors.

The limitation of rates of interest paid on time deposits,<sup>24</sup> though initially welcomed by commercial banks, has more recently been a hindrance to them in the competition for these deposits with alternative institutions, particularly savings banks and savings and loan associations, which pay higher rates (see Chapter 12). These rates, too, have for much of the time been ineffective. Discontinuous changes in them after they have become effective have produced sizable perturbations in the rate of change of commercial bank time deposits.

The reduction in interbank deposits plus the prohibition of banks' acting as agents of nonbank lenders in placing funds on the stock market contributed to the sharp decline in security loans by banks and the dwindling in importance of the call-loan market as a means of investing secondary reserves.

#### CHANGES IN THE STRUCTURE AND POWERS OF THE FEDERAL RESERVE SYSTEM

The Banking Act of 1935 changed the name of the Federal Reserve Board to the Board of Governors of the Federal Reserve System; reconstituted the Board by eliminating *ex officio* members; raised the salaries and lengthened the terms of the Board members; and reorganized the Federal Open Market Committee to consist of the seven members of the Board plus five representatives of the Federal Reserve Banks, instead of the twelve heads of the Banks, as under the Banking Act of 1933.<sup>25</sup> In addi-

<sup>24</sup> Regulation Q of the Board of Governors regulating interest rates on time deposits provides that where state banking authorities have fixed maximum interest rates payable on time deposits at figures lower than those set by the Board of Governors, the lower state figures become the maximum which can be paid by member banks located in those states.

<sup>25</sup> The change in name was the final seal on the transfer of effective power from the Banks to the Board. Heretofore, the chief executive officers of the Banks had been governors, the title generally assigned to the operative head of central banks. Only the executive head of the Board had also been a governor and addressed as such. The other members were simply members of the Board and were addressed without title. Henceforth, the members of the Board were governors in formal title as in fact and the executive heads of the Banks were presidents.

According to Marriner Eccles, it was at Senator Glass' insistence that the Secretary of the Treasury as an *ex officio* member was dropped: "When I was Secretary of Treasury," Glass said, ". . . 'I had considerable influence with the action of the Board, and I . . . have suspected . . . that frequently since the Secretary of the Treasury had too much influence upon the Board, and I do not

tion, it completed a step begun in the Banking Act of 1933 by eliminating the power of Banks to buy and sell government securities for their own account except with the explicit permission or at the direction of the Federal Open Market Committee.<sup>26</sup> These measures recognized and

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think he ought to be there' " (*Beckoning Frontiers*, New York, Knopf, 1951, p. 216 n.). Eccles says Senator Glass had no objection to the ex officio membership of the Comptroller of the Currency, but Secretary of the Treasury Morgenthau was piqued that a subordinate in his department and not he would serve on the Board so, to mollify him, the Comptroller was also dropped. As we shall see in Chapters 10 and 11 and as we saw in Chapter 5, the Treasury does not need actual representation on the Board of Governors to exercise considerable influence upon its actions.

The chief executive officer of each Federal Reserve Bank was designated for the first time in the Banking Act of 1935 as the president, formerly called governor, rather than the chairman of the board of directors who is also known as the Federal Reserve agent. The election of each Bank's president and first vice-president by the board of directors is subject to the approval of the Board of Governors. Since 1942, the five representatives of the Reserve Banks chosen annually to serve on the Federal Open Market Committee must be either Reserve Bank presidents or vice-presidents. The role of the Federal Reserve agents, who supervise the issue of Federal Reserve notes, has been greatly reduced since the Banking Act of 1935.

<sup>26</sup>The regulations governing the Federal Open Market Committee (FOMC)—organized under the Banking Act of 1933 and composed of all the Reserve Bank governors—gave the Banks permission to purchase government securities for their own account, subject to certain restrictions, in an emergency involving individual banking institutions (Federal Reserve Board, *Annual Report* for 1933, p. 302). Harrison tried but failed to persuade the FOMC organized under the Banking Act of 1935 to adopt a similar provision. On the first vote, his motion was passed 6 to 5, with all the Bank presidents and one member of the Board voting in favor (there were only six Board members at the time; a seven-man Board was not appointed until 1955). The motion finally lost by a tie vote, for the Board member changed his vote on the ground that the motion—which he still favored—ought not prevail without a larger affirmative margin (Harrison, *Miscellaneous*, Vol. IV, letter, dated Jan. 19, 1937, Harrison to Eccles; also Harrison, *Open Market*, Vol. IV, minutes of meeting, Jan. 26, 1937).

The by-laws of the FOMC under the Banking Act of 1935 also provided that members representing Banks did not serve as representatives of the particular Banks that elected them nor were they to be instructed by those Banks. Eccles said that "the open market committee should be composed entirely as a public body and . . . the banks should participate only through an advisory committee, the banks not knowing what was to be done but having a chance to be heard through a committee" (Harrison, *Notes*, Vol. VII, July 16, 1936; also Vol. VII, Mar. 5, 1936).

Presidents of Banks serving on the FOMC were prohibited by its by-laws from divulging to their directors actions taken at a FOMC meeting. Eccles said that "it would not be proper for directors of the Federal reserve banks affiliated with organizations owning Government securities to have any information which might benefit the organization with which they are associated" (*ibid.*, Vol. VII, July 16, 1936). He disclaimed the idea that any of the directors would take advantage of their situation, but "there is a good deal of talk in Congress about just that sort of thing." Harrison deplored the "throttling of officers and directors of reserve banks by the Board of Governors of the Federal Reserve System" (*ibid.*, Nov. 12, 1936).

consolidated the trend of power within the System away from the Federal Reserve Banks and toward Washington. In the same direction was the provision requiring the Board and the Federal Open Market Committee to keep and publish a complete record of all actions taken and of the considerations underlying the actions.

The broadening of the powers of the System was of greater significance than the change in its structure. The Board and the Banks naturally attributed the System's failure to stem the 1929-33 contraction and to prevent the banking panic to its inadequate powers rather than to the use it made of the powers it had. It both requested additional powers and was urged to accept them. The first measure along these lines preceded the panic: the Glass-Steagall Act, discussed earlier, which broadened acceptable collateral for Federal Reserve notes and permitted emergency advances to member banks on any asset. Other provisions of the Banking Act of 1935, all extending the System's powers, are:

(1) Enlargement of the Board's power to alter reserve requirements. First granted in 1933 by the Thomas Amendment to the Agricultural Adjustment Act of 1933 as an emergency power to be exercised only with permission of the President, the emergency power was replaced by a permanent grant of authority, not dependent on Presidential permission, to change reserve requirements between the minimum percentages specified in the act of June 1917 and twice those percentages.<sup>27</sup> A further change in reserve requirements prescribed reserves against government deposits. Country banks, in particular, benefited by a provision permitting "due from" items to be deducted from gross demand deposits instead of solely from "due to" items.

(2) Broadening of the lending powers of the Banks. The section of the Glass-Steagall Act which had allowed emergency advances was liberalized and made permanent. It authorized a Reserve Bank to make advances to

<sup>27</sup> In Aug. 1948 Congress granted the Board temporary power, terminating June 30, 1949, to raise the maximum percentages permitted under the Banking Act of 1935 by 4 points on demand deposits, by 1½ points on time deposits.

In July 1959 the Board was authorized to treat vault cash as part of a member bank's reserves. In Dec. 1959 central reserve and reserve city banks with vault cash holdings greater than 2 per cent of their demand deposits and country banks with vault cash holdings greater than 4 per cent of their demand deposits were given permission to count the excess as reserves. Effective Aug. 25, 1960, the percentage was changed to 2½ per cent for country banks and, effective Sept. 1, 1960, to 1 per cent for reserve city and central reserve city banks. Since Nov. 1960 all vault cash has been counted as part of a member bank's reserves.

Under the law passed in July 1959, the Board was also required to eliminate the central reserve city classification within three years. By Dec. 1, 1960, there was no longer any differential between central reserve and reserve city reserve requirements, and the central reserve city classification that had come into existence nearly a hundred years earlier passed into history.

The Board's authority to allow individual banks in central reserve and reserve cities to carry lower reserves was also broadened in July 1959.

its member banks on any satisfactory security whenever desired, subject only to the rules of the Board. The theory of eligibility as the basis for Federal Reserve credit was thus laid to rest.

(3) Empowering the Board to set a maximum limit to interest rates paid by member banks on time deposits. Granted by the Banking Act of 1933, that power was reaffirmed by the Banking Act of 1935 which gave the same power to the Federal Deposit Insurance Corporation with regard to insured nonmember banks.

(4) Granting of power to the Board to regulate credit advanced by bankers and brokers to their customers for purchasing and carrying registered securities. With this power, granted by the Securities Exchange Act of 1934, the Board has since set margin requirements for loans granted by member and nonmember banks on stocks (Regulation U), and by members of national security exchanges on stocks and bonds (Regulation T).<sup>28</sup> This grant of power was the final outcome of the concern of the Board with stock market speculation in the late twenties and of its attempt to use "direct pressure" to discriminate between stock market and other uses of credit. It was the precursor of other powers directed at the control of particular uses of credit—in particular, control over credit extended for the purchase of consumer goods and for real estate construction, both of which proved to be temporary powers. We shall have occasion to refer to credit controls later (see below, Chapters 9 and 10).

The additional powers, like the powers already possessed by the System, can be divided into three categories: those whose main role is to enable the Board to control the *quantity of money*—we may call these the instruments of monetary policy; those whose main role is to enable the Board to control the *price and use of credit*—we may call these the instruments of credit policy;<sup>29</sup> and those whose main role is to enable the Board to supervise the operations of banks—we may call these the instruments of *bank supervision*. Of course, as our use of the word "main" suggests, there is no hard and fast line between them, and each power may have effects on the quantity of money, the price and use of credit, and the operations of banks. Open market operations and rediscounting were the

<sup>28</sup> Originally margin requirements were applied only against "long" security transactions. On Nov. 1, 1937, the Board included short sales within the scope of margin regulation, with margin for short sales set at 50 per cent, for long reduced from 55 to 40 per cent. Since the war, margin requirements have been uniform for both long and short sales. Up to Apr. 1, 1936, variable percentage margins were set, the margin requirement rising within limits set with each increase in the price of the security. Since then, margin requirements have been a fixed percentage of the price.

<sup>29</sup> Warburton refers to the same distinction, terming it one between "monetary control" and "loan control" (see "Monetary Control under the Federal Reserve Act," *Political Science Quarterly*, Dec. 1946, pp. 513-516).

chief initial monetary powers; the banking measures under consideration added power to vary reserve requirements. Eligibility requirements were the chief initial credit powers; the powers added in this class included control of security credit and, for a time later on, consumer and real estate credit; in addition, the granting of authority to Reserve Banks to make advances to member banks on any satisfactory security rendered the initial eligibility requirements largely irrelevant. Bank examination, requirements for admission to the Federal Reserve System, and, in terms of initial views about their role, reserve requirements were the chief initial supervisory powers; the added powers included control over interest rates on time deposits, control over the percentage of bank capital and surplus that could be represented by security loans, and the policing of the prohibition of the payment of interest on demand deposits.

#### POLICIES OF BANKS

The banks that survived the holocaust of the early thirties probably differed from those that went under. In addition, and very likely much more important, they undoubtedly drew from the experience lessons that affected their future behavior. For both reasons, the banks that survived understandably placed far greater weight on liquidity than the banks in existence in 1929.

The pressure for liquidity is, as we shall see, the best explanation for two notable changes in the composition of bank assets. The changes are: first, a sharp rise in the fraction held in the form of cash assets (cash in vault, items in process of collection, and balances at other banks including Reserve Banks), a change commented on earlier (Chapter 7, section 2) in connection with the emergence of "excess" reserves in 1932; second, a sharp rise in investments relative to loans.

In 1929, cash assets amounted to 14 per cent of total assets, and loans were more than two and one-half times investments (Table 17). By mid-1933, cash assets had risen to 18 per cent of total assets along with a shrinkage of more than one-third in total assets, and there is little doubt that only the frozen condition of banks prevented the percentage from being still higher. At the same time loans were only slightly larger than investments. Moreover, the investments had shifted in composition, from less than 40 per cent in the form of U.S. government securities in 1929 to over 50 per cent in 1933<sup>30</sup> and, judging from member bank data, from nearly three-quarters of U.S. securities in the form of bonds, generally longer term, to only a bit over one-half in this form (Table 18). Those moves were all in the direction of increasing the fraction of its assets that an individual bank could convert into cash at short notice and with small capital loss—these were properties of its assets whose importance had been

<sup>30</sup> *All-Bank Statistics*, p. 35.

TABLE 17  
COMPOSITION OF ASSETS OF COMMERCIAL BANKS, SELECTED DATES, 1929-60

| Date <sup>a</sup> | Assets<br>(billions of dollars) |                    |                       |              | Percentage of Total Assets in: |              |                    |                       | Ratio of<br>Loans to<br>Investments<br>(10) |              |
|-------------------|---------------------------------|--------------------|-----------------------|--------------|--------------------------------|--------------|--------------------|-----------------------|---|--------------|
|                   | Loans<br>(1)                    | Investments<br>(2) | Cash<br>Assets<br>(3) | Other<br>(4) | Total<br>(5)                   | Loans<br>(6) | Investments<br>(7) | Cash<br>Assets<br>(8) |   | Other<br>(9) |
| 1929              | 36.1                            | 13.7               | 9.0                   | 3.6          | 62.4                           | 57.9         | 22.0               | 14.4                  | 5.8   | 2.6          |
| 1933              | 16.5                            | 14.1               | 7.4                   | 2.6          | 40.5                           | 40.7         | 34.8               | 18.3                  | 6.4   | 1.2          |
| 1934              | 15.7                            | 17.1               | 9.6                   | 2.5          | 45.0                           | 34.9         | 38.0               | 21.3                  | 5.6   | 0.9          |
| 1935              | 15.0                            | 19.7               | 11.8                  | 2.4          | 48.9                           | 30.7         | 40.3               | 24.1                  | 4.9   | 0.8          |
| 1936              | 15.6                            | 23.1               | 14.5                  | 2.4          | 55.6                           | 28.1         | 41.5               | 26.1                  | 4.3   | 0.7          |
| 1937              | 17.5                            | 22.1               | 15.0                  | 2.3          | 56.9                           | 30.8         | 38.8               | 26.4                  | 4.0   | 0.8          |
| 1938              | 16.1                            | 21.1               | 16.8                  | 2.2          | 56.2                           | 28.6         | 37.5               | 29.9                  | 3.9   | 0.8          |
| 1939              | 16.4                            | 23.0               | 19.9                  | 2.2          | 61.4                           | 26.7         | 37.5               | 32.4                  | 3.6   | 0.7          |
| 1940              | 17.4                            | 23.8               | 24.6                  | 2.0          | 67.8                           | 25.7         | 35.1               | 36.3                  | 2.9   | 0.7          |
| 1941              | 20.3                            | 27.3               | 25.8                  | 1.9          | 75.4                           | 26.9         | 36.2               | 34.2                  | 2.5   | 0.7          |
| 1945              | 23.7                            | 90.9               | 30.2                  | 1.5          | 146.2                          | 16.2         | 62.2               | 20.7                  | 1.0   | 0.3          |
| 1948              | 39.9                            | 74.0               | 34.2                  | 1.8          | 149.8                          | 26.6         | 49.4               | 22.8                  | 1.2   | 0.5          |
| 1957              | 91.0                            | 73.5               | 40.0                  | 3.9          | 208.4                          | 43.7         | 35.3               | 19.2                  | 1.9   | 1.2          |
| 1958              | 95.6                            | 84.3               | 43.5                  | 4.4          | 227.8                          | 42.0         | 37.0               | 19.1                  | 1.9   | 1.1          |
| 1959              | 103.4                           | 82.7               | 42.9                  | 4.7          | 233.7                          | 44.2         | 35.4               | 18.4                  | 2.0   | 1.3          |
| 1960              | 115.3                           | 74.8               | 47.1                  | 5.3          | 242.5                          | 47.5         | 30.8               | 19.4                  | 2.2   | 1.5          |

<sup>a</sup> June 30 or nearest available call date.

SOURCE: Cols. 1-5, from *All-Bank Statistics*, pp. 34-35; and *Federal Reserve Bulletin*.



TABLE 18  
CHIEF KINDS OF UNITED STATES GOVERNMENT DIRECT OBLIGATIONS HELD BY MEMBER BANKS, 1928-41

| End of:   | Member Bank Holdings<br>(millions of dollars) |                                     |              |   | Per Cent of Total Member<br>Bank Holdings in: |              |   |              | Holdings as Per Cent of Total Amounts<br>Outside Federal Reserve Banks |               |  |  |
|-----------|---|-------------------------------------|--------------|---|---|--------------|---|--------------|--|---------------|--|--|
|           | Total<br>(1)                                  | Bills<br>and<br>Certificates<br>(2) | Notes<br>(3) | Treasury<br>and Liberty<br>Bonds<br>(4) | Bills<br>and<br>Certificates<br>(5)           | Notes<br>(6) | Treasury<br>and Liberty<br>Bonds<br>(7) | Total<br>(8) | Bills<br>and<br>Certificates<br>(9)                                    | Notes<br>(10) | Treasury<br>and Liberty<br>Bonds<br>(11) |  |
| Dec. 1928 | 4,312   | 554                                 | 729          | 3,028                                   | 12.85   | 16.91        | 70.22                                   | 28.0         | 29.4   | 32.7          | 26.8                                     |  |
| June 1929 | 4,155   | 446                                 | 704          | 3,005                                   | 10.73   | 16.94        | 72.32                                   | 27.6         | 28.3   | 32.7          | 26.6                                     |  |
| June 1930 | 4,061   | 259                                 | 463          | 3,340                                   | 6.38  | 11.40        | 82.25                                   | 29.4         | 22.2   | 33.6          | 29.7                                     |  |
| June 1931 | 5,343   | 901                                 | 403          | 4,039                                   | 16.86   | 7.54         | 75.59                                   | 36.1         | 47.4   | 94.8          | 32.4                                     |  |
| June 1932 | 5,628   | 962                                 | 503          | 4,163                                   | 17.09   | 8.94         | 73.97                                   | 34.6         | 42.5   | 50.8          | 32.0                                     |  |
| June 1933 | 6,887   | 1,113                               | 2,049        | 3,725                                   | 16.16   | 29.75        | 54.09                                   | 36.2         | 50.2   | 53.4          | 28.7                                     |  |
| June 1934 | 9,137   | 1,427                               | 2,871        | 4,838                                   | 15.62   | 31.42        | 52.95                                   | 40.0         | 65.5   | 52.9          | 31.8                                     |  |
| June 1935 | 9,871   | 1,099                               | 4,314        | 4,458                                   | 11.13   | 43.70        | 45.16                                   | 41.7         | 75.9   | 50.7          | 32.5                                     |  |
| June 1936 | 11,721  | 1,266                               | 5,161        | 5,295                                   | 10.80   | 44.03        | 45.18                                   | 41.2         | 73.0   | 52.2          | 31.4                                     |  |
| June 1937 | 10,870  | 821                                 | 4,361        | 5,689                                   | 7.55  | 40.12        | 52.34                                   | 35.8         | 48.9   | 46.2          | 29.6                                     |  |
| June 1938 | 10,215  | 316                                 | 3,653        | 6,246                                   | 3.09  | 35.76        | 61.15                                   | 34.5         | 63.3   | 45.8          | 29.6                                     |  |
| June 1939 | 10,946  | 441                                 | 2,720        | 7,786                                   | 4.03  | 24.85        | 71.13                                   | 35.1         | 52.2   | 44.8          | 32.0                                     |  |
| June 1940 | 11,600  | 797                                 | 2,543        | 8,261                                   | 6.87  | 21.92        | 71.22                                   | 36.5         | 61.2   | 48.4          | 32.8                                     |  |
| June 1941 | 14,238  | 1,127                               | 2,631        | 10,481                                  | 7.92  | 18.48        | 73.61                                   | 40.3         | 70.3   | 53.9          | 36.3                                     |  |

NOTE: Details do not necessarily add to totals because of rounding.

SOURCE, BY COLUMN

(1) Sum of cols. 2-4.

(2-4) *Banking and Monetary Statistics*, p. 77.

(8) Holdings of the Federal Reserve Banks were deducted from the total of the 4 kinds of debt outstanding (*ibid.*, pp. 332, 343, 375, 509-510). All bonds held by the Federal Reserve Banks were treated as Treasury or

Liberty bonds. Col. 1 was expressed as a percentage of the difference.

(9-11) Procedure similar to that for col. 8, except that in 1929-31, no June breakdown of Federal Reserve holdings was available. The percentage distribution of the 4 kinds of debt in June 1929 and 1930 was assumed the same as on the preceding Dec. 31 and in June 1931 the same as on the following Dec. 31.

impressed on commercial bankers by the experiences of the preceding few years.

As total assets increased sharply after 1933, bankers took the opportunity offered by the increase to strengthen their cash position and to expand investments, and among them, governments, more rapidly than loans. By 1940, cash assets had mounted to 36 per cent of total assets (Table 17). Loans were only about 70 per cent of investments and about 70 per cent of investments were in the form of U.S. government securities.

Unfortunately, there are no adequate data on the maturity distribution of bank investments. Beginning in late 1928, data are available on the distribution of government security holdings of all member banks among three categories: bills and certificates of indebtedness; notes; and bonds (see Table 18). The first category had a maturity of less than one year when issued, the second, of one to five years, and the third, of more than five years. However, depending on the particular security, the remaining maturity, *when purchased* or held, might be quite different from the original maturity. A bond, for example, might have a remaining maturity when purchased or held of less than a year and so be comparable in maturity to bills. In consequence, the distribution of security holdings among the indicated categories is at best a very rough index of their distribution by maturity.

The data show a decided shift in the composition of the security holdings of banks after 1928 and 1929. In 1928, 1929, and 1930, bonds constituted about 70 to 80 per cent of the total of U.S. securities held by member banks, the balance being distributed somewhat more in notes than in bills and certificates. In 1931 and 1932, bonds remained about 75 per cent of the total, but about two-thirds of the remainder was in the form of bills and certificates and one-third in notes, suggesting that under the pressure of successive liquidity crises banks shifted into shorter-term securities. After 1932, the fraction in the form of bonds fell steadily to 54 and 53 per cent in June of 1933 and 1934, 45 per cent in June of 1935 and 1936. True, after 1932, notes rose sharply relative to bills and certificates, from one-third of the three combined in 1932 to two-thirds in 1933 and 1934 and to four-fifths in 1935 and 1936. However, that shift was largely a result of a limited supply of bills and certificates. Member banks held close to 50 per cent of the bills and certificates outside the Federal Reserve Banks from 1931 to 1933, and around 70 per cent from 1934 to 1936. They held roughly 50 per cent of the notes from 1932 to 1936 and around one-third of the bonds. By contrast, in 1928 banks held about 30 per cent each of the bills and certificates and of the notes outside the Federal Reserve System and about a quarter of the bonds. The banks had absorbed so much larger a fraction of the bills, certificates, and notes

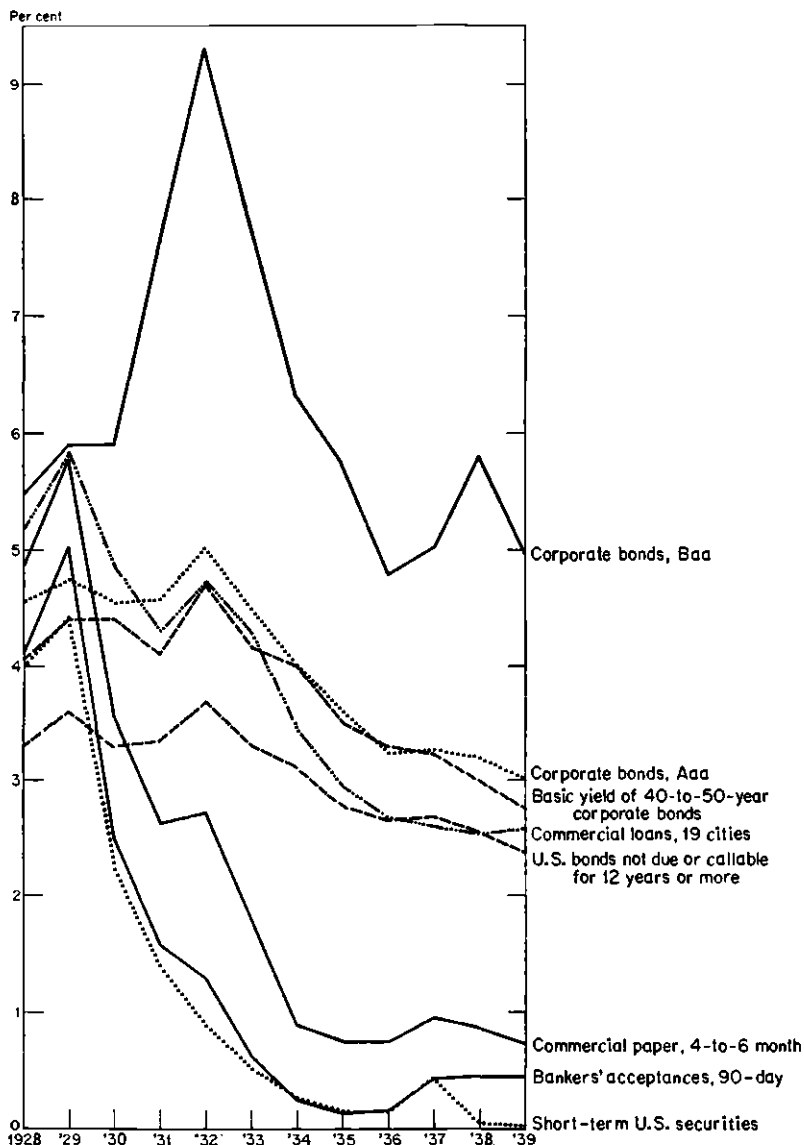
outside the Federal Reserve System than of the bonds that banks had become the dominant factor in the market for these short-term obligations.

No doubt changes in the demand for loans and in the supply of investments, and the large increase in available reserves produced by the gold inflows—all of which constituted changes in the supply of assets for banks to hold—played a role in the shifts in asset composition. However, the major factor was not those but rather a shift in the liquidity preferences of commercial banks, that is, a change in the demand by banks for assets, which is to say, in the portfolio composition they sought to attain for any given structure of yields. The inflow of gold—the most dramatic force operating on the supply side—in the first instance increased the cash assets of the banking system. But the banks were individually free to convert the additional assets into other forms, and collectively of course that conversion would have been and was reflected in a rise in the stock of money and in the total assets of banks. Such reactions on the part of banks could therefore have offset in full, as they did in part, the effect of the gold inflow on the *ratio* of cash assets to total assets. There was, of course, some lag in the reactions of banks, and no doubt the lag made cash assets somewhat larger relative to total assets during the periods of steady gold inflow than they otherwise would have been. Such a lag cannot, however, account for the continued increase in the ratio of cash assets to total assets, since there was no corresponding increase in the rate of gold inflow. Moreover, such a lag cannot explain the shifting composition of noncash assets.

The behavior of rates of interest is decisive evidence that the shifting composition of noncash assets cannot be explained by changes in the supply of assets available for banks to hold but only by changes in liquidity preferences on the part of the banks. Suppose the shifts in bank portfolios had reflected mainly shifts in supply without a change in the preferences of banks for different kinds of assets. The assets whose *relative* importance in the portfolio increased should then also have been the ones on which the yield rose in comparison with the yield on other assets, since the issuers of such assets would have had to raise their yield to induce banks to hold them in increased amount.<sup>31</sup> In fact, the structure of

<sup>31</sup> The wording is deliberately vague about how the yields should be compared, whether in terms of the ratio of yields or the absolute difference between them (spread). It is an open question, about which there is no general agreement, which is the more relevant for judging changes in the relative attractiveness of assets. In our view, this question cannot be given a single answer; sometimes the one and sometimes the other will be the more relevant, though on the whole, for our present purpose, the spread seems preferable. Fortunately, however, for the episode under discussion, it makes no difference how the question is answered. Except for cash assets (see footnote 32), the major movements in the spread and in the relative yield were in the same direction.

## Changing Relations Among Interest Yields. 1928-39



SOURCE Baa and Aaa corporate bonds, commercial loans, bankers' acceptances, *Banking and Monetary Statistics*, pp. 448, 464, 468. Commercial loan rate, annual averages: for 1939 based on Jan.-Feb. only; monthly data unavailable thereafter on a comparable basis. Basic yield of 40- to 50-year corporate bonds, *Historical Statistics*, 1960, p. 657, Series X-347. U.S. government bonds, *Federal Reserve Bulletin*, Dec. 1938, p. 1045; Feb. 1940, p. 139. Commercial paper, *Historical Statistics*, 1949, p. 346, averaged annually. Short-term U.S. government securities, *FRB*, May 1945, p. 483; 3- to 6-month certificates and notes, 1928-30; 3- to 9-month Treasury bills, 1931-42.

interest rates moved the other way for assets other than cash assets.<sup>32</sup> Rates charged on customer loans and yields on long-term government bonds were low after 1933 by earlier standards, and customer rates had fallen more than long-term bond yields; however, rates on short-term commercial paper, bankers' acceptances, and short-term U.S. securities—the kinds of assets whose relative importance in bank portfolios had increased most—were lower still by those standards (see Chart 35).<sup>33</sup> Among corporate bonds, yields on lower-grade bonds had fallen decidedly less from 1929 to 1936 than yields on high-grade bonds had, again suggesting a shift of preference toward the more certain. The most notable change in the structure of rates of return from before to after the 1929-33 contraction was the sharp widening in spread among assets differing in the degree of confidence the holder could attach to their convertibility into a known cash sum at need and on short notice. It follows that the initial supposition that the change in bank portfolios reflected mainly shifts in the supply of assets is untenable. The change must have reflected shifts in demand by banks and others for different kinds of assets.<sup>34</sup> Moreover, the change in the distribution of government

<sup>32</sup> The argument from interest rates alone, which is decisive for other assets, is not decisive for cash assets. It does not, of course, follow that there was no shift in preferences for cash assets comparable to that for the other assets that rose in relative importance in bank portfolios. On the contrary, we argue below that there was such a shift, and that it reinforced a change in conditions of supply to produce a much larger rise in the relative importance of cash assets in bank portfolios than would otherwise have occurred.

For the cash assets of Table 17, the yield fell from a minor positive amount, because of interest paid on interbank balances, to zero. The ratio of the yield on other assets to the yield on cash assets therefore rose from a finite amount to infinity. However, the spread between other yields and the yield on cash assets as a whole undoubtedly fell. For an unduplicated cash total for the banking system as a whole, i.e., high-powered money holdings, the yield was zero throughout, so the ratio of yields remained unchanged, while the spread fell. The change in conditions of supply therefore fostered a rise in the fraction of assets held in the form of cash assets.

<sup>33</sup> It should be noted that the customer loan rate is not, like all the other rates in Chart 35, a market rate, and may for that reason be subject to a wider margin of error. In addition, other dimensions of the loan, such as collateral conditions, the size of the compensating balance borrowers are required to hold, and so on, may vary more than for market rates.

<sup>34</sup> The increased demand for short- relative to long-term securities was no doubt partly motivated by a belief that rates of interest were likely to rise in the future. That expectation would make long securities less attractive than short at the same rate, or at a difference in rates that prevailed earlier when such expectations were not held. David Meiselman argues persuasively that the whole of the change in spread between one-year and longer rates on corporate bonds can be explained by the shift in relative demand arising from such expectation effects (see his *The Term Structure of Interest Rates*, Englewood Cliffs, N.J., Prentice-Hall, 1962). Meiselman does not consider in detail rates for periods of less than a year, which play a crucial role in our analysis.

These expectation effects do not, of course, explain the widening of the spread between more and less risky investments of the same maturity; that must have

securities of varying maturity between banks and other holders could only have occurred because the change in bank preferences for liquidity was greater than any corresponding change in the preferences of other holders.

The evidence furnished by interest rates is confirmed by a study by C. O. Hardy and Jacob Viner of the availability of bank credit in the Chicago Federal Reserve District during the period from the bank holiday to September 1, 1934. The study, based mainly on interviews with bankers and brokers, was undertaken "to find out so far as possible whether, and to what extent, the small volume of bank loans was due to the desire of banks to retain or attain liquidity, to the attitude of examining officials, to the unwillingness of businessmen to assume the risk of borrowing to maintain or expand their operations, or to the impairment of the capital of many businessmen by losses incurred during the depression which made

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reflected a shift of preference toward the less risky for other reasons. As the next sentence in the text indicates, they can explain the change in distribution of government securities among banks and others only if banks had different expectations from those of others, believing that rates would rise more rapidly in the rather short-term future than others thought they would.

While Meiselman's conclusion may be entirely justified for rates for periods of a year or longer and while its being the correct explanation for rates for shorter periods would not seriously affect the conclusions stated in the text—since they do not depend on the reason for the shift in preferences—we do not believe that his conclusion can be extended to the rates for very short periods with which we are most concerned. As we have seen, banks came to play a dominant role in the market for some of these assets, and the behavior of the corresponding rates therefore hinges critically on shifts in banks' preferences. The evidence we adduce below to explain the notable increase in bank cash assets strongly supports the view that the 1929-33 experience led banks to attach a much greater value than formerly to assets that could be converted into known cash sums at need and at short notice for reasons other than the belief that interest rates would rise. Their experience, more trying than that of other asset holders, must have impressed them with their greater need to hedge against uncertainty; and the structure of their liabilities meant that such hedging required them to shift to shorter-term securities, as they did.

A shift in bank preferences for reasons other than expectations about future rates therefore explains in a simple and straightforward manner (1) the very great increase in spread for very short-term relative not only to long-term but also to one-year rates; (2) the sharp shift in composition of bank portfolios; (3) the shift in the distribution of government securities among holders; and (4) the behavior of "excess reserves." The expectations hypothesis can then supplement this explanation for banks and be the major explanation for longer rates and other holders.

In more recent work on the cyclical behavior of the term structure of interest rates, Reuben Kessel has found that combining the expectations hypothesis with liquidity considerations gives a more satisfactory explanation of the empirical evidence than either gives alone for maturities both shorter and longer than one year. While the finding does not demonstrate that *shifts* in liquidity preference played the role we assign to them, it perhaps makes that interpretation more plausible than it would otherwise be (see his forthcoming "The Cyclical Behavior of the Term Structure of Interest Rates," an NBER study, in preparation).

them poor banking risks." The authors concluded: "That there exists a genuine unsatisfied demand for credit on the part of solvent borrowers, many of whom could make economically sound use of working capital . . . That one of the most serious aspects of this unsatisfied demand is the pressure for liquidation of old working-capital loans, even sound ones. That this pressure is partly due to a determination on the part of bankers to avoid a recurrence of the errors to which they attribute much of the responsibility for the recent wave of bank failures . . ." <sup>35</sup>

The increased fraction of bank assets held in the form of cash assets, unlike the increased fraction held in short-term investments, can be partly explained by supply considerations. As noted, a lagged reaction to the gold inflow may have contributed to the increase. More important, because longer lasting, rates of interest in general fell, which made cash assets more attractive compared to other assets (or, equivalently, less costly in terms of income sacrificed). Moreover, the shift in preferences depressed particularly the yields on short-term highly liquid assets, fostering still more the shift into cash. For example, the yield on Treasury bills averaged 0.515 per cent per year in 1933, 0.256 in 1934, 0.137 in 1935, and 0.143 in 1936. After rising to 0.447 in 1937 in response to the doubling of reserve requirements (see Chapter 9 below), it fell to 0.053 in 1938, 0.023 in 1939, and 0.014 in 1940. At those yields it was hardly worthwhile to hold bills instead of cash. In consequence, while the ratio of government securities to total assets for all banks reached its peak in 1936, the ratio of cash assets to total assets continued rising until 1940.

While supply considerations explain part of the shift into cash assets, they cannot explain the whole of the shift, which was motivated also by the same desire for liquidity as the shift into investments. To begin with, cash assets were acquired along with investments to satisfy that desire; after 1936, the acquisition of cash assets became the most convenient and least costly way to achieve the desired liquidity. Indirect confirmation of these propositions is furnished by the evidence from interest rates that the shift into investments reflected a change in the liquidity preferences of banks. Such a change could clearly be expected also to affect cash assets since those assets fulfill par excellence the end desired in holding short-term investments—convertibility into known sums at need and on short notice. In addition, there are a number of other bits of evidence that together are fairly decisive.

Perhaps the most striking of these is a comparison between Canadian and United States experience made by George R. Morrison.<sup>36</sup> Canada's

<sup>35</sup> *Report on the Availability of Bank Credit in the Seventh Federal Reserve District*, submitted to the Secretary of the Treasury, GPO, 1935, pp. 3 and VI.

<sup>36</sup> In "Liquidity Preferences of Commercial Banks," unpublished Ph.D. dissertation, University of Chicago, 1962.

cyclical experience was almost the same as that of the United States from 1929 to 1939, except that it was spared any bank failures or widespread runs on banks. Rates of interest moved in much the same way as in the United States—to be expected from the close link between the financial markets in the two countries. Canadian banks increased their cash assets relative to their deposits, but by a very much smaller proportion than did U.S. banks.

A second bit of evidence comes from Morrison's examination of the relation in the United States between cash assets and interest rates before 1929 and after 1939. On the basis of both earlier and later experience, the increase in cash assets in the 1930's was much larger than the increase that might have been expected to be produced by the decline in yields alone.

Our analysis of the reaction of member banks to the doubling of reserve requirements in 1936 and 1937 is still another bit of evidence that they had accumulated cash assets because their demand for liquidity had risen. When the rise in reserve requirements immobilized the accumulated cash, they proceeded rather promptly to accumulate additional cash for liquidity purposes (see the more detailed discussion in Chapter 9).<sup>37</sup>

The form taken by the increase in cash assets was doubtless affected by the prohibition of payment of interest on demand deposits. Had the prohibition not existed, more of the growth of cash assets might have taken the form of balances at other commercial banks rather than at Federal Reserve Banks. As it was, there was no incentive to hold at other commercial banks balances desired for their liquidity. How great this effect was is by no means clear. The low yield on short-term assets would have meant a low rate of interest offered for interbank balances and perhaps even a zero rate of interest, in which case the result would have been the same.

The shift in liquidity preferences of banks was destined to be temporary. To judge by the experience of earlier episodes,<sup>38</sup> the passage of time without any extensive series of bank failures would have dulled the fears of bank managers, leading them to set a lower premium on liquidity. In any case, the establishment of FDIC, which was accompanied by a dramatic reduction in the rate of bank failures, provided additional assurance against the occurrence of "runs" of the kind that had produced the shift in liquidity preferences. Such assurance, while by no means clear at the start of FDIC, eventually became increasingly clear, but still it took

<sup>37</sup> See also Phillip Cagan's forthcoming monograph on determinants and effects of changes in the money stock in the United States since 1875, a National Bureau study, Chap. 5.

<sup>38</sup> See Chap. 2, sect. 4; Chap. 3, sect. 3; and Chap. 4, sect. 6. Also see Cagan's forthcoming study referred to in the preceding footnote, and Morrison's study referred to in footnote 36, above.



time for banks to adapt their behavior to that new fact. It is therefore not surprising that the ratio of cash assets to total assets continued rising until 1940.

Though the ratio of cash assets to total assets fell drastically during the war and remained at an even lower level thereafter, it has remained above its 1929 level (Table 17, col. 8). The reason is not a continued higher preference on the part of banks for cash assets but rather a rise in reserve requirements. Banks have no choice about the form of their required reserves. That fraction of their assets has to be kept as cash assets—indeed, until 1959, as deposit balances at the Federal Reserve System—and, as they found out at great cost in 1930–33, can not be drawn upon for emergencies without precipitating suspension. A change in a bank's cash ratio as a result of a change in reserve requirements is, therefore, a different phenomenon from a change as a result of a shift in asset preference.

Aggregate data on required reserves are available only for member banks. Accordingly, Table 19, which eliminates required reserves from both the numerator and denominator of the cash ratio, is restricted to member banks. In 1929, member banks held 11.3 per cent of their assets in excess of required reserves in the form of cash in vault, cash items in the process of collection, and balances at banks (commercial and Federal Reserve) in excess of required reserves. That ratio rose steadily from 1933 to 1936, then fell as a result of the doubling of reserve requirements in 1936–37, then resumed its rise to a peak of nearly 30 per cent in 1940. By 1945 it was back to roughly its 1929 level, and it has fluctuated around that level since, whereas the ratio of all cash assets to total assets (column 3) has fluctuated around a level several percentage points higher than the 1929 level.

Unlike the cash ratio, the ratio of investments to loans continued to rise during the war. Although it has fallen since, it is still about twice its 1929 level. However, the divergent behavior of the cash ratio and the investment-loan ratio does not imply that the effect of the increased preference for liquidity on the demand for investments lasted longer than its effect on the demand for cash. Just as the demand for both categories expanded together from 1932 to 1940, so the demand for both could have declined together subsequently, since the divergent behavior of the actual ratios can be readily explained by differences on the supply side. During the war there was a rapid increase in the supply of government securities, and probably also a decrease in the relative demand for bank loans because many firms were financed by federal government funds. As is consistent with this interpretation, the spread in yield between highly liquid and less liquid bank assets narrowed, if anything, during the war—to an especially striking extent if government bonds whose

TABLE 19  
RELATION OF CASH ASSETS TO REQUIRED RESERVES AND TOTAL ASSETS,  
MEMBER BANKS, SELECTED DATES, 1929-60  
(dollars in billions)

| Date <sup>a</sup> | Total Assets (1) | Cash Assets (2) | Cash Assets as Percentage of Total Assets (3) | Required Reserves (4) | Required Reserves as Percentage of Total Assets (5) | Cash Assets in Excess of Required Reserves as Percentage of Total Assets in Excess of Required Reserves (6) |
|-------------------|------------------|-----------------|---|-----------------------|---|---|
| 1929              | 45.5             | 7.2             | 15.8  | 2.3                   | 5.1   | 11.3  |
| 1933              | 33.0             | 6.2             | 18.8  | 1.8                   | 5.5   | 14.1  |
| 1934              | 37.4             | 8.2             | 21.9  | 2.1                   | 5.6   | 17.3  |
| 1935              | 40.7             | 10.1            | 24.8  | 2.6                   | 6.4   | 19.7  |
| 1936              | 46.5             | 12.5            | 26.9  | 2.9                   | 6.2   | 22.0  |
| 1937              | 47.5             | 13.0            | 27.4  | 6.0                   | 12.6  | 16.9  |
| 1938              | 47.1             | 14.8            | 31.4  | 5.1                   | 10.8  | 23.1  |
| 1939              | 51.9             | 17.6            | 33.9  | 5.9                   | 11.4  | 25.4  |
| 1940              | 57.8             | 21.8            | 37.7  | 6.9                   | 11.9  | 29.3  |
| 1941              | 64.9             | 22.7            | 35.0  | 7.8                   | 12.0  | 26.1  |
| 1945              | 126.4            | 25.8            | 20.4  | 13.3                  | 10.5  | 11.1  |
| 1948              | 127.3            | 30.3            | 23.8  | 16.7                  | 13.1  | 12.3  |
| 1957              | 176.5            | 35.3            | 20.0  | 18.3                  | 10.4  | 10.7  |
| 1958              | 194.0            | 38.5            | 19.8  | 18.3                  | 9.4   | 11.5  |
| 1959              | 197.3            | 37.9            | 19.2  | 18.0                  | 9.1   | 11.1  |
| 1960              | 204.2            | 41.9            | 20.5  | 17.7                  | 8.7   | 13.0  |

<sup>a</sup> June 30 or nearest available call date.

SOURCE, BY COLUMN

- (1) *Banking and Monetary Statistics*, pp. 72 and 74, and *Member Bank Call Report*.
- (2) The sum of reserves at Federal Reserve Banks, cash in vault, balances at domestic and foreign banks, and cash items in process of collection, from same source as for col. 1.
- (3) Col. 2 divided by col. 1.
- (4) 1929-41: *Banking and Monetary Statistics*, pp. 395-396.  
1945-59: *Member Bank Call Report*.  
1960: Average for week ending June 15, 1960, from *Federal Reserve Bulletin*, Dec. 1960, p. 1350.
- (5) Col. 4 divided by col. 1.
- (6) Computed from cols. 1, 2, and 4.

prices were pegged by the Federal Reserve are regarded as highly liquid assets. After the war, the supply of government securities remained high, and an increasing proportion of business firms found it possible to raise funds they required on the open market. The spread of rates of return continued to narrow through 1960. Supply conditions had reverted somewhat by that time, but not fully, to prewar conditions, hence the investment-loan ratio remained above its 1929 level.

It should be noted that our interpretation of the changes in the composition of bank assets and, in particular, of the emergence of a large volume of "excess reserves" in the 1930's runs sharply counter to an interpretation that is widely held<sup>39</sup>—and one that was also implicit in Federal Reserve policy in the 1930's and has been to a lesser degree since. According to that interpretation, excess reserves were primarily unneeded surplus funds held by banks, proof of easy-money conditions and of a lack of private demand for credit. Banks were, as it were, in metastable equilibrium. Additional funds acquired by banks were in the main simply added to cash balances; additional demands on banks were met by reducing balances. There was no unique desired structure of assets, corresponding to given rates of return on assets, disturbance of which would prompt banks to seek to restore that same structure; they would be content to retain the new one. On this view, changes in reserve requirements had no effect, so long as they did not absorb all excess reserves either for all banks or for any significant group of banks.<sup>40</sup> This was the view explicitly presented by the Board of Governors in connection with the doubling of reserve requirements in 1936-37.<sup>41</sup> As we have already implied and as we

<sup>39</sup> Woodlief Thomas, "Monetary Controls," *Banking Studies*, Board of Governors of the Federal Reserve System, 1941, reprinted 1947, pp. 341-342; Allan Sproul, "Changing Concepts of Central Banking," *Money, Trade, and Economic Growth*, in Honor of J. H. Williams, New York, Macmillan, 1951, pp. 297-298; R. A. Gordon, *Business Fluctuations*, New York, Harper, 1952, pp. 398-399. An interpretation essentially identical with ours is presented by Paul A. Samuelson, "Fiscal Policy and Income Determination," *Quarterly Journal of Economics*, Aug. 1942, p. 594.

<sup>40</sup> See Board of Governors of the Federal Reserve System, *Annual Report*, 1936, p. 15; 1937, p. 2; E. A. Goldenweiser, *Monetary Management*, New York, McGraw-Hill, 1949, pp. 57-59; and *idem*, *American Monetary Policy*, New York, McGraw-Hill, 1951, pp. 175-182.

<sup>41</sup> Opinions expressed within the System were less dogmatic and unqualified than official justifications for the actions taken were, though their general tenor was the same.

A series of memoranda dealing with excess reserves, prepared at the Federal Reserve Bank of New York from 1934 on, apparently provided the initial intellectual basis for doubling reserve requirements (see Chap. 9, sect. 4). These memoranda, as well as statements by Bank officials to the New York board of directors, the FOMC, and the Board of Governors, present essentially the view outlined above, when they deal with the specific subject of the large accumulation of excess reserves and the measures that should be taken to deal with them. For example, a memorandum, dated Nov. 7, 1935, "Plans for Credit Control," states, "Had there been no gold inflow the excess reserves created by the Reserve System

point out in more detail in Chapter 9 in discussing the 1937-38 contraction, the reaction to the doubling of requirements contradicts the official view and supports our interpretation.

## 2. Changes in the Monetary Standard

### GOLD POLICY

President Roosevelt's proclamation of a bank holiday on March 6, 1933, also prohibited banks from paying out gold or dealing in foreign exchange during the bank holiday. The Emergency Banking Act of March 9, 1933, which confirmed and extended the March 6 proclamation, granted the President emergency powers over banking transactions and over foreign exchange dealings and gold and currency movements. The next day, March 10, the President issued an executive order extending the restrictions on gold and foreign exchange dealings beyond the banking holiday proper and, in effect, prohibiting gold payments by banking and non-banking institutions alike, unless permitted by the Secretary of the Treasury under license. The order also narrowly limited foreign exchange dealings. Those measures were a precursor to nearly a year of tinkering with the monetary standard which culminated in the most far-reaching alteration in its legal structure since the departure from gold during the Civil War and subsequent resumption in 1879.<sup>42</sup>

Despite the effective suspension of gold payments, the price of gold,

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would now have been entirely absorbed by the increase in the required reserves [as a result of deposit expansion]"—a statement implying that deposit expansion would have been identical even if the reserves had increased at a much slower rate (Harrison, Notes, Vol. VI; also Harrison, Special, no. 9, p. 2). At the same time, this view is occasionally qualified by the recognition that the same level of excess reserves may have different effects on the willingness of member banks to expand their earning assets, and in different contexts statements are made that go even further in the direction of our interpretation. For example, President Harrison suggested, in commenting on the first rise in reserve requirements in 1936, that it "lessened to some extent the pressure upon banks to invest their surplus funds," i.e., that it had a contractionary effect (Harrison, Open Market, Vol. IV, unrevised minutes of meeting, Nov. 19, 1936). The explicit reconciliation of the two strands in System opinion rested on a distinction of magnitude.

The conclusion we draw from perusal of the Harrison Papers is that the officers of the New York Bank quite explicitly recognized the changed liquidity preferences of banks and the desirability of excess reserves to meet them from 1930 to 1934 or 1935 (see Chap. 7, sect. 5), but they could not accept excess reserves so large in magnitude as those that accumulated thereafter as a reflection of such changed preferences, hence were led to the view that they had no constructive effects.

<sup>42</sup>For a detailed chronology and description of the steps taken during the year, see J. D. Paris, *Monetary Policies of the United States, 1932-1938*, New York, Columbia University Press, 1938, pp. 12-32 and 118-120. For a different kind of description of the same events, see F. A. Pearson, W. I. Myers, and A. R. Gans, "Warren as Presidential Adviser," *Farm Economics*, New York State College of Agriculture, Cornell University, No. 211, Dec. 1957.

or the rate of exchange between the dollar and currencies like the French franc that remained rigidly linked to gold, hovered around "par" for over a month. The suspension was presumably regarded as part of the banking emergency and hence expected to be temporary; foreign exchange transactions were strictly controlled and limited; the administration made no official announcement that it proposed to permit the dollar to depreciate or be devalued; and after some weeks, several licenses to export gold were granted. Moreover, the technical gold position was sufficiently strong so that there was little doubt the preceding gold parity could have been maintained if desired; the ratio of the gold stock to the total stock of money was higher than at any time since 1914.

One important step, unprecedented in the United States, was taken during this period. On April 5, an executive order forbade the "hoarding" of gold and required all holders of gold, including member banks, to deliver their holdings of gold coin, bullion, or certificates to Federal Reserve Banks on or before May 1 except for rare coins, reasonable amounts for use in industry and the arts, and a maximum of \$100 per person in gold coin and gold certificates.<sup>43</sup> The gold coin and gold certificates were exchanged for other currency or deposits at face value, and the bullion was paid for at the legal price of \$20.67 per fine ounce. The "nationalization" of gold outside Federal Reserve Banks was later completed by an order of the Secretary of the Treasury, dated December 28, 1933, excepting only rare coins and a few other minor items from the requirement that all gold coin, gold bullion, and gold certificates be delivered to the Treasurer of the United States at face value corresponding to the legal price of \$20.67 per fine ounce. The expiration date for the surrender of gold was later set as January 17, 1934,<sup>44</sup> when the market price of gold was in the neighborhood of \$33 per fine ounce.<sup>45</sup>

<sup>43</sup> *Federal Reserve Bulletin*, Apr. 1933, pp. 213-214.

<sup>44</sup> *FRB*, Feb. 1934, p. 80.

<sup>45</sup> Pearson, Myers, and Gans, "Warren," p. 5647. The amount of gold coin and gold certificates outside the Treasury and the Federal Reserve Banks at the end of Feb. 1933 was estimated by contemporary Federal Reserve statistics to be \$1,220 million, of which \$571 million was in coin and \$649 million in certificates (*FRB*, Feb. 1934, p. 95). These statistics show the amount of gold coin outside the Treasury and Federal Reserve as falling to \$367 million at the end of Mar. 1933 (before the first executive order requiring the transfer of gold coin), to \$335 million at the end of Apr., then declining gradually to \$311 million at the end of Dec. and to \$287 million at the end of Jan. 1934 (*ibid.*). The gold coin then outstanding was dropped from the monthly circulation statement as of Jan. 31, 1934. It was assumed that that amount had mainly been lost, destroyed, exported without record, or was in numismatic collections, although some unknown amount remained illegally in private hands. Since the amount turned in to the Treasury at \$20.67 an ounce between June 1934 and June 1960 totaled less than \$12 million, it might be concluded that the amount of gold coin outstanding after Jan. 1934 was not significant.

The experience with national bank notes analyzed in footnote 20, however, in-

An executive order of April 20, 1933, extending and revising the gold embargo, and comments by the President at his news conference the preceding day ended the period of stability in the price of gold. The President made it clear that the administration intended to permit the dollar to depreciate in terms of foreign currencies as a means of achieving a rise in domestic prices. The order applied the restrictions on foreign exchange transactions not only to banks licensed under the executive

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dicates that losses could have accounted for only a small part of the \$287 million still outstanding at the end of Jan. 1934. Whatever losses there were presumably occurred during the period from 1907 to 1933, since in 1907 the Director of the Mint presented revised estimates of gold coin in circulation which took into account probable losses from 1873 to 1907. The average amount of gold coin reported as in circulation from 1907 through 1933 was \$490 million. The rate of loss of gold coin would presumably be substantially less than that of national bank notes. Even the rate of loss for national bank notes of roughly \$1 per \$1,000 per year would have meant a loss of only \$12.7 million over the 26-year period.

Could unrecorded gold exports have accounted for most of the \$287 million of gold coin not surrendered by the public by the end of Jan. 1934? We think not. The two main channels for export of gold without record before 1934 were immigrant remittances and travel expenditures. To estimate the probable size of such exports, we applied to the balance of payments figures for those items, 1907-33, the ratio of the gold correction for 1873-1900 to similar balance of payments figures for those years. The estimate so obtained is \$80 million, but it may well be an overstatement: (1) the gold correction for the earlier period is only in part—although probably in major part—attributable to unrecorded exports; (2) travel expenditures for the earlier period are limited to passengers' transportation and travel expenses, while for the period since 1907 they also include import freight payments.

If the estimates of gold lost and gold exported without record are added to the gold coin returned to the Treasury since 1934, we are still far short of accounting for even half of the \$287 million. We therefore concluded that in Jan. 1934 the bulk of the \$287 million was retained illegally in private hands. For this reason we restored to the gold stock and gold circulation the \$287 million which the Federal Reserve subtracted for 1914-33 from the figures as originally published. Since gold coin has not been a component of the money stock since Jan. 31, 1934, our series exclude the \$287 million since that date.

Until July 14, 1954, it was lawful for U.S. citizens to hold as rare coin only two coins of each specimen minted. A regulation of the Secretary of the Treasury (*Federal Register*, XIX, No. 135, July 14, 1954, p. 4331) removed any limit on the possession of gold coin minted before Apr. 5, 1933, designating all such coins as of numismatic value.

Although it has been illegal since 1933 for the public to hold gold certificates, amounts outstanding were not dropped from the monthly circulation statement after Jan. 1934, as they were for gold coin. There has, however, been a substantial decline in gold certificates from the total of \$178 million recorded as outstanding at the end of Jan. 1934. At the end of 1960 only \$30 million was still reported in circulation, most of which probably may not be returned to the Treasury. Application of the loss rate for national bank notes to the average amount of gold certificates in circulation from 1880 through 1933 yields a probable loss of \$24 million over the 53-year period. However, in all likelihood this is an overestimate, since gold certificates were surely subject to a decidedly smaller rate of loss. This judgment is based on the fact that, compared with national bank notes, gold certificates were of higher denominations, and a larger proportion of the amounts outstanding was held in bank vaults.

order of March 10, but also to all persons dealing in foreign exchange. On the same day, the Thomas amendment to the Agricultural Adjustment Act was offered in Congress. The amendment, enacted into law on May 12, and explicitly directed at achieving a price rise through expansion of the money stock, contained a provision authorizing the President to reduce the gold content of the dollar to as low as 50 per cent of its former weight. The dollar price of gold immediately started rising, which is to say that so also did the dollar price of foreign currencies, including both those like the French franc that remained on gold and those like the pound sterling that had gone off gold at an earlier date. In the next three months, the market price of gold rose to \$30 an ounce, and thereafter fluctuated erratically between a low of about \$27 and a high of nearly \$35 until January 30, 1934, when the Gold Reserve Act was passed.<sup>46</sup> During that period, the United States had a floating exchange rate determined in the market from day to day, as in the period from 1862 to 1879. However, there was considerably greater government interference in the market. On September 8, 1933, an official gold price, to be fixed daily at the estimated world market figure less shipping and insurance cost, was established. The Treasury agreed to buy gold at that price to give American gold miners a price as high as they could have obtained by export in the absence of the export embargo.

Starting in October, the government intervened actively to raise the price of gold. The Reconstruction Finance Corporation was authorized to buy newly mined domestic gold from October 25 on, and a few days later, through the agency of the Federal Reserve Banks, to buy gold abroad. The purchase price was raised almost daily. For a time, the large scale of RFC purchases abroad made the announced price for newly-mined domestic gold the effective market price. From the end of November, however, until the end of January 1934, the announced price exceeded the market price abroad.<sup>47</sup>

The aim of the gold policy was to raise the price level of commodities, particularly farm products and raw materials, which sustained the greatest relative decline during the preceding years of deflation. That aim was pursued simultaneously through other New Deal measures, of which the National Recovery Administration's promulgation of "codes" and the Agricultural Adjustment Administration's production controls were the most notable. It was not pursued, as we have seen, through any substantial increase in the quantity of money, though the Thomas amendment provided the legal basis for an increase even without the concurrence of the Federal Reserve System. Most farm products and raw materials exported by the United States had a world market in which this country,

<sup>46</sup> See Pearson, Myers, and Gans, "Warren," pp. 5636, 5645-5647.

<sup>47</sup> Pearson, Myers, and Gans, "Warren," p. 5646.

while sometimes important as both supplier and purchaser, was seldom dominant. The prices of such commodities in foreign currencies were determined by world demand and supply and were affected by events in the United States only insofar as these, in turn, affected the amounts supplied and demanded by the United States. Even then, such prices were affected much less than in proportion to the changes in U.S. sales and purchases. Hence, the decline in the foreign exchange value of the dollar meant a roughly proportional rise in the dollar price of such commodities, which is, of course, what did happen to the dollar prices of cotton, petroleum products, leaf tobacco, wheat, and similar items. The aim of the gold policy to raise prices of farm products and raw materials was therefore largely achieved.

The decline in the foreign exchange value of the dollar was initially a product of speculative sale of dollars in the expectation of devaluation—a short-term capital outflow. The decline was sustained by shifts in the demand (by which, as always, we mean demand schedules) for imports and supply (again, supply schedules) of exports produced by the cessation of internal deflation. The resolution of the banking panic and restoration of confidence in the monetary system were accompanied by an increase in velocity, a higher rate of spending, and rising prices. As a result, prices rose in the United States relative to prices in other countries. If the exchange value of the dollar had not fallen, the price rise would have discouraged exports and encouraged imports. Those forces were subsequently reinforced by U.S. purchase of gold at home and abroad.

U.S. purchase of domestic gold involved a reduction in the supply of goods for export, since gold is a potential export good, and hence a reduction in the demand for dollars by holders of other currencies (to buy the domestically produced gold). The purchase of foreign gold involved an increase in the demand for goods for import (namely, gold) and hence in the supply of dollars offered in exchange for foreign currencies (to buy foreign gold). The combined effect was to create a potential deficit in the U.S. balance of payments at the former exchange rate. Given a flexible rate, the potential deficit was closed by a depreciation of the dollar sufficient to generate, through an increase in exports or a decline in imports or a movement of speculative funds, an amount of foreign currencies exceeding the amount demanded for other purposes by enough to pay for the gold.

These effects depended very little on the fact that gold was the commodity purchased. Given a floating exchange rate, essentially the same effects on the dollar prices of internationally traded goods would have followed from the same dollar volume of government purchase of wheat or perfume or foreign-owned art masterpieces, or from the economically equivalent program, adopted after World War II, of building up stock-



piles of foreign-produced strategic goods. Of course, had one of these other commodities been used as the vehicle for the purchase program, gold would have been one of the class of domestically produced goods, export of which was stimulated by the U.S. depreciation of the dollar, and one of the class of foreign-produced goods, import of which was discouraged by the depreciation. Consequently, the hypothetical alternative purchase program would have tended to make the net inflow of gold less or the net outflow of gold more than it otherwise would have been. As it was, the use of gold as the vehicle necessarily meant an accumulation of gold, just as the use of wheat or perfume or foreign-owned masterpieces would have meant an accumulation of that commodity.

The choice of gold as the vehicle did have an important effect on the impact of the program on foreign countries. In the first place—and a corresponding effect would be present for any particular commodity—the program had a special impact on gold-producing countries. In the second place—and this effect would be present only for a commodity serving as the basis of a monetary standard—it had a special impact on gold-standard countries. Being committed to sell gold at a fixed price in terms of their own currency, those countries necessarily experienced pressure on their gold reserves, which in turn necessitated either abandonment of the gold standard or internal deflationary pressure. Entirely aside from the changes in the *relative* demands and supplies of goods they imported or exported arising out of the gold-purchase program, those countries were placed in the position of having to adjust their whole nominal price level.<sup>48</sup>

<sup>48</sup> It may help to put this point somewhat differently in terms of a particular example. Suppose the purchase program had been for French perfumes. Then, given the French internal monetary position, the price of such perfumes in francs would rise, the price in francs of other French exports would tend to fall (since the depreciation of the dollar would make them more expensive to Americans in dollars and hence reduce the quantity demanded at the former franc price), and the price in francs of goods imported into France from the U.S. would also tend to fall (since the depreciation of the dollar would reduce the franc equivalent of the former dollar price). Nothing can be said about the remaining prices: some might remain constant, some fall and some rise, depending on their substitutability in consumption and production for other exports and imports.

Now let the purchase program be for gold, either a program to spend a fixed number of dollars per month for gold, or to buy a fixed number of ounces per month at the market price in dollars, or to buy whatever number of ounces would be offered at a fixed dollar price higher than the prior market price, or any combination of these programs. Let France be on a gold standard and be the only country on a gold standard. Suppose, first, that France takes whatever measures are necessary to preserve her gold reserves intact and hence to force all U.S. gold purchases to be made elsewhere. This could occur through a general deflation of all French prices sufficient to make the depreciation of the dollar vis-à-vis the franc enough greater than its depreciation vis-à-vis other (nongold-standard) currencies so that the fixed franc price for gold, times the dollar price of the franc, yields a dollar price of gold above (or just equal to) the market price of gold in other

The device used to achieve a decline in the exchange value of the dollar—borrowing funds (through the issue of RFC securities) to purchase gold—was not unprecedented. The identical device was incorporated in the Resumption Act and employed before 1879 but that time for precisely the opposite purpose: to promote a rise in the exchange value of the dollar. In discussing that episode, we pointed out that the mechanical as opposed to the psychological effects of the accumulation of a gold reserve rendered resumption more rather than less difficult. The reasons are precisely those just given to explain why the gold purchases contributed to the decline in the exchange value of the dollar. In the one case as in the other, it is doubtful that the device was nearly so important as the less dramatic forces that were at work beneath the surface, but this is clearer in the 1879 episode when the device worked against the objective than it is in the 1933 episode when it fostered the objective.

A major obstacle to using gold as a vehicle for lowering the exchange value of the dollar and thereby raising prices was the existence of the so-called gold clause in many government and private obligations and in private contracts. That clause, whose use dated back to the greenback period after the Civil War, required payment either in gold proper, or in a nominal amount of currency equal to the value of a specified weight of gold. It was designed precisely to protect lenders and others against currency depreciation. The clause, if honored, would have multiplied the nominal obligations of the federal government and of many private borrowers for interest and principal of debt by the ratio of the new price of gold to the old price of gold. Also it would have reduced the stimulating

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currencies, times the price of those currencies in dollars. It would then be cheaper for the U.S. to buy gold in those other countries than to acquire it from France at the fixed franc price. France would have avoided a reduction of her gold reserve at the cost of undergoing a general deflation. However, even if we ignore the costs of the deflationary process, this involves a greater adjustment than is appropriate. At the lower nominal price level in France, the former gold reserves would now have a greater value in terms of goods and services. Hence, it would be appropriate for France to make part of the adjustment through a reduction in gold reserves measured in ounces of gold.

This final point makes clear how the adjustment would tend to occur if all countries except the U.S. were on a gold standard. The extra gold demanded by the U.S. would be provided both from new production and by a reduction in reserves that would otherwise have been held, matched by a reduction in the price level in terms of gold in the rest of the world.

For the United States, the primary effect of the existence of some gold-standard countries or of all other countries' adherence to the gold standard would be a change in the magnitude of the depreciation of the dollar in terms of foreign currency, since the depreciation would have to be enough to offset not only the change in "real" demands and supplies produced by the purchase program but also the decline in the general level of prices in terms of gold in the rest of the world. If the program selected provided for spending a fixed number of dollars per month on gold, there would be a secondary effect arising out of the fact that the same number of dollars expended would buy different quantities of gold.

effects on private activity of the reduction in the ratio of debt to income which, it was hoped, would result from currency depreciation. Accordingly, a joint resolution was introduced into Congress on May 6 and passed on June 5, 1933, abrogating the gold clause in all public and private contracts, past and future. In February 1935, the Supreme Court, by a five-to-four decision, in effect upheld the constitutionality of that resolution.<sup>49</sup>

At the outset, the gold policy was one of two mutually inconsistent policies with respect to the monetary standard simultaneously pursued by President Roosevelt. The other was the organization of a World Monetary and Economic Conference which convened in London, June 1933. President Hoover had set in train the arrangements for the convocation of the conference in May 1932, and it was originally scheduled to be held in January 1933. The aim of the conference was to achieve cooperative action on international economic problems, and hopes were high that it would produce an agreement stabilizing foreign exchange arrangements. But the conference was nearly a complete failure. One reason was that, while it was in process, the President apparently decided definitely to adopt the path of currency depreciation. He sent a message to the conference on July 2, 1933, which dissociated the United States from any attempt to achieve what was described as a "temporary and probably an artificial stability in foreign exchange on the part of a few large countries" and was termed a "specious fallacy."<sup>50</sup> The message was at the time given much of the public blame for the failure of the conference. However, whatever the President might have said and however consistent U.S. policy might have been, it seems dubious that the economic preconditions existed for a viable exchange stabilization agreement. The fundamental difficulties were the probable incompatibility of the exchange rates of the sterling bloc and of the nations that still remained on gold, and the unwillingness at the time of the gold-bloc countries to change their gold parities.

The period of a variable price for gold came to an end on January 31, 1934, when the President, under the authority of the Gold Reserve Act passed the day before, specified a fixed buying and selling price of \$35 an ounce for gold, thereby devaluing the gold dollar to 59.06 per cent of its former weight. Under the terms of the act, title to all gold coin and bullion was to be vested in the United States; all gold coins were to be withdrawn from circulation and melted into bullion and further gold

<sup>49</sup> The Court upheld the right of Congress to abrogate the gold clause in private, state, and city obligations, but not in those of the U.S. government. The Court, however, denied the claim of a plaintiff for a judgment for \$16,931.25 in legal tender currency on his U.S. government bond of \$10,000, on the ground that he had not shown any loss whatever in relation to purchasing power.

<sup>50</sup> Message reproduced in Paris, *Monetary Policies*, pp. 166-167.

coinage was to be discontinued; the Secretary of the Treasury was to control all dealings in gold; and the President was authorized to fix the weight of the gold dollar at any level between 50 and 60 per cent of its prior legal weight.<sup>51</sup>

Since the Treasury had formerly valued its own gold holdings at \$20.67 an ounce and paid only that price for the gold it acquired from private individuals, commercial banks, and the Federal Reserve System, it realized a large "paper" profit from the revaluation of the dollar; which is to say, the Treasury could print additional paper money entitled "gold certificates" to a nominal value of nearly \$3 billion without acquiring additional gold and yet conform to the legal requirement that it hold a specified weight of gold (now less than before) for each dollar printed. Those gold certificates could not legally be held by private individuals, but they could be held by Federal Reserve Banks. Accordingly, to realize its "profits," the Treasury had to turn over gold certificates to the Federal Reserve System, receiving in return a deposit credit that it could convert into Federal Reserve notes or pay out by check. Stripped of its legal trappings, the economic effect was identical with a simple grant of authority to the Treasury to print and to put in circulation nearly \$3 billion of fiat currency in addition to the \$3 billion in greenbacks already explicitly authorized by the Thomas Amendment to the Agricultural Adjustment Act.<sup>52</sup>

<sup>51</sup> The President requested the legislation in a message to Congress on Jan. 15, 1934. He recommended vesting title to all gold in the United States in the government for three reasons: (1) to end use of gold as a means of payment; (2) to limit transfer of gold bullion to settlement of international balances; (3) and to give the government ownership of any added dollar value of the country's gold stock as a result of a decrease in the gold content of the dollar.

On the same day an executive order regulating transactions in foreign exchange reaffirmed the regulations in the order of Apr. 20, 1933, requiring a Treasury license for every transaction in foreign exchange, for transfer of credit between banks in and outside the United States, and for export of any legal tender currency from the United States. But the order specifically excluded from the license requirement foreign exchange transactions for usual business purposes, for reasonable travel expenses, for fulfillment of contracts in existence before Mar. 9, 1933, and for transfers of credit between banks in the Continental United States and banks in its possessions. The authority of the Treasury and its agent, the Federal Reserve Banks, to require complete information on every foreign exchange transaction was reaffirmed, as was the Treasury's power to prohibit types of transactions not approved.

On Jan. 16, 1934, the function of buying gold of domestic origin was transferred from the RFC to the Federal Reserve Banks. The weight of the gold dollar, as fixed in the Presidential proclamation of Jan. 31, 1934, was 15.238+ grains of standard gold 0.900 fine (or 13.714+ grains of pure gold), which is 59.06 per cent of the weight of the old gold dollar fixed at 25.8 grains of standard gold 0.900 fine (or 23.22 grains of pure gold). An ounce troy equals 480 grains. The new price of gold, \$35, is obtained by dividing 480 by 13.714+, as the old price, \$20.67, is obtained by dividing 480 by 23.22.

<sup>52</sup> The legal trappings do raise a problem in getting an economically meaning-

Of the paper profit, \$2 billion was assigned to a stabilization fund set up under the control of the Secretary of the Treasury and authorized to deal in gold, foreign exchange, securities, and other credit instruments for the purpose of stabilizing the exchange value of the dollar.<sup>65</sup>

Since February 1, 1934, the official price of gold has remained fixed at \$35 an ounce. In this sense, that date marked the return to a gold standard. But the gold standard to which the United States returned was very different, both domestically and internationally, from the one it had left less than a year earlier. The Mint has since bought all gold offered to it at the price of \$35 an ounce but sells only for the purpose of foreign payment. As noted, the holding of gold coin and bullion is forbidden to private individuals in the United States, except for use in industry and the arts and for numismatic holdings, and gold no longer circulates domestically. The Federal Reserve continues to have a gold reserve requirement, but the state of the reserve has not been a direct influence on policy at any time since 1933, though it has threatened to become one since a sharp decline in the U.S. gold stock began in 1958. For example, when, in 1945, the System was approaching the then existing requirement (40 per cent for notes and 35 per cent for deposits), the law was changed to require a uniform 25 per cent.

Fixed buying and selling prices for gold have no longer been the major reliance for maintaining rigid exchange rates with other currencies, even those of countries nominally on gold. Instead, a new central bank organ was created, the stabilization fund, with powers to engage in open market purchase and sale of foreign exchange and nonmonetary gold to influence exchange rates. During the late thirties, most of the so-called gold-bloc countries finally left gold, and nominally floating exchange rates with government speculation through stabilization funds became the rule.

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ful breakdown of high-powered money, by assets of the monetary authorities. One division that seems economically significant is between commodity money (the monetary gold stock) and fiduciary money (the balance). So long as the price of gold is unchanged, this division is fairly clear and meaningful. The change in the price, however, raises difficulties. If all the gold is revalued at the new price, the arithmetic makes the increase in price appear as a sudden rise in the commodity component of high-powered money and a decline in the fiduciary component. Economically, there is no such change. Hence our gold stock figures, in the breakdown of high-powered money, by assets of the monetary authorities, are expressed at cost, which means that the paper profits are kept as part of the fiduciary component of high-powered money, but subsequent acquisitions at the higher price are included in full in the commodity component. See also Chap. 5, above, pp. 209-212.

<sup>65</sup> Of the balance of the paper profit, \$645 million was used for the redemption of national bank notes, which simply substituted one form of fiduciary currency for another; \$27 million was transferred to the Federal Reserve Banks for making industrial loans; \$2 million was charged off to losses in melting gold coins; and \$141 million remained in the General Fund cash balance (see Paris, *Monetary Policies*, p. 29).

During the war, many countries fixed "official" exchange rates but sought to maintain them by extensive control over foreign exchange transactions, imitating the devices developed by Schacht for Germany in the 1930's, rather than by free purchase or sale at fixed prices of either gold or foreign exchange. Since then, an even wider variety of actual arrangements has coexisted.

Perhaps the best description of the role of gold in the United States since 1934 is that, rather than being the basis of the monetary system, it is a commodity whose price is officially supported in the same way as the price of wheat, for example, has been under various agricultural programs. The major differences are that the support price for agricultural products is paid only to domestic producers, the gold-support price to foreign as well as domestic; the agricultural products accumulated are freely sold at the support prices to anyone, the gold only to certain foreign purchasers and not to any domestic ones. In consequence, the gold program has set a floor under the world price of gold in terms of dollars.

The substitution in January 1934 of a fixed price for gold, rather than a variable price as under the earlier purchase program, meant that the number of dollars spent on gold was no longer under the direct control of U.S. authorities. Having fixed the price, they were committed to buy all that was offered. But the effects of such purchases were the same as under the earlier program. For the United States, the purchases meant an increase in the dollar value of other exports relative to the dollar value of imports, thanks to a rise in prices of internationally traded goods relative to domestic goods through the combined effect of changes in exchange rates and in domestic price levels of the various countries. For gold-producing countries, the purchases meant an increased price for one of their products, hence an expansion in the gold industry relative to other industries and a rise in income. For gold-standard countries, the price fixed for gold by the United States determined the rate of exchange between their currencies and dollars. They either had to adjust their internal price level to that new rate—in the process presumably disposing of some of their reserves as measured in ounces of gold—or to change their own fixed price for gold. For all gold-standard and gold-producing countries except the United States and for nongold-standard and nongold-producing countries, the gold purchases meant a reshuffling of international trade in response to a decreased U.S. demand for products other than gold, and an increased demand for such products by gold-producing countries; the program meant an increased supply of products from the United States and a decreased supply from gold-producing countries. Finally, international trade had to adjust to measures adopted by gold-standard countries to meet loss of their reserves.

The price fixed for gold initially overvalued the product, of course,

and therefore stimulated a rapid increase in production and a rapid accumulation of government stocks. Production in the United States including its possessions rose from less than 2.6 million ounces in 1933 to 6 million in 1940; in the world, from 25 million ounces in 1933 to 41 million in 1940. The rise in prices of other commodities and services since 1940 has lowered the relative price of gold and reduced U.S. gold output (1960) below its 1933 level, though world output still exceeds the level of that year. The gold stock in the Treasury rose from 200 million ounces when the support price was fixed in early 1934 to 630 million ounces by the end of 1940, a rise that was  $1\frac{3}{4}$  times as much as aggregate world output during the intervening period. The gold stock declined somewhat during the war, then rose to an all-time high in 1949. By the end of 1960 it had fallen again to about 510 million ounces, still about  $2\frac{1}{2}$  times its level when the fixed price was established.

In purchasing gold, as in purchasing agricultural or other commodities, the U.S. government can be said to have three proximate sources of funds:<sup>54</sup> tax receipts, borrowing, or creation of money.<sup>55</sup> The one difference is that the support program for other commodities (excepting silver, for which see below) carries with it no authorization to create money, whereas the support program for gold does, thereby automatically providing the financial means for its continuance. Treasury deposits at Federal Reserve Banks can be increased through gold purchases by gold certificate credits equal to the amount of gold purchased times the official price of gold. Except for a minor handling charge ( $\frac{1}{4}$  of 1 per cent), this has also been, in practice, the amount the Treasury spent by drawing a check on its deposits in acquiring gold. Gold purchases are usually financed in this way; hence, increases in the gold stockpile produce no automatic budgetary pressure. The link between gold purchases and Treasury authorization to create high-powered money is, of course, the main remnant of the historical role of gold, and still serves to give gold some special monetary significance. The one important occasion when a different method of finance was used was in 1937, when the Treasury "sterilized" gold by paying for gold with funds raised through security issues (see Chapter 9, section 3).

It is easier to describe the gold policy of the United States since 1934 than it is to describe the resulting monetary standard of the United States.

<sup>54</sup>The word proximate is intended as a warning of the oversimplification involved in associating particular expenditures with particular receipts.

<sup>55</sup>It might be more meaningful to describe the two latter as borrowing in interest-bearing form and borrowing in noninterest-bearing form. More fundamentally still, money creation may itself be either borrowing (if prices are not raised thereby) or taxation (if prices are raised). See Friedman, "Discussion of the Inflationary Gap," *Essays in Positive Economics*, University of Chicago Press, 1955, p. 257; also, above, Chap. 2, footnote 64, and Chap. 5, footnote 35.

It is not a gold standard in the sense that the volume of gold or the maintenance of the nominal value of gold at a fixed price can be said to determine directly or even at several removes the volume of money. It is conventional to term it—as President Roosevelt did—a managed standard, but that simply evades the difficult problems of definition. It is clearly a fiduciary rather than a commodity standard, but it is not possible to specify briefly who manages its quantity and on what principles. The Federal Reserve System, the Treasury, and still other agencies have affected its quantity by their actions in accordance with a wide variety of objectives. In principle, the Federal Reserve System has the power to make the quantity of money anything it wishes, within broad limits, but it has seldom stated its objectives in those terms. It has sometimes, as when it supported bond prices, explicitly relinquished its control. And it clearly is not unaffected in its actions by gold flows. So long as the exchange rate between the dollar and other currencies is kept fixed, the behavior of relative stocks of money in various countries must be close to what would be produced by gold standards yielding the same exchange rates, even though the mechanism may be quite different. Perhaps a “discretionary fiduciary standard” is the best simple term to characterize the monetary standard which has evolved. If it is vague and ambiguous, so is the standard it denotes.

The rise in the dollar price of gold-bloc currencies was at first much greater than that of currencies not linked to gold. From January 1933 to September 1934 the rise was 70 per cent for the currencies of France, Switzerland, Belgium, the Netherlands, and Italy, and less than 50 per cent for the pound sterling. The gold-standard currencies therefore appreciated not only relative to the dollar but also relative to other currencies. The differential appreciation measured the special impact of our gold price-support program on the position of the gold-standard countries. The fact that they lost gold meant that they bore, as it were, a larger part of the effect of the expansion of U.S. exports and contraction of U.S. imports other than gold than other countries did, and thereby cushioned the initial impact on those other countries.

As we have seen, had nothing else intervened, the gold-standard countries would have had to reduce their internal price levels relative to those of other countries in order to stay on gold, which is to say, in order to render something like the new structure of exchange rates consistent with no pressure on the balance of payments. In fact, something else did intervene, but it intensified rather than eased the problem of the gold-standard countries. Gold purchases under the fixed price-support program coincided with a flight of capital to the United States from Europe largely induced by political changes: first, the rise to power of Hitler in Germany which led to a large-scale attempt to transfer capital



out of Germany, particularly by Jews; then the increasing fears of war which led to a flight of capital from France, Britain, and other European countries.

Since the flight of capital constituted an increased demand for dollars, its effects on exchange rates and on U.S. trade in commodities and services other than gold were in precisely the opposite direction to those of the gold price-support program and tended to offset them.<sup>56</sup> There was simultaneously an increased offer of dollars for gold on the part of the U.S. government and an increased demand on the part of foreigners for dollars to hold. By trading assets held abroad for gold and transferring the gold to the U.S. Treasury, foreigners could acquire dollars and the Treasury could acquire gold without in any way affecting the rest of the U.S. balance of payments. To the extent that such offsetting occurred, the gold program did not affect U.S. trade currents and the relative prices of internationally traded goods in the United States in ways described earlier. Since such changes in trade currents and relative prices tended to reduce the amount of gold offered for sale to the United States at its fixed price, the capital inflow meant that this country acquired a larger amount of gold at \$35 an ounce than it otherwise would have. Hence, while the capital inflow and the gold price-support program had opposite effects on U.S. exchange rates and on U.S. trade in commodities and services other than gold, both tended to raise its gold stock.

For gold-standard countries that were themselves subject to a capital

"If the U.S. had continued its floating exchange-rate policy of 1933 and had fixed no firm price at which it was willing to buy the world's gold, the capital flight would have produced an appreciation of the U.S. dollar relative to other currencies, which would have discouraged exports from the U.S. and encouraged imports into the U.S. That outcome would have produced the unfavorable balance of trade required as the physical side of the capital import—and incidentally, would have worked against one of the domestic objectives of New Deal policy, namely, to raise exports relative to imports as a means of stimulating employment. If, instead, the U.S. and other countries involved had all been on a gold standard of the nineteenth century variety, the attempt to transfer capital to the U.S. would have increased gold reserves in this country, even without a rise in the dollar price of gold, and decreased gold reserves abroad; it would have increased proportionately the money stock in the U.S. and thereby have promoted a rise in domestic prices and income; and it would have decreased the money stock abroad and thereby have promoted a fall in prices and income in foreign countries. These changes would have tended to produce precisely the same shift in relative prices and the same unfavorable balance of trade as the appreciation of the dollar under the hypothetical floating exchange rates would have done.

To avoid misunderstanding, we should record explicitly that the actual working out of the adjustment might be—and in our opinion would be—very different under floating and rigid rates for reasons that are outlined in a different connection in Friedman, "The Case for Flexible Exchange Rates," *Essays in Positive Economics*, pp. 157–203. Nevertheless, the character of the adjustment required would be identical; the difference—and in some contexts an essential difference—is the efficiency of the mechanism of adjustment.

outflow—that is, for all the important so-called gold-bloc countries that had remained on gold after 1933—the capital outflow reinforced rather than offset the effect of the gold price-support program. It required an additional reduction in internal price levels beyond that called for by the support program. Exports had to be still larger relative to imports if they were to finance the capital outflow without a continued outflow of gold.

The deflation that would have been required by the combined effect of the U.S. gold price-support program and the capital outflow was more than the gold-bloc countries were willing to undergo, as perhaps the effect of either alone might also have been. Accordingly, in the fall of 1936, France and Switzerland devalued their currencies in conjunction with a tripartite agreement between the United States, France, and Great Britain. Other gold-bloc countries either followed suit or abandoned the gold standard.

There is no direct way to separate the opposite effects on U.S. international trade of the capital flight and the gold-price support program; one can only record their combined effect on international trade together, of course, with the effect of still other factors, such as the changing level of business activity. On the whole, however, Table 20, which summarizes the combined effect, suggests that the gold price-support program was quantitatively more important than the flight of capital in its effects on U.S. international trade for the years 1934–39 as a whole. The evidence is, however, somewhat mixed, and this conclusion must therefore be regarded as highly tentative.

The chief ambiguity in the evidence is in the balance-of-payments figures in the first two parts of the table. As we have seen, the gold price-support program alone would have tended to produce an increase in the U.S. balance of trade in commodities and services other than gold, through either exchange rate changes, or changes in international prices sufficient to lower U.S. prices relative to foreign prices when both were expressed in a common currency.<sup>67</sup> The capital inflow alone would have acted in the opposite direction. Because of errors in balance of payments figures, it is by no means clear what actually happened. Lines 1 and 5 give the balance of trade estimated directly from figures on imports and exports, line 1 in absolute amounts, line 5 as a percentage of national income to adjust for both price changes and changes in the size of the economy. To judge from these statistics, the balance of trade was substantially lower for 1934–39 as a whole than for the decade of the twenties, and a trifle lower than for the depression years 1930–33. Lines 2 and 6 give the balance of trade as estimated indirectly from figures on capital and gold movements; the difference between the estimates in line 1 and line 2 is

<sup>67</sup> Note that this is consistent with a rise in the absolute level of U.S. prices if the exchange value of the dollar depreciates.

the item labeled "errors and omissions" in the official figures published on the balance of payments. These errors and omissions are sufficiently large to reverse the direction of difference. Lines 2 and 6 show the balance of trade as noticeably larger in 1934-39 than in either the twenties or 1930-33 (in line 2, the balance of trade is equal to that in the twenties, but since prices were lower, it was decidedly larger in real terms). Lines 1 and 5 imply that capital flows were quantitatively more important; lines 2 and 6, that the gold-purchase program was more important.

We are inclined to put more weight on the evidence from lines 2 and 6 than on that from lines 1 and 5, for two reasons. First, an examination of the sources of error in the figures suggests that the indirect estimates are likely to be more accurate than the direct estimates.<sup>58</sup> Second, as we shall see below, the price data rather unambiguously indicate that the gold-purchase program was the more important. As it happens, the estimates in line 6 are also the ones comparable to those we have used in our several charts showing the relation between relative prices and capital movements (Charts 9, 17, and 36).

From the estimates for the three years 1934-36, mostly before French and Swiss devaluation, and the three years thereafter, 1937-39, the dominance of the gold-purchase program appears to be clearly greater in the second period than in the first. By providing gold, as it were, from their monetary balances to exporters of capital, the gold-standard countries facilitated the direct offsetting of the capital and the gold movements described earlier. Indeed, the figures for both lines 5 and 6 indicate that, during the earlier years, the capital movement had more impact on the balance of trade than did the gold flow.

The price data in the third section of Table 20 indicate that the gold program was more important than the capital flow, despite the divergent movement of prices in different countries, mostly reflecting the impact of different dates of devaluation. Though many other forces may in principle affect relative prices, these other forces have in practice been quite minor. In the whole period from 1879 to 1914, for example, when both Britain and the United States were continually on gold, the price ratio like that in Table 20 (given annually in Table A-4, column 1, for 1871-1960) varied only between 90 and 106, and some of that variation, as we have seen, can be accounted for by capital movements. Hence, these

<sup>58</sup> See *Balance of Payments, 1949-1951*, Office of Business Economics, 1952, pp. 115-117. What is in question is whether errors and omissions are to be interpreted as primarily unrecorded capital items or unrecorded trade and service items. If the former, the estimates in line 1 should be more accurate; if the latter, the estimates in line 2 should be more accurate. It should be noted that our inclination to accept the latter interpretation is contrary to the most widely held view.

price ratios are sensitive and accurate indicators of the effects of monetary changes and of such major factors as the gold program and the capital flow.

To judge from implicit prices in the United States and cost-of-living indexes for Britain, France, and Switzerland, U.S. prices, adjusted for changes in exchange rates, were lower relative to prices in other countries after 1933 than in either the twenties or 1930-33. This is the result to be expected if the gold price-support program had a greater effect than the capital inflow had.

The difference between British prices, on the one hand, and French and Swiss prices, on the other, before the French and Swiss devaluation in 1936 reflects the disproportionate initial impact of the gold-purchase program on France and Switzerland referred to above: their gold losses implied a large balance of payments deficit reflecting high prices internally relative to U.S. prices. Once they devalued, the differential effect was eliminated. Had the gold-purchase program alone been operating, one might have expected a decline in the ratio in the table for Britain balancing a rise in the ratios for France and Switzerland—just the reverse of the movements after the British devaluation in 1931. In fact, what happened was that the British ratio stayed roughly the same, while the French and Swiss rose sharply to meet it. The reason is that the capital outflow from those countries affected all alike and tended to raise all those ratios above the level that would have been produced by the gold price-support program alone.

To digress for a moment: in some ways the most striking feature of Table 20 is the greater similarity between the balance-of-payments figures for 1923-29 and those for 1930-33 than between either and those for 1934-39. The first two sets of figures show remarkably little trace of the economic holocaust that was sweeping the world. The United States was supposedly ceasing to lend to the world, yet it exported almost as much capital in absolute amount per year from 1930 to 1933 as from 1923 to 1929 and more as a percentage of national income. The reason is, figuratively, that, given no basic change in conditions of production, the incentives to invest in various countries, or monetary arrangements, the preservation of the general pattern of the figures in Table 20 was precisely the vehicle for the international transmission and coordination of the economic collapse, whatever its initial source. The attempt to change these figures—for example, the attempt by the United States to cease foreign lending—produced repercussions abroad that largely frustrated the attempt and forced this country, as it were, to continue lending.

Of course, had the capital flight occurred in the absence of the gold price-support program, the U.S. balance of trade in commodities and services other than gold after 1934 would have been less than it actually

TABLE 20  
UNITED STATES BALANCE OF INTERNATIONAL PAYMENTS AND RATIO OF PURCHASING-POWER PARITY TO EXCHANGE RATES, 1923-39

|  | 1923-29                                     | 1930-31 | 1932-33 | 1930-33 | 1934-36 | 1937-39 | 1934-39 |
|--|---|---------|---------|---------|---------|---------|---------|
|  | ANNUAL AVERAGE AMOUNT (billions of dollars) |         |         |         |         |         |         |
| Balance of trade in commodities and services<br>other than gold (exports minus imports) lines 1, 2 |   |         |         |         |         |         |         |
| 1. Estimated directly  | 1.07  | 0.74    | 0.34    | 0.54    | 0.16    | 0.78    | 0.47    |
| 2. Estimated from capital movements  | 0.86  | 0.95    | 0.41    | 0.68    | 0.47    | 1.27    | 0.87    |
| 3. Capital inflow minus unilateral<br>transfers to foreign countries                               | -0.84                                       | -0.90   | -0.49   | -0.69   | 0.86    | 0.74    | 0.80    |
| 4. Gold outflow  | -0.02                                       | -0.05   | 0.08    | 0.02    | -1.33   | -2.01   | -1.67   |
|  | AVERAGE PER CENT OF NATIONAL INCOME         |         |         |         |         |         |         |
| Balance of trade in commodities and services<br>other than gold (exports minus imports) lines 5, 6 |   |         |         |         |         |         |         |
| 5. Estimated directly  | 1.32  | 1.03    | 0.78    | 0.91    | 0.33    | 1.09    | 0.71    |
| 6. Estimated from capital movements  | 1.07  | 1.32    | 0.94    | 1.13    | 0.89    | 1.76    | 1.32    |
| 7. Capital inflow minus unilateral<br>transfers to foreign countries                               | -1.03                                       | -1.28   | -1.13   | -1.21   | 1.42    | 1.01    | 1.21    |
| 8. Gold outflow  | -0.04                                       | -0.04   | 0.19    | 0.08    | -2.31   | -2.76   | -2.54   |

(continued)

TABLE 20 (concluded)

|  | MONTHLY AVERAGES (per cent) |  |                                     |  |
|--|-----------------------------|--|-------------------------------------|--|
|  | 1923-29                     | Jan. 1930 to<br>Aug. 1937<br>Before<br>Britain Abandoned<br>Gold | Sept. 1937 to<br>Dec. 1933<br>After | Jan. 1934 to<br>Sept. 1936<br>Before<br>France and Switzerland<br>Devalued |
| 9. Ratio (1929 = 100) of purchasing-power parity to exchange rates, U.S. implicit price index relative to: |                             |  |                                     |  |
| a. British cost of living divided by cents per pound   | 98.8                        | 97.4   | 108.2                               | 87.7   |
| b. French cost of living divided by cents per franc  | 112.2                       | 86.9   | 71.6                                | 52.0   |
| c. Swiss cost of living divided by cents per franc   | 100.7                       | 94.2   | 79.4                                | 58.1   |
|  |                             |  | 85.6                                | 80.3   |
|  |                             |  |                                     | 86.6   |
|  |                             |  |                                     | 66.5   |
|  |                             |  |                                     | 69.5   |

NOTE: Because of rounding, there may be discrepancies in the last decimal place.

## SOURCE, BY LINE

- Balance of trade in commodities and services as reported includes excess of gold production over nonmonetary gold consumption (see *Balance of Payments, 1949-1957*, Office of Business Economics, Dept. of Commerce, 1952, pp. 23, 113). Excess obtained by subtracting gold sales (*Balance of Payments, 1958*, pp. 11-12, line 8) from gold outflow (line 4 of the present table) was subtracted from the reported balance (*ibid.*, pp. 11-12, line 23).
- Sum, with sign changed, of lines 3 and 4 of the present table. (Line 2 minus line 1 is the OBE'S "errors and omissions.")
- Ibid.*, pp. 11-12, sum of lines 24, plus 30, plus 41.
- 1923-33: *Banking and Monetary Statistics*, Board of Governors of the Federal Reserve System, 1943, p. 538. 1934-39: *Federal Reserve Bulletin*, 1947-49 issues.

5-8. Same as lines 1-4, except that each item for each year<sup>a</sup> was first divided by national income from same source as for Chart 62.

9. U.S. implicit price index: Same source as for Chart 62. British and Swiss cost of living: *Statistical Yearbook of the League of Nations, 1931/32-1939/40* issues. French cost of living: 1923-June 1931, Oct. 1931-Dec. 1938, *ibid.* (data are quarterly for Paris only); July-Sept. 1931, data from *ibid.* were interpolated to months by average monthly price of 34 household commodities in *Annuaire Statistique, 1946*, France, Institut National de la Statistique, p. 199; Jan.-Aug. 1939, League of Nations data were extrapolated by a quarterly cost-of-living index in *ibid.*, 1940-45, p. 211.

Exchange rates: *Banking and Monetary Statistics*, pp. 670, 680-681.

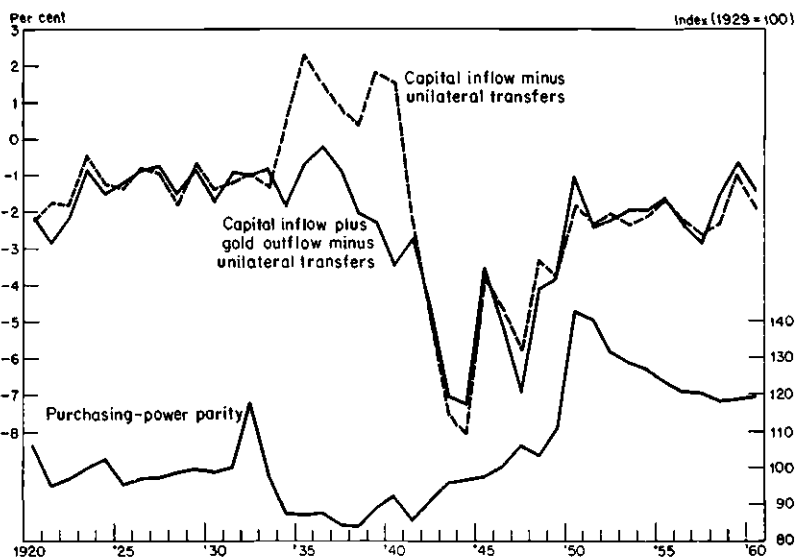
was, and U.S. prices relative to foreign prices would have fallen less than they actually did or perhaps would have risen. This is so because the appreciation of the U.S. dollar relative to other currencies produced by the capital flow would have discouraged exports and encouraged imports. How much less would the balance of trade have been? Since the capital flight itself would have meant an import of gold, the balance of trade would certainly not have been less by more than \$1.67 billion (Table 20, line 4, last column)—but this is so outside a limit that it is of little practical value. Similarly, in the absence of the capital flight, the balance of trade would have been higher, but again no useful estimate of how much higher can readily be made.

If we use the period 1923–29 as a basis of comparison, speak in terms of nominal dollar sums, and neglect other factors, we may summarize the combined impact of the gold price-support program and the capital flight as follows. For the six years 1934 through 1939, the statistics show that the U.S. government was buying some \$1.7 billion per year more in gold than it and its citizens were wont to; and, at the same time, the U.S. economy was reducing the excess of its sales abroad over its purchases abroad of other commodities and services by some \$0.6 billion per year—i.e., selling net that much less or buying net that much more—or holding that excess constant, depending on the treatment of the \$0.6 billion consisting of errors and omissions in the recorded accounts (compare the difference between lines 1 and 2 of Table 20 for 1923–29 and the same difference for 1934–39). The foreign currency to finance that recorded \$2.3 or \$1.7 billion net increase in purchases was provided by a shift from net lending or acquisition of assets by U.S. citizens abroad of \$0.8 billion a year to net borrowings or sale of assets of some \$0.8 billion a year, or by an even larger shift in the same direction if the errors are assigned to the capital items. The shift from the net export to the net import of capital, in its turn, reflected mainly the desire on the part of many foreigners to hold assets in the form of U.S. dollars or U.S. securities rather than in the form of currencies and securities of European nations.

The same evidence is given year-by-year and over a longer period in Chart 36 which shows the relation between relative prices in the United States and other countries, adjusted for exchange rate changes, and capital movements into and gold movements out of the United States (expressed as a fraction of net national product) from 1920 to 1960.

Before 1932, the lines showing capital imports and unilateral transfers alone and this sum plus the gold outflow (or its equivalent, with the opposite sign, the balance of trade in commodities and services other than gold) differ little from one another either in level or year-to-year movements. The capital movements are so much larger in magnitude that they dominate the gold movements. Before 1929 the year-to-year movements of

CHART 36  
 U.S. Net International Capital Movement as a Ratio to National  
 Income, and Purchasing-Power Parity, 1920-60



NOTE: Capital inflow, minus unilateral transfers, is plotted as plus. Gold outflow is plotted as plus.

SOURCE: Table A-4.

both capital and the payments balance show the kind of loose relation to movements in relative prices in the U.S. and Britain that we found for earlier periods (see Charts 9 and 17 above).

From 1929 to 1933, a wide divergence developed between the U.S.-British price ratio and capital movement. The price ratio rose in 1932 to a peak higher than any other value attained since 1871, the year the series starts. The payments balance shows only a mild reflection of the sharp rise in the price ratio and the capital movement alone a still milder one. The reason is that Britain's departure from gold in 1931 and the emergence of a sterling bloc and a gold bloc introduced wide diversity into the world pattern of prices. It is not possible during that period to regard movements in British prices as a reliable index of movements in world prices. This is shown in Chart 51 (p. 586) by the series expressing U.S. prices relative to Swiss prices, which is linked to the U.S.-British series in 1929. There was a sharp divergence between the two from 1929 to at least 1937, when they came fairly close together, only to diverge again after World War II began in 1939. In 1933, U.S. devaluation



produced the same kind of decline in U.S. prices relative to Swiss prices that British devaluation had earlier produced in British prices relative to both U.S. and Swiss prices. For the period from 1931 on, some curve intermediate between the British and the Swiss would seem the appropriate continuation of the earlier U.S.-British price ratio.

After 1932 and particularly after 1933 up to 1941, there was a dramatic divergence between capital movement figures and the figures for the balance of trade in commodities and services other than gold, a divergence of a very much larger order of magnitude than occurred before or since. That divergence represents the unprecedentedly large gold movements produced by the gold-purchase program and the flight of capital from Europe. In relation to the capital movement figures alone, U.S. prices were much lower relative to British, and even more, relative to Swiss prices than during the twenties or later during the forties and fifties. As we have seen, the difference reflects largely the effect of the gold-purchase program. The balance of trade figures alone, on the other hand, show much more nearly the same relation to the relative prices as earlier, if we use a curve intermediate between the British and Swiss.

#### THE SILVER-PURCHASE PROGRAM<sup>59</sup>

The Thomas amendment, passed on May 12, 1933, and containing a provision authorizing the President to reduce the gold content of the dollar, also gave the President sweeping powers with respect to silver. They were hardly used until December 21, 1933, when, disappointed by the effects of the gold-purchase program and under pressure from Senators from silver states as well as other proponents of currency expansion, President Roosevelt used the authority granted by the Thomas amendment to direct U.S. mints to receive all newly produced domestic silver offered to them up to December 31, 1937, at  $64\frac{6}{9}$  cents an ounce (i.e., \$0.6464 . . . an ounce).

The market price of silver was at that time about 44 cents an ounce, or some 75 per cent above the level at the end of 1932 and in early 1933. The rise, only slightly greater than the simultaneous depreciation of the dollar, reflected mostly the effect on all commodities with a worldwide market of the changed foreign exchange value of the dollar. But no doubt it was in part also a speculative rise promoted by expectations, raised by the Thomas amendment as well as by an agreement on silver with other countries reached at the ill-fated London Economic Conference, that the U.S. government would "do something for silver."

The nominal monetary value of silver was, and still is,  $\$12\frac{2}{9}$ , or \$1.2929 . . . an ounce. This value dates from 1792, when the silver dollar

<sup>59</sup> We have drawn heavily on Paris, *Monetary Policies*, in connection with this and with the preceding section.

was defined as containing 371.25 grains of pure silver.<sup>60</sup> But it had not been an effective market price since the gold content of the dollar had been reduced in 1834. From 1834 to 1873, the Mint ratio then established overvalued gold, hence the market value of silver was higher than \$1.29+, and none was coined; the United States, though nominally bimetallic, was effectively on gold (excluding the greenback period). After 1873, when free coinage was not permitted, silver fell in value relative to gold (Chapter 3, footnote 52), a trend that though irregular was interrupted significantly only in 1889-90, thanks to the earlier silver purchase programs of 1878-90 and 1890-93, and again during World War I. Except for World War I, the market price since the turn of the century had generally been less than half the nominal mint value. Since that date, the U.S. government had made no substantial silver purchases, except after World War I to replace silver that had been shipped to India during the war (see above, Chapter 5, footnote 31). Silver had remained in a monetary limbo with respect to new acquisitions: it was used for subsidiary coin, a small volume of standard silver dollars circulated mostly in silver states, and a roughly fixed stock of silver certificates remained as a relic of the earlier silver agitation.<sup>61</sup> The amount of silver in use as coin or as backing for currency both inside and outside the Treasury totaled about 650 million ounces in December 1933 and had a nominal monetary value of \$840 million, of which \$300 million was in the form of subsidiary coin. The total market value of the stock of silver at the time the purchase program began was of course very much smaller, approximately \$285 million, and that figure was some 70 per cent higher than at the end of 1932. The rather bizarre purchasing price of 64<sup>64</sup>/<sub>99</sub> cents an ounce was arrived at by adopting the fiction that silver was being accepted at its monetary value with a seigniorage charge of 50 per cent.

The President's directive to purchase newly mined silver did not stop agitation for further measures on the part either of those interested primarily in silver or of those who saw silver as a useful device for expanding the money stock. Numerous bills were introduced providing for additional action with respect to silver, many coupling that action with the use of the "seigniorage profits" for specific purposes, such as soldiers' bonus, purchase of farm products, and the like. The result was the Silver Purchase Act of June 19, 1934, which closely followed recommendations

<sup>60</sup> An ounce troy equals 480 grains. An ounce of silver is therefore worth 480 divided by 371.25 or \$1.2929 . . . .

<sup>61</sup> The stock of silver dollars and certificates in and outside the Treasury increased from about \$270 million in 1920, when the Treasury began to purchase silver to replace bullion shipped to India during World War I, to \$540 million in 1928, at which amount it remained until the start of the silver-purchase program in Dec. 1933. Silver certificates in circulation fluctuated with changes in the public's demand for currency. The stock of subsidiary silver, as well as amounts in circulation, grew until the 1929-33 contraction.

made by the President in a message of May 22, 1934, and which directed the Secretary of the Treasury to purchase silver at home and abroad until the market price reached \$1.29+ an ounce, or until the monetary value of the silver stock held by the Treasury reached one-third of the monetary value of the gold stock. The Secretary was given wide discretion in carrying out that mandate.

A purchase program under the authority of this and subsequent acts was still legally in effect in 1962, repeated efforts to repeal silver-purchase legislation having been blocked.<sup>62</sup> Under the authority of these acts and the initial and subsequent Presidential proclamations, the Treasury acquired some 3,200 million ounces of silver, approximately half in the four years ending December 31, 1937, and half from then to June 30, 1961.

Of the total, some 110 million ounces was silver that was "nationalized" on August 9, 1934, when the President required all holders of silver, with exceptions for silver being used in the arts and for silver coins, to turn their holdings in to the U.S. Mint at a price equivalent to 50.01 cents per fine ounce, a measure similar to the nationalization of gold and adopted for the same reason: to capture for the government profits expected to result from raising the price of silver.<sup>63</sup>

Another 880 million ounces was newly mined domestic silver. Since the Treasury price for newly mined domestic silver until 1955 was higher than the market price, nearly all domestic silver went to the Treasury and the demand of American silver users was met by foreign silver. From then until November 1961, when the Treasury discontinued sales, the market price approximated the support price, and silver users not only absorbed current output but also purchased from Treasury stocks. The price paid by the Treasury for the newly mined domestic silver varied between 64.64 . . . cents and 90.5050 . . . cents an ounce (corresponding to 30 per cent seigniorage). In April 1935, when the market price rose above 64.64 . . . , reaching a peak of over 81 cents at the end of April, the Treasury twice raised its price, first to a trifle over 71 cents an ounce (corresponding to 45 per cent seigniorage) then to 77.57 . . . cents (corresponding to 40 per cent seigniorage). The market price then fell, par-

<sup>62</sup> On Jan. 22, 1962, President Kennedy requested Congress to repeal silver-purchase legislation under which the government is required to buy all newly mined silver offered to it at the currently fixed price of 90½ cents per ounce. He also called for repeal of the silver transfer tax, under which the government takes 50 per cent of the profit from silver transactions. Legislation embodying the President's request was passed on June 4, 1963, when this book was in press.

<sup>63</sup> The one important difference was the recall of gold but not silver from circulation as coins. The reason for the difference, of course, is that the silver content of coins even when nominally full-bodied, as the silver dollar is, was worth less in the market than the face value, and that of subsidiary silver coins decidedly less. (The weight of silver in a silver dollar equals the face value if silver is valued at \$1.2929 . . . an ounce; for smaller silver coins the weight so valued is less than their face value.)

ticularly sharply at the end of 1935, and reached a level of 45 cents in early 1936, but the Treasury price remained 77.57 . . . cents until December 1937, when it was lowered to the earlier level of 64.64. . . . After the Presidential proclamation authorizing purchases at that level expired in June 1939, an act was passed on July 6, 1939, directing the purchase of all domestic silver offered at a seigniorage charge of 45 per cent. The Treasury's silver purchases dwindled to nearly nothing soon after we entered the war. By the end of 1945 the market price had risen above 71 cents, so on July 31, 1946, an act was passed reducing seigniorage to 30 per cent—effectively establishing a buying price of 90½ cents per ounce for newly mined domestic silver—and authorizing the Secretary of the Treasury to sell nonmonetized (seigniorage or free) silver to domestic industry at not less than 90½ cents per ounce.<sup>64</sup> As noted above, the market price rose by 1955 to the neighborhood of the Treasury support price. From that year until November 1961, sales from Treasury stock pegged the market price at the Treasury support price. The Treasury then announced it would end sales on November 28. Once the Treasury suspended sales, the market price rose above the support price.<sup>65</sup>

The remaining amount purchased by the Treasury, totaling 2,210 million ounces, was silver purchased abroad at prevailing market prices. All in all, total expenditures for silver from December 31, 1933, to mid-1961 amounted to roughly \$2 billion.

In spite of silver purchases of \$2 billion and the accompanying sextupling of the physical quantity of silver in use as coin and currency

<sup>64</sup> During World War II, because of increased industrial demand for silver, some 170 million ounces were sold by the Treasury from nonmonetized silver in the General Fund, under the Green Act of July 12, 1943, for industrial uses and for Philippine coinage. The act expired on Dec. 31, 1945. In addition, over 900 million ounces were loaned temporarily to war industries for nonconsumptive electrical use. Some 410 million ounces were lend-leased to India and other countries to be returned within five years after the signing of the Japanese Peace Treaty in April 1952. All but 15 million ounces had been returned by the end of 1961.

Under the act of 1946, 138 million ounces were sold to industry, mostly after 1958. The reduction of the stock of nonmonetized silver held by the Treasury from nearly 200 million ounces at the end of 1958 to 22 million ounces when sales were suspended in 1961 reflected, in addition to sales to industry, withdrawals for subsidiary silver coinage.

<sup>65</sup> Within a few weeks after the order suspending sales was issued, the market price rose to \$1.04¾. After declining somewhat in early 1962, the price rose to \$1.09 during Aug. 1962, the highest price since Aug. 1920, when the Treasury was in the market to buy silver to retire Pittman Act certificates (see Chap. 6, footnote 60), and by June 1963, when this book was in press, to within 1½ cents of the monetary price of \$1.2929. . . . When and if the market price of silver reaches the monetary price, under existing law it will be pegged close to that price by Treasury redemption of silver certificates, so long as the Treasury's silver stock holds out, and by melting down of coined silver dollars.

or held by the Treasury, the U.S. silver program never came close to achieving either of the objectives specified in the 1934 Silver Purchase Act: a market price equal to the monetary value of \$1.2929 . . . , or a ratio of the monetary stocks of silver and gold of 1 to 3. The market price of silver in 1960 was about 91.4 cents an ounce and had never been much higher between 1934 and 1960.<sup>66</sup> The rise from 25 cents an ounce at the end of 1932 was larger than the concurrent rise in wholesale prices in general, but not by much. In 1960, the price of silver was 3.7 times the end-of-1932 level; wholesale prices, 2.9 times. The ratio of monetary silver to monetary gold stocks, both at their nominal monetary values, was just over 1 to 5 immediately before the rise in the official price of gold in January 1934; the change in the gold price reduced the ratio to 1 to 9; the heavy silver purchases restored the ratio of 1 to 5 by early 1936; until the war, continued silver purchases on the average just balanced increases in gold stock, so that the ratio fluctuated about that level. Since then the ratio has been dominated by changes in the gold stock. At the postwar peak in the gold stock in 1949, the ratio stood at 1 to 7. By the end of 1960, gold outflow had raised the ratio to 1 to 4.

In terms of its domestic effects, the silver-purchase program, like the gold-purchase program, is best regarded as a price-support program for a particular commodity, or perhaps a combination of a price-support program and a stockpiling program. In contrast with gold and as for wheat, only the price of domestic output has been effectively supported. On the other hand, like gold and in contrast with wheat, purchases have been made of both domestic output and silver drawn from foreign output and stocks. Indeed, two and a half times as much has been purchased from abroad as from domestic output. Again, as with both gold and wheat, the silver program offers dramatic evidence of the high elasticity of supply of stockpiled products and the resulting difficulty of substantially altering their relative prices by a governmental purchase program, even one of very large size relative to initial output. Domestic silver output more than tripled—from under 2 million ounces a month to nearly 6 million—in the four years from the Presidential proclamation of December 21, 1933, to December 31, 1937, the period covered by that proclamation.

As with gold, the one important domestic monetary element in the silver program has been the automatic link between silver purchases and authorization to issue currency. The large so-called seigniorage charge for

<sup>66</sup> From 1957 to 1961 world monetary and nonmonetary consumption of silver rose at an annual rate of 4 per cent, world production at an annual rate of about 1.5 per cent. Prices and output of silver would undoubtedly have been higher in the absence of sales by the U.S. at the support price. World output may be expected to rise at a faster rate in response to the rise in the market price since the Treasury suspended sales.

newly mined silver, and the difference between the monetary value and the market price for foreign silver, have meant that silver purchases increased the authorization to issue currency by a considerably larger sum than the amount paid for the silver. In practice, the Treasury has apparently issued silver certificates equal to the amount actually paid for the silver, and has treated the excess monetary value as a miscellaneous budget receipt.

It is not easy to judge the purely domestic monetary effects of the silver-purchase program. It has involved the printing of additional silver certificates totaling over \$2 billion and so in the first instance has added this much to the stock of money. However, the Federal Reserve System has always been in a position to offset this direct effect, and, as we shall see, the silver purchases to some extent reduced the gold inflow. The additional silver certificates may therefore have been simply a substitute for additional Federal Reserve notes which would otherwise have been printed. In view of the generally passive behavior of the Federal Reserve System, particularly in the period up to the end of 1937 when silver purchases were greatest, it is likely that the truth is somewhere between, and that the silver purchases led to a somewhat more rapid increase in the stock of money than would otherwise have occurred. In any event, the sums involved were small compared to either the total increase in the stock of money or the concurrent inflow of gold.

The effects on the United States other than these monetary effects were twofold. In the first place, the program involved public expenditures to stockpile a commodity and therefore increased federal government outlays—not in terms of budget accounts but in terms of economic effects. The expenditures were not large relative to the government budget. At their highest, from the end of 1933 through 1937, they averaged \$220 million a year (for foreign and domestic silver combined) in comparison with federal government expenditures of the order of \$7 billion a year. However, they were extremely large in comparison with the outlay of the industry they were at least partly intended to help. Total domestic silver output, even valued at the price paid by the Treasury, averaged only about \$40 million a year, 1934–37,<sup>67</sup> and, of course, the excess of that value over the returns which the resources employed could have earned in other ways was much smaller still. Hence, viewed as a measure to “help” silver producers—including in that term not only enterprises producing silver but also persons supplying labor and other resources for production of silver—even the immediate returns from the silver-purchase program involved gross Treasury expenditures of well over \$5, perhaps as much as \$25 or more, for each dollar of return to silver

<sup>67</sup> *Historical Statistics of the United States, Colonial Times to 1957*, Bureau of the Census, 1960, p. 351, Series M-36.

producers, though, for a reason given in the next paragraph, this overstates the net cost of the program substantially.<sup>68</sup> And the long-run effects of the silver-purchase program have surely offset much of this immediate gain, if they have not converted it into a loss, by reducing the monetary use of silver in the rest of the world—a point to which we shall return.

The second effect on the United States, besides the direct effect on the money stock, was on the balance of international payments. Like the gold purchases, the silver purchases involved in effect the offer of dollars for foreign currencies (in order to buy foreign silver), and thereby helped finance the capital inflow into the United States. In the absence of the silver purchases, the potential U.S. payments surplus would have been larger, and hence gold inflows would have been larger as well. Given our gold policy, therefore, silver purchases were to some extent a substitute for gold purchases. This offset reduced both the net cost of the silver program and the amount by which it can be supposed to have increased the stock of money.

The most important effects of the silver program were not these domestic effects—which, though major in relation to the silver industry, were relatively minor in relation to the economy as a whole—but the effects on other countries. The silver program is a dramatic illustration of how a course of action, undertaken by one country for domestic reasons and relatively unimportant to that country, can yet have far-reaching consequences for other countries if it affects a monetary medium of those countries.

China was most affected. At the time, China was on a silver standard, though for minor transactions it also used local currencies of copper and nickel, whose value in silver varied from time to time.<sup>69</sup> Because the exchange value of silver varied relative to gold, China was spared the initial effects of the worldwide depression. Its currency depreciated relative to other currencies, so its internal prices could remain relatively stable despite the fall in world prices. After Britain's devaluation at the end of 1931, and still more after the United States' departure from gold in 1933, the situation changed drastically. China's currency appreciated, the country was subject to the pressure of internal deflation, and it experienced widening economic difficulties. The initial pressure was, of course, felt as a decline in exports relative to imports. The potential deficit in the balance of payments was met by export of silver, which in its turn tended to con-

<sup>68</sup> "Well over \$5" is obtained by dividing \$220 million, peak average annual Treasury expenditures for silver, by \$40 million, annual value of domestic silver output. "Perhaps as much as \$25 or more" is a conjecture that not more than one-fifth of the \$40 million is the excess over the amount that resources employed in silver output could have earned in alternative uses.

<sup>69</sup> See Arthur Salter, *China and Silver*, New York, Economic Forum, 1934, pp. 46-47, 56-57.

tract the internal money supply. The pressure was somewhat eased by the availability of minor copper and nickel coinage which could change in value relative to silver, but it is doubtful that the offset was of major significance.

The U.S. silver-purchase program greatly intensified the pressure on China. As we have seen, from early 1933 to the end of the year the market price of silver rose nearly 75 per cent, and by mid-1935, under the impact of the silver-purchase program, its initial price had nearly trebled. The effect on China's international trade position can perhaps be appreciated best by expressing these figures in terms more familiar to the reader. It was as if, when Britain and the United States were both on the gold standard in the 1920's, Britain had been confronted over the course of two years with a rise in the dollar price of the pound sterling from \$4.86 to nearly \$15.00, resulting from changes in the U.S. gold price, without any change in the pound price at which Britain was obligated to sell gold, and without any substantial change in external or internal circumstances affecting the supply of or demand for products it purchased or sold. The result of the silver-purchase program, of course, was to drain China of silver. Its government imposed the equivalent of an export embargo on silver in an attempt to offset the appreciation of its currency. Not surprisingly, the legal obstacles to export were of no avail. Smuggling drained silver from China as rapidly as legal export had earlier.<sup>70</sup> Finally, in November 1935, China nationalized silver in circulation, officially abandoned the silver standard, and replaced it with a managed fiduciary standard. The new standard specified that a fractional silver reserve be held by the bank of issue, but it gave the public no right to redeem notes or deposits in silver.<sup>71</sup>

The owners of silver benefited, of course, from the high foreign exchange value of silver. Had silver been simply a commodity, the U.S. purchase program would have been a largely unalloyed boon, enabling the holders of silver to sell their stocks at an unexpectedly high price. Because silver served as the monetary base of China, however, students of the period are unanimous that the boon was more than offset by the economic effects of the drastic deflationary pressure imposed on China and the resulting economic disturbances. The deflationary pressure and disturbances, aside from their economic effects, certainly did not contribute to the political stability of China. Much of the limited stock of political capacity had to be devoted first to unsuccessful attempts to prevent the export of silver, then to the sweeping monetary "reform" of 1935. Furthermore, by converting China from a commodity standard effectively to a

<sup>70</sup> See Paris, *Monetary Policies*, p. 66.

<sup>71</sup> See Frank M. Tamagna, *Banking and Finance in China*, New York, Institute of Pacific Relations, 1942, pp. 142-150.



paper standard, the so-called reform rendered it both easier and more tempting to finance later war expenditures by inflationary currency issues. Under pressure of the needs of war and then revolution, China probably would in any event have departed from silver, resorted to paper money issues, and have succumbed to hyperinflation. But there can be little doubt that the effects of U.S. silver policy on China's monetary structure increased the likelihood of those events and speeded up their occurrence.

Though the Chinese experience is the most dramatic, China was by no means the only country affected by the silver-purchase program. Mexico, a major silver producer and user, was led to proclaim a bank holiday in April 1935 because the bullion value of the peso had risen above its monetary value. All coins were ordered to be exchanged for paper currency, and the export of silver money was prohibited. A year and a half later, after the world price of silver had fallen, silver coinage was restored.<sup>72</sup> Similar events occurred in numerous other countries throughout the world. A U.S. Treasury order in May 1935 prohibiting the import of foreign silver coins was of course ineffective. It simply meant that the coins were melted down outside the United States and the bullion shipped in instead of the melting being done, as earlier, in New York.

A policy undertaken as part of a broader program to promote adoption of "a permanent measure of value, including both gold and silver, [as] . . . a world standard," to quote from President Roosevelt's silver message of May 22, 1934,<sup>73</sup> had the effect of a major diminution in the worldwide monetary role of silver.

#### COMPOSITION OF THE CURRENCY

The effect of changes discussed in the preceding sections is in part recorded in the figures on the composition of U.S. currency, 1932-60, in Table 21. From one-sixth of the total currency in circulation, gold has declined to a negligible sum representing gold certificates lost in the course of time, held in numismatic collections, or held illegally. The figures record no coin as in circulation. However, there surely has been some in these same categories, although since 1955, there have been no limits on the possession of gold coin, all such coins having been designated rare coin (see above, footnote 45). Silver, which rose from one-eighth to one-fourth of total currency during the height of the silver-purchase program, has continued to rise in absolute amount but so much less rapidly than the total that it is back to roughly its initial proportion. National bank notes, accounting for over one-eighth of the currency in 1932, have been in the process of retirement since 1935 and are now a

<sup>72</sup> Paris, *Monetary Policies*, p. 71.

<sup>73</sup> As reproduced by Parls, pp. 187-188.

TABLE 21  
COMPOSITION OF UNITED STATES CURRENCY IN CIRCULATION, OUTSIDE THE  
TREASURY AND FEDERAL RESERVE BANKS, SELECTED DATES, 1932-60

| End<br>of<br>June       | Total  | Gold |                   |                     | National<br>Bank<br>Notes <sup>b</sup> | Other<br>Treasury<br>Currency <sup>c</sup> | Federal<br>Reserve<br>Notes |
|-------------------------|--------|------|-------------------|---------------------|--|--|-----------------------------|
|                         |        | Coin | Certi-<br>ficates | Silver <sup>a</sup> |  |  |                             |
| MILLIONS OF DOLLARS     |        |      |                   |                     |  |  |                             |
| 1932                    | 5,408  | 166  | 716               | 640                 | 701                                    | 406  | 2,780                       |
| 1933                    | 5,434  | 34   | 265               | 647                 | 920                                    | 508  | 3,061                       |
| 1938                    | 6,461  | 0    | 78                | 1,612               | 217                                    | 438  | 4,114                       |
| 1945                    | 26,746 | 0    | 52                | 2,565               | 120                                    | 1,142                                      | 22,867                      |
| 1960                    | 32,065 | 0    | 30                | 3,917               | 56                                     | 968  | 27,094                      |
| PERCENTAGE DISTRIBUTION |        |      |                   |                     |  |  |                             |
| 1932                    | 100.0  | 3.1  | 13.2              | 11.8                | 13.0                                   | 7.5  | 51.4                        |
| 1933                    | 100.0  | 0.6  | 4.9               | 11.9                | 16.9                                   | 9.3  | 56.3                        |
| 1938                    | 100.0  | 0    | 1.2               | 24.9                | 3.4                                    | 6.8  | 63.7                        |
| 1945                    | 100.0  | 0    | 0.2               | 9.6                 | 0.4                                    | 4.3  | 85.5                        |
| 1960                    | 100.0  | 0    | 0.1               | 12.2                | 0.2                                    | 3.0  | 84.5                        |

<sup>a</sup> Includes standard silver dollars, silver certificates, Treasury notes of 1890, and subsidiary silver.

<sup>b</sup> After Aug. 1935, national bank notes became liabilities of the Treasury on a par with "other Treasury currency."

<sup>c</sup> Includes minor coin, U.S. notes, and Federal Reserve Bank notes. Before Mar. 1935, Federal Reserve Bank notes were liabilities of the issuing Reserve Banks.

SOURCE: *Circulation Statement of United States Money: 1932-38, Banking and Monetary Statistics*, p. 409; 1945, *Federal Reserve Bulletin*, Aug. 1946, p. 889; 1960, *FRB*, Aug. 1960, p. 883.

negligible fraction of the total. The variety of items under "other Treasury currency," including minor coin, U.S. notes, and Federal Reserve Bank notes, has, like silver, risen in absolute amount but fallen as a fraction of the total from over 7 per cent to 3 per cent. Evidencing the continued centralization of monetary authority, and the shift from a quasi-commodity standard to a dominantly fiduciary standard, Federal Reserve notes have taken up the slack, rising from 51 per cent of currency in circulation in 1932 to 84 per cent in 1960.<sup>74</sup>

<sup>74</sup> The Nov. 1961 order suspending silver sales from the Treasury's nonmonetized stock also directed the Treasury to use the silver cover for silver certificates for future subsidiary coinage and to replace silver certificates consequently retired by Federal Reserve notes. Only \$5 and \$10 denominations were affected by the order. In Jan. 1962, the President asked Congress to authorize the Federal Reserve System to issue \$1 and \$2 Federal Reserve notes to make possible the gradual retirement of silver certificates of those denominations. The authorization was included in the act of June 4, 1963, repealing the silver purchase acts.