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bills the following two weeks, though at the end of the second the Bank raised the bill rate twice, to 1 per cent on February 27, and to 1½ per cent on March 1, in consonance with rises in the discount rate. It also acquired \$25 million of government securities in the first of the two weeks and \$2 million in the second, primarily to enable banks to liquidate by selling government securities instead of borrowing on them.¹³³

In the final two months prior to the banking holiday, there was nothing that could be called a System policy. The System was demoralized. Each Bank was operating on its own. All participated in the general atmosphere of panic that was spreading in the financial community and the community at large. The leadership which an independent central banking system was supposed to give the market and the ability to withstand the pressures of politics and of profit alike and to act counter to the market as a whole, these—the justification for establishing a quasi-governmental institution with broad powers—were conspicuous by their absence.

6. *Alternative Policies*

It is clear that the monetary policies followed from 1929 to 1933 were not the inevitable result of external pressure. At all times, alternative policies were available and were being seriously proposed for adoption by leading figures in the System. At all times, the System was technically in a position to adopt the alternative policies.

To give a clearer idea of the consequences of the policies actually followed, we consider explicitly the alternatives available at three critical periods and what their effects might have been. The periods are: (1) the first ten months of 1930; (2) the first eight months of 1931; (3) the four months following Britain's departure from gold in September 1931. This is followed by an evaluation of the chief justification that has been offered by writers on Federal Reserve history for the policy actually pursued in late 1931 and early 1932, namely, that a shortage of "free gold" greatly inhibited use of the policy alternatives available to the System until the passage of the Glass-Steagall Act at the end of February 1932.

The successive banking crises which followed the first period and occurred during the other two were, as we saw in section 2, each more severe than the preceding. Measures that might have been adequate to cope with the earlier ones would have been inadequate for the later ones. On the other hand, as we shall see, the bond purchases actually made in the spring and summer of 1932, which did halt the decline in the stock of money but were inadequate to prevent a subsequent relapse some months after, would have been more than adequate to cope with the earlier crises. As so often in human affairs, a stitch in time saves nine.

¹³³ Notes, Vol. III, Jan. 16, Feb. 2, 6, 16, 27, 1933; Conversations, Vol. II, Jan. 18, 1933. Quotation from Notes, Vol. III, Feb. 16, 1933.

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JANUARY 1930 TO END OF OCTOBER 1930

None of the arguments later advanced in support of the view that expansionary monetary measures by the Federal Reserve System might have been ineffective or undesirable applies to this period, as noted above. There was no sign of lack of confidence in banks by the public, or of unusual concern by banks about their own safety. Banks were using reserves to the full. Any increase in reserves probably would have been put to use in expanding the assets of banks. Expansionary measures offered no threat to the gold standard. On the contrary, the gold reserve was high and gold inflows persisted. Throughout the twenties, the System had been concerned that it held too large a fraction of the world's gold stock; the only problem about gold that evoked discussion in 1930 within the System was how to repeal the flow. Finally, no serious monetary difficulties had yet arisen abroad.

To evaluate the possible quantitative effect of an alternative policy, let us consider what the effect would have been if the purchase program actually carried out in 1932 had been carried out in 1930 instead; that is, if the System had embarked on a program to raise its security holdings by \$1 billion during the first ten months of 1930. From December 1929 to October 1930, if we adjust for seasonal effects, government security holdings actually rose by \$150 million. If some \$850 million additional government securities had been purchased, high-powered money, instead of declining by \$160 million, would have risen by \$690 million, all of which would have increased reserves, since during the first ten months of 1930 the public reduced its currency holdings. However, changes in other forms of Reserve Bank credit might have reduced the impact of the hypothetical additional purchase. From December 1929 to October 1930, bills bought fell by \$110 million—from \$240 million to \$130 million—and bills discounted fell by \$390 million—from \$590 million to \$200 million. The purchase of \$850 million additional government securities would doubtless have produced an even larger decline in bills discounted and less certainly in bills bought, since banks would have used some of the funds to repay borrowings and there might have been a larger demand for bankers' acceptances. To make rather extreme allowance for such an effect, let us suppose that discounts and bills bought had each been reduced to \$50 million. Even then, the effect of the purchases would have been a rise in Federal Reserve credit outstanding by \$130 million instead of the actual decline of \$490 million, and a rise in high-powered money by \$460 million.

If the deposit ratios had behaved as in fact they did, the change from a decline in high-powered money of $2\frac{1}{2}$ per cent to a rise of $6\frac{1}{2}$ per cent would have converted the actual 2 per cent decline in the stock

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of money into a rise of 7 per cent. Under those circumstances, the deposit ratios might have altered in a direction to offset some of the hypothetical rise in high-powered money. But even very large allowances on this score would hardly change the general conclusion: a rise in the System's security holdings by \$1 billion instead of \$150 million in the first ten months of 1930 would have changed the monetary situation drastically, so drastically that such an operation was almost surely decidedly larger than was required to convert the decline in the stock of money into an appreciable rise.

The change in the monetary situation might have affected the gold movement, reducing the gold inflow or even converting it into a gold outflow. But it would have done that only by its effects on the trend of economic activity and on the state of the capital markets. Only if the change in the monetary climate had lessened the severity of the economic contraction and made the capital markets easier, would it have affected gold flows. But it is precisely the achievement of such results that would have been the aim of the alternative policies. Hence, a reduction in the gold inflow would have been a sign of the success of the alternative policy, not an offset to it.

The hypothetical purchase of government securities would have reduced in two ways the likelihood of a banking crisis like the one in the fall of 1930: indirectly, through its effect on the severity of the contraction; and directly, through its effect on the balance sheets of banks. The indirect effect would have improved the ability of borrowers to repay loans; the direct effect would have meant that bank reserves were rising sharply instead of staying roughly stable. It is impossible to say with any assurance that these effects would have prevented a banking crisis from occurring—though they might have—but it is certain they would have reduced the magnitude of any crisis that did occur and hence the magnitude of its after-effects.

The effects on the capital markets and the reduction in the drain of gold from the rest of the world would have had desirable effects abroad. Again, these might not have prevented the later financial difficulties entirely, but they certainly would have eased them.

JANUARY 1931 TO END OF AUGUST 1931

The early months of 1931 were the next crucial time for monetary policy. The banking crisis had died down, there were signs of returning confidence in banks and of improving conditions in business. We have already suggested (section 2) that a vigorous monetary push at that time might have converted the faint signs of recovery into sustained revival.

Let us suppose that actual policy to the end of 1930, including the first banking crisis, had been what it was, but that in the first eight

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months of 1931 the System had raised its security holdings by \$1 billion instead of \$80 million, after allowing for seasonal changes. During those eight months, currency held by the public rose by \$370 million as a result of the internal drain on the banking system; bank reserves fell by \$120 million. The difference between the rise in currency and the decline in bank reserves, or \$250 million, is the amount by which high-powered money rose. The purchase of \$920 million additional government securities, with no change in bills discounted or bills bought, would have raised high-powered money by \$1,170 million instead, enough to meet the drain of currency that actually occurred and at the same time to increase bank reserves by \$800 million. With such a sizable increase in their reserves, instead of a decrease of \$120 million, banks would have been freed from the necessity of liquidating securities, and could have reduced their borrowing from the Reserve System, instead of increasing it by \$40 million. The bond market would accordingly have been far stronger, bank failures would have been notably fewer, and hence the runs on banks milder if at all appreciable. In consequence, the drain of currency into circulation would have been smaller than it was and the increase in bank reserves would have been even larger than these figures suggest.

To put the matter as before, in terms of the effect on Federal Reserve credit—again assuming that bills discounted and bills bought would each have been reduced to \$50 million—had the System bought an additional \$920 million of government securities during the first eight months of 1931, Federal Reserve credit outstanding would have risen by \$470 million instead of \$40 million. High-powered money, under these circumstances, would have risen by \$680 million or by 10 per cent instead of by 3½ per cent. Even if both the deposit ratios had fallen by as much as they did, the result would have been no change in the stock of money, instead of a decrease of 5½ per cent.

On this occasion, however, effects of the change in the monetary climate on the deposit ratios would clearly have enhanced rather than offset the expansionary effect of the hypothetical open market purchases. Depositors would have been far less eager to convert deposits into currency and banks, to strengthen still further their reserve position. Both deposit ratios would therefore have fallen less than they did. The second banking crisis might indeed never have occurred at all in such a changed monetary environment. Once again a \$1 billion purchase program would have been much greater than needed to change drastically the monetary situation. But even if the second banking crisis had occurred, and even if it had been as severe as it was, the hypothetical open market operation would have completely eliminated its effect on the stock of money.

Again, the change would have produced a reduction in the inflow of gold and might have converted it into an outflow with a resulting easing

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of the financial difficulties in Europe. And again, this must be counted an achievement of the hypothetical purchase program and not an offset.

SEPTEMBER 1931 TO END OF JANUARY 1932

We cited earlier the statement in a System memorandum written in November 1931 that the "foreign and domestic drain upon bank reserves [after Britain's departure from gold] were met in the classic way by increases in discount rates combined with a policy of free lending." The memorandum included a quotation from the *locus classicus* of central bank policy, Bagehot's *Lombard Street*. In fact, however, the System followed Bagehot's policy only with respect to the external drain, not the internal drain. To meet an external drain, Bagehot prescribed a high Bank rate, the part of his prescription the System followed. To meet an internal drain, he prescribed lending freely. "A panic," he wrote, "in a word, is a species of neuralgia, and according to the rules of science you must not starve it. The holders of the cash reserve must be ready not only to keep it for their own liabilities, but to advance it most freely for the liabilities of others."¹³⁹ Despite the assertion to the contrary in the memorandum, the System gave little more than lip service to this part of Bagehot's prescription, either before the external drain or after it ended. True, during the height of the internal and external drain in October, it permitted its discounts and its bills bought to rise sharply. But this was at the initiative of the member banks, in spite of sharp rises in the rates on both, and was a result of the desperate situation of member banks because of the double drain. As we have seen, even after the height of the crisis, the New York Bank reduced bill buying rates only gradually and kept them above market rates, so bills bought declined rapidly. The System took no active measures to ease the internal drain, as it could have done through open market purchases. Contrast its behavior with that reported approvingly by Bagehot:

The way in which the panic of 1825 was stopped by advancing money has been described in so broad and graphic a way that the passage has become classical. "We lent it," said Mr. Harman on behalf of the Bank of England, "by every possible means and in modes we have never adopted before; we took in stock on security, we purchased Exchequer bills, we made advances on Exchequer bills, we not only discounted outright, but we made advances on the deposit of bills of exchange to an immense amount, in short, by every possible means consistent with the safety of the Bank, and we were not on some occasions over-nice."¹⁴⁰

Though the response of the System to the external drain was "classic," it was sharply at variance with the alternative policy the System had de-

¹³⁹ Walter Bagehot, *Lombard Street*, London. Henry S. King, 1873. p. 51.

¹⁴⁰ *Lombard Street*, pp. 51-52.

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veloped during the 1920's, the gold sterilization policy. That policy called not for tightness but for ease to counter the gold drain and, even more clearly, for ease in the period before and after the gold drain to counter the internal drain.¹⁴¹

The System had sterilized inflows and outflows of gold during the twenties. It had more than sterilized inflows from August 1929 to August 1931. Consistent policy called for sterilizing the outflow after September 1931 as well. And the System was in an extraordinarily strong technical position to follow such a policy. Just before Britain's departure from the gold standard, the U.S. gold stock was at its highest level in history, over \$4.7 billion, and amounted to about 40 per cent of the world's monetary gold stock. The System's reserve percentage—the ratio of its gold holdings to its note and deposit liabilities—exceeded 80 per cent in July, averaged 74.7 in September, and never fell below 56.6 in October. At the lowest point, toward the end of October, its gold reserves exceeded legal requirements for cover by more than \$1 billion.¹⁴² And this sum could have been expanded under pressure by \$80 million to \$200 million by simple bookkeeping adjustments.¹⁴³ Further, the Reserve Board had the legal power to suspend gold reserve requirements with negligible sanctions, a power it did in fact invoke in early 1933.

The major short-term balances subject to withdrawal were held by France. French short-term balances, which had been declining since 1929, amounted to \$780 million in January 1931 (out of a total of \$1.8

¹⁴¹ For example, see the memorandum by Benjamin Strong, listing the reasons for the Federal Reserve easy-money policy of 1924, one of which was: "To check the pressure on the banking situation in the West and Northwest and the resulting failures and disasters. . ." (*Stabilization, Hearings before the House Banking and Currency Committee, 69th Cong., 1st sess., Mar.-June 1926: Feb. 1927, pp. 335-336*). One of the tests of Federal Reserve policy, 1922-26, that Strong proposed was the number of bank failures (p. 476). See also Adolph Miller of the Federal Reserve Board on the role of the System in lending to "banks that are in distressed communities" and supplying emergency currency needs (pp. 861, 898-899); and W. R. Burgess, then assistant Federal Reserve agent of the New York Bank, on the powers of the System for stabilization, including "desperate remedies for a desperate emergency" (p. 1019).

¹⁴² In contrast, the System's gold reserve ratio was only 53 per cent at its maximum in 1919 when it permitted inflation to proceed unchecked, and it did not take contractionary action in 1920 until the ratio had fallen to less than 43 per cent.

¹⁴³ Federal Reserve notes in vaults of issuing Federal Reserve Banks were subject to the same collateral and reserve requirements as notes in circulation. On Oct. 31, 1931, there were about \$320 million of such notes in vaults of issuing Banks. According to an internal System memorandum, about \$120 million in vault would have been adequate (Harrison, *Miscellaneous, Vol. I, enclosure, dated Aug. 20, 1931, in letter, dated Aug. 21, Harrison to McDougal*). A reduction of \$200 million would have released \$80 million in required gold reserves held against the notes. If, instead of 60 per cent eligible paper, gold were held as collateral against the notes, an additional \$120 million in gold would have been released from legal requirements.

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billion held by European countries) and by September were around \$700 million.¹⁴⁴ France was strongly committed to staying on gold, and the French financial community, the Bank of France included, expressed the greatest concern about the United States' ability and intention to stay on the gold standard. That accounted for the special volatility of the French balances. As it happened, though the French balances were not withdrawn in October 1931,¹⁴⁵ they were almost entirely withdrawn in the

¹⁴⁴ *Banking and Monetary Statistics*, p. 574. These are estimates of short-term balances held by France and all of Europe in reporting New York banks on Jan. 31, 1931. The peak figures a year earlier were \$890 million and \$2.0 billion, respectively.

¹⁴⁵ Harrison informed the Bank of France in Oct. that, if it did not want to invest its funds in the U.S. money market, he preferred not to hold French deposits in excess of \$200 million. He suggested that it buy gold which would be either earmarked for the Bank of France or exported to France. The French representatives expressed surprise at Harrison's willingness to part with gold, but were not eager to withdraw it at the time because of their fears of possible inflationary effects of gold imports on the French economy and because of the loss of earnings to the Bank of France. It was agreed, however, that the Bank of France would effect a gradual repatriation of a substantial fraction of its balances in New York (Harrison, *Notes*, Vol. II, Oct. 15 and 26, 1931).

Rumors about Harrison's conversations with the French misrepresented their substance: he was said to have requested them not to take more gold from this country and they had not agreed; and he was said to have committed himself to maintain a firm money policy. He denied these rumors in a letter to Governor Meyer:

I have reviewed these matters in some detail only because of the continued and repeated reports of an agreement in the nature of a "bargain" whereby the Federal Reserve Bank of New York surrendered its freedom of action regarding credit or discount rate policies in exchange for a promise from the Bank of France that it would not withdraw its funds from the market. There was not any such agreement, nor any such bargain. The Bank of France is perfectly free at any time it chooses to withdraw its dollar funds. The Federal Reserve Bank of New York is equally free in its credit and discount policies. In fact, there has never been a time in any of my conversations with any central bank when there was any request or even any suggestion that they or we should in any way make a commitment as to any future policy that would in any way destroy or limit our complete freedom of action in our own self-interest.

These statements by Harrison are not necessarily inconsistent with the assertion by E. A. Goldenweiser, who was director of the Board's Division of Research and Statistics at the time: "The Bank of France at that time had large deposits in the United States and it was understood by the authorities that, if bill rates in this country did not advance, these deposits would be withdrawn in gold."

Without France's asking for a commitment and without Harrison's entering into one, the French representatives could still have made it clear that they would regard failure of the United States to raise discount rates as a sign that the United States was not serious about its announced intention to take whatever measures were necessary to stay on the gold standard (Harrison, *Miscellaneous*, Vol. I, letter, dated Dec. 18, 1931, Harrison to Meyer; *ibid.*, letter, dated Dec. 22, 1931, Harrison to Calkins, who evidently had accepted the rumors as truth; E. A. Goldenweiser, *American Monetary Policy*, New York, McGraw-Hill, 1951, pp. 158-159).

spring of 1932.¹⁴⁶ Their withdrawal in October would have made no ultimate difference in the gold position. It would, however, have reduced the System's reserve percentage to about 49 per cent and hence might have had psychological effects somewhat different from those experienced when the balances were actually withdrawn, since the System's reserve percentage did not then fall below 58 per cent. The lowest the reserve percentage ever reached during the 1932 open market operation was 56 per cent (monthly averages of daily figures). Consequently, it seems highly likely that, if a gold sterilization policy had been adopted, gold outflows would have ceased long before the legal reserve ratio was reached, let alone before the gold stock was drastically depleted.¹⁴⁷

Suppose the System had raised discount rates when it did, adopting the "classic" remedy for an external drain, but had accompanied the measure by purchase of government securities as called for by the "classic" remedy for an internal drain and by its earlier sterilization policy. Again, to be concrete, let \$1 billion be the amount of the hypothetical increase in its security holdings. What would have been the consequence?

Between August 1931 and January 1932, currency held by the public rose by \$720 million and bank reserves fell by \$390 million, which means that, as a result of the increase in discounts and other minor changes, high-powered money had risen by \$330 million despite the gold drain. Other items being the same, Reserve purchases of \$1 billion of government securities would have meant an increase of \$1,330 million in high-

¹⁴⁶ French short-term balances with reporting New York banks were, on selected dates, in millions: Sept. 16, 1931, \$685; Dec. 30, 1931, \$549; May 11, 1932, \$304; June 15, 1932, \$102; June 29, 1932, \$49 (*Banking and Monetary Statistics*, pp. 574-575). The statistics include all deposits and short-term securities held by the French at reporting domestic banks and bankers, but they may not include other American short-term liabilities to French citizens, such as bills and short-term securities held for them by agents other than the reporting banks. Hence these figures may underestimate French withdrawals.

Governor Harrison denied that the ultimate withdrawal of French short-term balances reflected French dissatisfaction with the change in Federal Reserve policy in the spring of 1932, though that was widely reported. He said, "[S]ome people might argue that our policy had been responsible for the recent heavy outflow of gold, but we know that it was largely the repatriation of central bank balances which would have been withdrawn in any case" (Notes, Vol. II, June 30, 1932).

¹⁴⁷ Goldenweiser asserts the contrary, writing that "a full-fledged easing policy [by which he clearly means, from the context, low discount rates, rather than open market operations] . . . would have involved a suspension of reserve requirements against Federal Reserve deposits" (*American Monetary Policy*, p. 159). However, Goldenweiser gives no evidence to support his assertion. It may have been the opinion of the authorities at the time, though we have been able to find no internal document in the Goldenweiser Papers or in the Harrison Papers and no reference in the Hamlin Diary indicating that such a policy was ever seriously contemplated or its consequences for the reserve ratio explicitly considered. These documents make the rise in discount rates appear to be more nearly a conditioned reflex than a policy decision reached after full consideration of a range of feasible alternatives.

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powered money. That sum would have provided the whole \$720 million in currency withdrawn by the public and at the same time have enabled bank reserves to increase by \$610 million instead of decreasing by \$390 million, or one-eighth of their initial level. The increase in bank reserves would have permitted a multiple expansion in deposits instead of the multiple contraction that actually took place.

Of course, under these circumstances, banks would have been under far less heavy pressure than they were and would have borrowed less from the Reserve System, thereby offsetting some of the hypothetical increase in high-powered money. However, this offset would have reflected fewer bank failures and a reduction in the public's desire to convert deposits into currency. Hence, the currency held by the public would have risen less than it did. The net effect of these offsetting factors on bank reserves might have been either expansionary or contractionary.

Again, to suggest orders of magnitude, suppose that from August 1931 to January 1932, discounts and bills bought had both remained unchanged instead of the first rising from \$280 million to \$840 million, and the second falling from \$310 million to \$100 million. Even under these assumptions, a purchase of \$1 billion of government securities would have meant a rise in high-powered money by \$650 million more than the actual rise. Even if we couple these assumptions with the further extreme assumption that, under such greatly improved monetary conditions, the deposit ratios would have fallen as much as they did—and for the deposit-currency ratio, the fall in so short a time was the largest on record—the result would have been to cut the decline in the stock of money to less than half the actual decline from August 1931 to January 1932. Only a moderate improvement in the deposit-currency ratio—a decline from 8.95 to 7.10 instead of to 6.47—would, under these hypothetical circumstances, have enabled the stock of money to be stable instead of falling by 12 per cent.

The crises were becoming successively more severe, so this time the \$1 billion we have been using as our standard is not, as in the earlier periods, clearly a multiple of the amount required to turn the monetary tide. But these calculations suggest that an open market purchase of that size would have been adequate. And with so great a change in the monetary tide, the economic situation could hardly have deteriorated so rapidly and sharply as it did.

THE PROBLEM OF FREE GOLD

In the book he published after retiring from the System, from which we quoted above, Goldenweiser analyzed briefly the System's reaction to Britain's departure from gold. After discussing the rise in discount rates in reaction to the external drain, which he terms a "brief return to

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orthodoxy"¹⁴⁸ which "had only passing and temporary effects on the banking system or on the course of the depression," he went on to say, with respect to the internal drain:

More serious was the fact that the System did not extend sufficient aid to member banks through discounting their paper and that it failed to pursue a vigorous policy of purchases in the open market. For this failure of the System to give more help in an emergency the major blame is on the law which prescribed rigid rules for the eligibility of paper for discount and also barred government securities from collateral acceptable for Federal Reserve notes.¹⁴⁹

The problem to which Goldenweiser referred is the so-called free-gold problem. The internal drain had increased the volume of Federal Reserve notes outstanding. The law specified that the System hold against notes a reserve of 40 per cent in gold and additional collateral of 60 per cent in either gold or eligible paper (which consisted of commercial, agricultural, or industrial loans, or loans secured by U.S. government securities rediscounted by member banks; loans to member banks secured by paper eligible for rediscount or by government securities; and bankers' acceptances, i.e., "bills bought" in the terminology of Federal Reserve accounts). Because the System did not have enough eligible paper to furnish 60 per cent of the collateral for Federal Reserve notes, part of the gold in excess of minimum requirements had to be pledged for this purpose. The amount of free gold not needed to meet either minimum gold requirements or collateral requirements was therefore less than the amount of excess gold reserves. The Federal Reserve System, in its *Annual Report* for 1932, and Goldenweiser, in the passage quoted above and elsewhere in his book, assert that the shortage of free gold was an important factor preventing the System from engaging in larger open market purchases, such as the hypothetical purchases discussed in the preceding subsection. Such purchases, they assert, would have reduced eligible paper holdings still further by reducing rediscounts and therefore could have been conducted only to a very limited extent without eliminating free gold entirely. The Glass-Steagall Act of February 27, 1932, disposed of that problem by permitting government bonds in the Reserve Banks' portfolios as well as eligible paper to serve as collateral against Federal Reserve notes in addition to the 40 per cent minimum gold reserve.¹⁵⁰

Our own examination of the evidence leads us to a different conclu-

¹⁴⁸ However, while discount rates were raised at all Reserve Banks in Oct. or Nov. 1931, they were reduced a few months later only in Dallas and Richmond and New York. The reduction in New York was made more than four months after the second rise in Oct. 1931, and brought the discount rate only one-quarter of the way back to the level before the gold drain. Four months later, a second reduction was made in New York to 2½ per cent—only halfway back to the level before the gold drain—where the rate remained until raised again in March 1933.

¹⁴⁹ *American Monetary Policy*, pp. 159-160.

¹⁵⁰ See footnote 26, above, for other provisions of the Glass-Steagall Act.

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sion. Despite the attention it has since received, we do not believe a shortage of free gold excited any major influence on Federal Reserve policy, for five reasons.

(1) The earliest published full-dress discussion of free gold during the 1929-33 contraction we have found is an article by Benjamin Anderson in the *Chase Economic Bulletin* of September 29, 1930. Anderson, a firm believer in the real bills doctrine and an equally firm opponent of open market operations, warned, "There is not enough free gold to justify artificially cheap money."¹⁵¹ We have found no evidence that the article exerted any influence within the Reserve System. In any event, by the time it appeared, New York had already lost its battle for expansionary open market purchases, and the general lines which were to dominate policy until the spring of 1932 had already been set.

(2) The earliest unpublished System document on free gold we have found is a memorandum by Goldenweiser, written on January 3, 1930. He refers to a Board discussion of a statement by Anderson "that free gold was down to \$600,000,000 . . ." (in an address to the American Economic Association and American Statistical Association on December 30, 1929); Anderson concluded, "The Federal Reserve System is nearing the time when it must look to its own reserve . . ." The memorandum makes clear that the Reserve System regularly kept track of free gold, and that its level was not at the time a source of concern to the Board.

The limited attention paid to free gold by the System is suggested by the fact that the earliest mention of free gold we have found in the Hamlin Diary is an entry of July 30, 1931, and in the Harrison Papers, a preliminary memorandum, August 3, 1931, for the meeting of the Open Market Policy Conference on August 11. Both noted that free gold on July 29 totaled \$748 million and that internal bookkeeping adjustments, involving reduction of Federal Reserve notes in the tills of most Reserve Banks to a "reasonable minimum," would have raised the free gold on that date to \$1,086 million.¹⁵² A later memorandum of August 21, 1931, prepared at the New York Bank considered the likely effect on free gold of a variety of alternative hypothetical developments including large-scale open market purchases, internal drain of notes and gold, and an external drain and concluded that, even under rather extreme assumptions, free

¹⁵¹ Anderson had referred to the significance of free gold in a Mar. 14, 1930, article (p. 13), indicating his intention to discuss the subject fully later, as he did in the Sept. 1930 *Bulletin* article, "The Free Gold of the Federal Reserve System and the Cheap Money Policy" (p. 8). W. R. Burgess told the Board that a subsequent article by Anderson on gold (*Chase Economic Bulletin*, Mar. 16, 1931) did much damage abroad to the Federal Reserve System (Hamlin, Diary, Vol. 19, Oct. 30, 1931, p. 173).

¹⁵² See Goldenweiser Papers, Container 1, folder of Confidential Memoranda, 1922-33; *New York Times*, Dec. 31, 1929, which refers to Anderson's address; Hamlin, Diary, Vol. 19, p. 132; Harrison, Open Market, Vol. II.

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gold did not constitute an important limitation on the alternatives available to the System.¹⁵³ The preliminary memorandum for the October 26 meeting of the Open Market Policy Conference noted there had been little change in free gold as a result of the gold outflow. Excess gold reserves had declined from \$1.9 billion on September 16, 1931, to \$1.1 billion on October 21, but free gold reserves had been roughly constant at over \$0.8 billion because of a rise in eligible paper holdings. The preliminary memorandum for the November 30, 1931, meeting did not even refer to free gold, though it did note, "there is still plenty of gold left." After the first of the year, free gold may have fallen as low as \$400 million during January and February 1932, which could have been raised to perhaps \$525 million by bookkeeping adjustments.¹⁵⁴ Hence the actual amount of free gold throughout the whole period was sufficient to have permitted extensive open market operations.

(3) While free gold was alluded to from time to time at meetings of the Conference or of its executive committee or of the Federal Reserve Board or of the New York Bank directors, it was almost always mentioned as a problem by persons who had opposed open market operations all along on other grounds; it was never given as the principal argument against purchases, and the objections raised on this score almost always were immediately countered by figures showing that a shortage of free gold offered no serious limitation to policy.¹⁵⁵ It is impossible to read

¹⁵³ In his letter transmitting the memorandum to all governors, Harrison concluded, "apart from the position of individual Reserve banks the system as a whole has ample funds to deal with any situation within reason which may arise, and that in matters of policy we are probably in a position to do whatever seems wise for the country's economy."

The memorandum stated the immediate effect of the purchase of \$300 million of government bonds would be a reduction of about \$137 million in free gold, leaving the System about \$600 million, which could be increased to more than \$900 million by reducing Federal Reserve notes in vaults of the Reserve Banks. A large increase in the demand for Federal Reserve notes or for gold, according to the statement, would not affect the free gold position because that increase would be accompanied by an increase in Federal Reserve discounts and bill holdings, which would supply eligible paper collateral for Federal Reserve notes and release gold used for that purpose. Gold then in use as collateral, exclusive of free gold, was sufficient to provide a 40 per cent reserve for more than \$3 billion of additional note circulation, or to provide \$1¼ billion of gold for export (Miscellaneous, Vol. I).

¹⁵⁴ Open Market, Vol. II. No continuous figures on free gold during the critical period, Sept. 1931-Feb. 1932, were shown either in the *Annual Report* or *Federal Reserve Bulletin* for 1931 and 1932, and we have been able to find none in any System publication since. Our estimates for Jan. and Feb. 1932 are based on a chart in Federal Reserve Board, *Annual Report* for 1932, p. 17, plus amounts of their own notes held by issuing Banks, p. 91.

¹⁵⁵ At the Aug. 11, 1931, meeting of the Open Market Policy Conference, Governors Calkins and Seay said, in response to Harrison's recommendation of substantial purchases of government securities, their Banks did not hold enough free gold to permit them to participate in further purchases. Governor Harrison

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in full the record of proceedings of the Open Market Policy Conference and of meetings of the New York Bank directors during the period from September 1931 through February 1932 and assign great significance to free gold as a factor determining policy. The closest approach to serious concern was expressed in January and February 1932, when the Glass-Steagall Act was in process of enactment and the problem was on its way to solution.¹⁶⁶ Concern over the gold problem during the period centered

cited the figures on free gold in the memorandum of Aug. 3, 1931, referred to above, and pointed out that "the question to decide was not whether individual banks could, or could not, participate, but to try to agree on a System policy which would be helpful." When the Conference met with the Board later that day, Governor Meyer asked if "there was any danger to the System" in authorizing the executive committee to purchase \$200 million or \$300 million of government bonds. "Mr. Goldenweiser stated that there was no danger in that direction as we have \$750,000,000 free gold which can be increased to \$1,000,000,000 by withdrawals from the agents" (Harrison, Open Market, Vol. II).

At a meeting of the executive committee of the directors of the New York Bank on Oct. 5, Owen D. Young asked how the purchase of government securities by the Reserve Banks "would fit into the proposed plan" for a corporation, eventually designated the National Credit Corporation. Harrison answered, "that he considered the gold position of the System paramount at this time, and on that account would not be inclined to purchase Government securities." Three days later, however, at a board meeting of the New York Bank, Harrison said "that the amount of free gold held by the System had not been materially affected by the recent loss of gold, so that there was still considerable leeway for purchases of Government securities" (Notes, Vol. II, Oct. 5, 8, 1931).

At the Oct. 26, 1931, meeting of the Conference, Harrison said that "the free gold position of the System was not a consideration at this time" (Open Market, Vol. II). On Oct. 27, Goldenweiser reported to the Board that free gold had been maintained despite the gold exports of the preceding five weeks (Harmlin, Diary, Vol. 19, pp. 169-170). No reference was made to free gold at the Nov. 30, 1931, meeting of the Conference, which authorized the executive committee to buy up to \$200 million of government securities before the end of the year (Open Market, Vol. II).

The earliest mention of the free gold problem we have found in publications of the Federal Reserve Board is in the *Bulletin*, Sept. 1931, pp. 495-496. The term is defined and a chart is presented showing free gold and excess reserves of the Reserve Banks from 1925 on. It is referred to again in the *Bulletin*, Nov. 1931, p. 604. No mention of free gold is made in the *Annual Report* for 1931. In neither that report nor any earlier one is there a suggestion of legislation to meet such a problem, though it was standard procedure for the Reserve System to list legislative recommendations in its reports. The *Annual Report* for 1932, in commenting on the passage of the Glass-Steagall Act, contains the first discussion of free gold in the annual reports.

¹⁶⁶ On Jan. 4, 1932, Harrison told the executive committee of the New York Bank that "his only hesitancy in recommending" substantial purchases of government bonds was on account of the relatively small amount of free gold "we now have at our disposal," and for that reason the Reserve Banks should have authority to pledge all their assets as collateral for Federal Reserve notes (Notes, Vol. II, Jan. 4, 1932).

His hesitancy did not prevent his urging open market purchases at the Jan. 11, 1932, meeting of the Conference (see sect. 5, above). At the Feb. 24 meeting just before the enactment of the Glass-Steagall bill, the System's failure to pursue

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not in the Federal Reserve System but in the White House and Treasury. At a conference with Congressional leaders on October 6, 1931, President Hoover presented the proposals eventually embodied in the Glass-Steagall Act.¹⁵⁷

(4) If free gold had been a serious handicap to a desired policy, feasible measures fully consistent with past policies of the System were available, even during the height of the gold drain, to relieve the free gold problem.

(a) The bookkeeping adjustments referred to above were apparently exploited to some extent, but by no means fully (b) Bills could have been purchased instead of government securities, since they were eligible as collateral for Federal Reserve notes. After rising sharply during the height of the crisis (September–October, 1931), holdings declined continuously from October 1931 to February 1932, because buying rates were kept above market rates.¹⁵⁸ (c) Member banks could have been encouraged

actively bill purchases, discount rate reduction, and "buying of Government securities, if necessary, facilitated by alleviation of free gold position," recommended on Jan. 11, was explained as follows:

Continued uncertainties in the domestic situation, as well as a large drain of gold to Europe and particularly to France, stimulated by fear of inflation in this country, have been important factors in making it seem undesirable to carry through an aggressive program of reduction in discount rates and purchases of Government securities. The relatively small amount of free gold held by the reserve system was a further major factor in limiting the possibilities of purchases of Government securities (Open Market, Vol. II, minutes of meetings, Jan. 11, and Feb. 24, 1932).

¹⁵⁷ Hoover, *Memoirs*, pp. 115–118; see also Benjamin Anderson, "Our Gold Standard Has Not Been in Danger for Thirty-Six Years," *Chase Economic Bulletin*, Nov. 10, 1932, p. 10.

¹⁵⁸ On behalf of the System it could be claimed that the decline was not its own choice, that its buying rate on acceptances was below the rediscount rate, but New York City banks, which alone had bills, were substantially out of debt to the Federal Reserve Bank of New York by Nov. 1931 and hence had no incentive to sell (H. H. Villard, "The Federal Reserve System's Monetary Policy in 1931 and 1932," *Journal of Political Economy*, Dec. 1937, p. 727). The crucial point, however, is the relation of the buying rate, not to the rediscount rate, but to the market rate. As Villard has pointed out, from Aug. 1931 through Oct. 1931, while the System's bill holdings were expanding, its buying rate was at or below the market rate; thereafter its buying rate was $\frac{3}{8}$ to $\frac{1}{4}$ percentage point above the market rate (*ibid.*, pp. 728–732). If the Reserve Bank had lowered the buying rate, the New York banks would have sold their acceptances to it. The New York Bank was fully aware that the relevant consideration was the relation of the buying rate to the market rate and not to the rediscount rate, as its actions in Aug. 1929 show. On Jan. 21, 1932, Harrison told his board of directors, "[W]e should probably have lowered our bill rates because they [are] well above the effective market rates and our portfolio of bills [is] rapidly diminishing" (Harrison, Notes, Vol. II).

Benjamin Anderson, who argued that the availability of free gold was a constraint on Federal Reserve expansionary policies (which, as we have noted, he opposed), nevertheless denied that the Glass-Steagall Act was essential to

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to increase their discounts. At all times there was ample eligible paper in the portfolios of member banks.¹⁵⁹ Goldenweiser and others recognize this but say that the only way to increase the amount in the hands of the Federal Reserve Banks would have been to sell bonds and thereby force member banks to discount.¹⁶⁰ They add, quite correctly, that such a step would have been deflationary. However, that was not the only way. Failure of banks to discount was partly a consequence of the long-standing Federal Reserve pressure against continuous borrowing. In 1929, the System went beyond that and resorted to "direct pressure" to dissuade member banks from discounting for particular purposes. It would have been easier to use direct pressure to persuade member banks in 1931 or

relieve the constraint. He listed alternatives available for increasing the supply of free gold similar to those listed in our item 4. Concerning 40 (b) he wrote:

Moreover, it would have been very easy to increase the volume of open-market acceptances available for purchase by the Federal Reserve Banks, by concerted policy involving the cooperation of banks and great business corporations—a proposal of this sort was actually made by important industrial leaders ("Our Gold Standard Has Not Been in Danger," p. 9).

¹⁵⁹ See the figures on country and reserve city member banks' holdings of eligible assets, including eligible paper and U.S. government securities not pledged against national bank note circulation, on June 30 or at call dates, June 1926 through Dec. 1932, Federal Reserve Board, *Annual Report* for 1932, p. 126.

Holdings of eligible paper, including paper under rediscount, were four times as large as member bank borrowings, when this ratio was at a low point in Dec. 1931. Of course, member bank borrowings were secured by U.S. government securities as well as by eligible paper, so the possibility of increased borrowing on the basis of eligible paper holdings in Dec. 1931 is understated.

On Mar. 24, 1932, in Hearings before the Senate Committee on Banking and Currency on S. 4115 (*National and Federal Reserve Banking System*, 72d Cong., 1st sess., p. 109), Senator Glass remarked, "Let me say that in an interview I had with him as late as last Saturday evening, the chief of banking operations in the Federal reserve system stated to me that the banks had ample eligible paper."

Holdings of eligible paper were also widely distributed, according to figures Glass presented during the Senate debate on the Glass-Steagall bill. He said he supported the section of the bill that permitted banks without eligible paper to rediscount other security satisfactory to the Reserve Banks, not because banks no longer held adequate amounts of eligible paper, but because of the psychological effect of the measure in freeing the fear-ridden banks from their inhibition to rediscount the eligible paper they owned (*Congressional Record*, Senate, Feb. 17, 1932, p. 4137; see also H. P. Willis and J. M. Chapman, *The Banking Situation*, New York, Columbia University Press, 1934, pp. 678-679).

¹⁶⁰ Goldenweiser, *American Monetary Policy*, p. 160; and Federal Reserve Board, *Annual Report* for 1932, p. 18. Benjamin Anderson believed force would not have been necessary:

They [the Federal Reserve Banks] could have done this [sold government securities] without force, by arrangement with the great banks of the country in such a way as to tighten money markets little, if at all, if it were done in concert and as a matter of general policy ("Our Gold Standard Has Not Been in Danger," p. 9).

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1932 to increase their discounts, since that could have been made profitable for member banks.¹⁶¹

(5) Finally, enactment of the Glass-Steagall Act on February 27, 1932, entirely removed the problem of free gold. Yet, as we have seen, its enactment did not lead to a change in Federal Reserve policy. The large-scale open market operation of 1932 was begun six weeks later primarily because of Congressional pressure and was allowed to lapse not long after Congress adjourned.

The conclusion seems inescapable that a shortage of free gold did not in fact seriously limit the alternatives open to the System. The amount was at all times ample to support large open market purchases. A shortage was an additional reason, at most, for measures adopted primarily on other grounds. The removal of the problem did not of itself lead to change of policy. The problem of free gold was largely an *ex post* justification for policies followed, not an *ex ante* reason for them.

¹⁶¹The System need only have offered to discount member bank paper backed by government securities (which constituted acceptable collateral for Federal Reserve notes) at a rate below the market yield on government securities. Under Secretary of the Treasury Mills apparently made that recommendation to the Open Market Policy Conference meeting on Jan. 11 and 12, 1932. The Treasury, which had to raise \$1½ billion by June 30, wanted to encourage bank subscriptions in the face of a severe depreciation in government securities since Sept. 1931. "The inclination of banks to subscribe would be increased by reduction of Federal reserve discount rates to give some differential between those rates and the yields on government securities. If banks can be induced to borrow and buy the net effect must be an expansion of credit" (Harrison, *Open Market*, Vol. II). No action was taken on the recommendation.

Suggestion of a "variation of the 'direct pressure' method, tried unsuccessfully in 1929," namely, "borrowing . . . would not be frowned upon by the Federal Reserve Banks," was made in 1930 by a New York Bank director, but it was not considered to be a practical solution of the problem (Notes, Vol. I, May 26, 1930). Individual Reserve Banks must have differed at any given time in the encouragement to discount they gave their member banks. See, for example, Charles E. Mitchell's comments on the San Francisco Bank, which suggest that it was not liberal in its interpretation of eligibility requirements (Notes, Vol. II, Oct. 15, 1931). Even Harrison, who in Oct. 1931 recommended that New York City banks borrow freely from the System "what was necessary to meet the needs of the situation," hesitated to call bankers in to see him in this connection, because "we must be prepared to have our action construed as an invitation to come in and borrow from this bank and to do something with the funds thus obtained. This procedure would, therefore, have its responsibilities." Owen D. Young said he wanted "to stop, look, and listen," before proceeding "by calling group meetings of bankers and by issuing what will be, in effect, an invitation to the member banks to come in and borrow at this bank" (Notes, Vol. II, Oct. 26, 1931; Mar. 24, 1932).

Clark Warburton maintains that, far from encouraging discounting as a means of getting more eligible paper, "as bank failures became frequent, the Federal Reserve banks developed an extremely hard-boiled attitude toward member banks which needed to borrow to meet deposit withdrawals" ("Has Bank Supervision Been in Conflict with Monetary Policy?", *Review of Economics and Statistics*, Feb. 1952, pp. 70-71).