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The Federal Reserve System

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## THE FEDERAL RESERVE SYSTEM

**N**OW that legislation for the reform of our banking system stands as a *fait accompli*, it should be profitable to inquire to what extent, and in what manner, provision has been made for the realization of those aims, which, from the economic point of view, seem necessary as well as desirable in the organization of a good banking system. It is not the purpose of this article to present the political and legislative history of the new banking law or to indulge in prophecy as to the probable outcome of its particular provisions. The present inquiry is confined to the question: To what extent does the new law square with sound and comprehensive principles of organized banking?

To explain the viewpoint from which the analysis proceeds, let us review briefly the important ends which students quite generally concede should be considered in welding together banks into a system. The important service which banks render in the broad process of wealth production, grows out of their extension of credit facilities in the form of deposits and of notes. As the demand for these facilities varies absolutely from place to place and from time to time in the same place, as well as relatively between the two forms of credit with fluctuations in general confidence—because of the difference in the acceptability of notes as contrasted with checks—the fundamental desideratum is “elasticity.” This means that wherever and whenever the demand for bank credit increases, such credit will, within the limits imposed by the necessity of maintaining adequate reserves, expand in corresponding degree. But elasticity means also that, when demand falls off, a prompt and adequate contraction will result as a matter of course; and that, when demand simply shifts from one form to another, the necessary transformation of credit can be effected with a minimum of friction. Such elasticity involves not only the power to expand credit but also the power to restrain expansion within

safe limits. It involves as well the power to enforce contraction in response to falling demand.

As the expansion and contraction of credit is primarily a question of the relation between the credit and the underlying reserves, full elasticity can be attained only through the centralization, or "mobilization", of the reserves. With centralized reserves the variations in demand both from place to place and from time to time can be fully and economically met. On the other hand the transformation of credit from one form into another is largely a question of the particular system of note issue that may be provided by law. Furthermore, centralized reserves are effective only in so far as they are accessible. This requires that the individual banks must be able directly or indirectly to rely on such reserves when occasion demands. Means must be provided whereby the banks may resell or "rediscount" enough of their normal investments to permit each to strengthen its position as the need therefor may arise. In other words full elasticity of bank credit requires the mobilization of bank reserves; and, as an adjunct of centralized reserves, it requires also a system of rediscounting.

Bank credit, however, is being used to an increasing extent in the settlement of business transactions between individuals in widely separated communities. With a system of centralized reserves these transactions may be easily "cleared." Indeed the more completely reserves are centralized, the more entirely may intercommunity payments be resolved into mere bookkeeping transactions on the books of the agency controlling the reserves. Hence another end to be held in view in organizing the banks into a system is the establishment of an effective system of domestic clearings.

Owing to the importance of the exportation and importation of gold to the national credit structure, some means must be provided in the banking system for protecting the nation's gold reserves. As already indicated, such protection necessitates in the first instance a control of the credit that the country's reserves are carrying. But it requires further the possibility of influencing the foreign exchange market to such an extent that undesirable importation or exportation of gold

may be discouraged, while, at the same time, desirable movements may be stimulated. This protection is possible, however, only when reserves are so mobilized that the central agency may, in ultimate analysis, dictate the terms on which credit can be extended or gold for export be obtained and induce the importation of gold that is necessary.

Another factor to be borne in mind in analyzing a new banking system is the necessity of providing for the transition from the system previously in force. In this connection the most difficult task in planning the Federal Reserve system was to secure the withdrawal of the inelastic, bond-secured notes issued by the national banks and yet avoid an undue contraction of the currency and the depreciation of the bonds held as the basis of the note issue. Another problem was involved in the transition from a system of scattered reserves with all the voluntary relationships that had been built up under it, to the desired system of centralized reserves.

## I

The factor most largely responsible for the peculiar organization of the new system was the desire for the centralization of reserves. The plan adopted involves no absolute centralization of reserves but rather a district centralization with the possibility of effecting virtually complete centralization should the necessity therefor arise.

The holders of the centralized reserves are to be banks specially created for the purpose and known as Federal Reserve Banks. The law provides for from eight to twelve "federal reserve districts" in each of which is to be designated a "federal reserve city", in which the new banks are to be established. Each federal reserve bank may establish branches in other places in its own district and also in other districts should the reserve banks of such other districts be for any reason suspended.

Federal reserve banks are to be the banks of bankers. They must have a minimum capital of \$4,000,000 which is to be subscribed in each district by the banks joining the system, although if the required capital cannot be obtained in that way it is to be made up by public or governmental subscription. Member-

ship is voluntary, and is open to state banks and trust companies as well as to national banks. To be eligible, however, state institutions must meet the capital and similar requirements imposed on national banks in the communities where the state institutions are situated. Special inducements, such as the possibility of being empowered to do a trust-company business, to accept on commission bills drawn by clients for imports or exports, to lend in some cases on real-estate security, and to establish foreign branches, are extended to the national banks subscribing to the capital of the reserve banks. In addition to this, certain threats are made if they fail to join. They may lose their right to act as reserve agents for other banks, while a whole year of recalcitrancy involves the forfeiture of their national charters. Each member bank subscribes to the capital of its federal reserve bank an amount equal to six per cent of its own capital and surplus. The total capital above the minimum may increase or decrease with the accession or with the withdrawal of member banks. Member banks may not, however, either transfer or hypothecate the federal reserve shares that they own.

The government of a federal reserve bank is vested in a board of nine directors, divided by law into three classes, A, B and C, each class having three members. Members of classes A and B are elected by the member-banks, but only those of class A represent the banks. The members of class B are to represent the commerce and industry of the district. Those in class C are appointed by a central board known as the "Federal Reserve Board". This board designates one of its appointees as chairman, and he, by virtue of that designation, becomes also the "Federal Reserve Agent" for his bank and his district. A second member of class C is designated as deputy chairman. The method of electing the members of the board by the banks is carefully prescribed with the evident purpose of giving the small banks voice equal to that of their larger competitors.

Except for first incumbents the term of office is to be three years, one director in each class being annually replaced. Their qualifications are carefully prescribed. Directors in class B may be neither directors nor officers nor employees of any bank, while those in class C may not even hold stock in any bank.

As the federal reserve banks are primarily public rather than profit-making agencies, their annual dividends are limited to six per cent per annum. Any excess above six per cent is to go, half to the surplus and half to the government, until the surplus reaches forty per cent, when the entire excess is to accrue to the government. The amount so accruing to the government is to be used at the discretion of the Secretary of the Treasury, to strengthen the gold reserve behind the "greenbacks" or to retire outstanding United States bonds. In case of liquidation, whatever is left of the surplus after deducting items justly chargeable against it goes to the government. The dividends to the shareholders of the reserve banks are, however, cumulative.

Coördinating and controlling the whole system is the "Federal Reserve Board." It is made up of seven members. The secretary of the treasury and the comptroller of the currency are members *ex officio*. Five members are appointed by the president by and with the advice and consent of the Senate. Not more than one member of the board can come from a single federal reserve district. At least two of the presidential appointees must have had banking or financial experience, but no member of the board may be an officer, director, or stockholder of any bank. Except for the *ex officio* members, and for the first incumbents, whose terms will run respectively, two, four, six, eight and ten years, the term of office will be ten years. But the president may remove members for cause. While the secretary of the treasury is the *ex officio* chairman of the board, the president is empowered to name one of his five appointees as "governor" and another as "vice-governor." The governor and vice-governor are the chief executive officers of the whole system.

The federal reserve board is an unusually powerful supervisory and regulating body. It may suspend or remove any officer or director of a federal reserve bank; it may require the writing off by such bank of its bad debts; and may suspend a federal reserve bank or take it over for purposes of reorganization or liquidation. It may also readjust or abolish altogether the classification of central reserve and reserve cities.

The member-banks are represented in the central management by a "Federal Advisory Council" made up of one representative from each federal reserve district chosen by the board of directors of the federal reserve bank. This council meets quarterly at Washington and at such other times and places as it may choose. While patterned after the stockholders' committee of the *Reichsbank* it is even less powerful than its German prototype. It may merely call for information from, and advise with, the federal reserve board.

To effect the desired centralization of reserves, the federal reserve banks are authorized to receive deposits from member banks, from the United States government, and, solely for exchange purposes, from each other. Deposits from private individuals may not be accepted. The secretary of the treasury is authorized to use his discretion in employing the federal reserve banks as depositories for government funds. In view of the evils disclosed by the independent treasury system in the past, it is hardly conceivable that he will fail so to employ them when once the system is well established. Member-banks, on the other hand, are required to keep a considerable proportion of their lawful reserves on deposit in the federal reserve banks. The exact proportions vary slightly for the central reserve city, the reserve city, and for the so-called "country banks;" but at the end of three years these proportions are respectively seven-eighths, six-fifteenths and five-twelfths, while an additional five-eighths, four-fifteenths and three-twelfths, respectively, must be kept in the member-banks own vaults or in its federal reserve bank. While a minimum of one-third of the required reserves must be kept in the member-bank's own vaults, from one-half to two-thirds of the total reserves will ultimately be centralized in the federal reserve banks.

The transfer of the required reserves by the member banks to the federal reserve banks is spread out over a period of three years to facilitate the transition from the "scattered reserve" system to the centralized system. A sudden withdrawal of the reserves from the existing reserve agents would bring about a serious contraction of credit. In order further to relieve the strain of transition the law permits the member-banks to pay

one-half of cash reserve installment during the three-year period, in paper eligible for rediscount.

## II

Let us now consider the provision made in the new law for insuring the "elasticity" of bank credit. This, as will be recalled, concerns the expansion and contraction of deposits and of notes in response to fluctuating demand.

The expansion of deposits has never given serious difficulty. The problem here is rather to restrain expansion within safe and reasonable bounds, maintaining a proper relation between reserves and liabilities. The basic units of the system, namely the member-banks, are, within the limits prescribed by the national banking law with respect to loans to individuals etc., free to expand deposits until their reserves fall to the prescribed minimum. In the reserve prescriptions a distinction is made between "demand" deposits and "time" deposits, the demand deposits being those payable, with or without notice, within thirty days, and the time deposits being those payable beyond thirty days. For all member-banks the reserve required against time deposits is five per cent. For demand deposits the requirements are eighteen per cent, fifteen per cent and twelve per cent respectively for banks in central reserve cities, in reserve cities, and in other places. As the deposits in the federal reserve banks themselves constitute the reserves for a considerable portion of the deposit liabilities of member-banks, the reserve requirements for the federal reserve banks are properly more exacting. Federal reserve banks must hold at least thirty-five per cent in gold or lawful money against their deposit liabilities. As the purpose of prescribing reserves is to check expansion, the banks are prohibited from making new loans, and incidentally from paying any dividends, when reserves fall below the prescribed percentages. Yet in order that the reserve requirements may not constitute an impassable "dead line" irrespective of the emergency, the federal reserve board is authorized to suspend all the reserve requirements for a period of thirty days and, if necessary, to renew the suspension for periods of fifteen days. But to prevent this emergency

expedient from resulting in turn in the evil of inflation, it is provided that when the federal reserve board suspends the reserve requirements it must levy a graduated tax on the amounts by which the reserve required may be permitted to fall below the specified level, and the reserve banks must then add such tax to the discount rates established by the federal reserve board. A more adjustable check on expansion that can be applied before reserves drop to the danger point is found in the authority vested in the federal reserve board to review and to determine the rates of discount which the federal reserve banks may establish. How efficacious this authority will be remains to be seen. Much will depend upon the extent to which the discount rates of the federal reserve banks can be made to control the general market rates in their several districts.

The expansion of notes is more carefully controlled. Two kinds of notes are provided for. The first grows out of the exigencies of the existing system of bond-secured currency. As explained above, it was necessary to protect the bond investments of the national banks and at the same time to guard against the possibility of a sudden contraction of the currency. Hence it is provided that the federal reserve banks may be compelled to purchase from the national banks, to the amount of \$25,000,000 a year, the bonds previously held to secure circulation. These bonds the reserve banks may deposit with the comptroller, and on the basis of them issue their own notes, by observing the same conditions that were prescribed for the national banks, with the single exception as to the limit of such issue. These notes, however, unlike the second kind presently to be referred to, are the obligations of the federal reserve banks themselves. They can obviously be no more elastic than the national bank notes themselves have been. As a matter of fact, they constitute only a temporary element in the system.

Should a federal reserve bank prefer not to avail itself of the privilege of issuing notes based on bond security, it may, with the permission of the federal reserve board, turn over the two-percent bonds with the circulation privilege, but against which no circulation is outstanding, and get in exchange from the secretary of the treasury one-half of the amount in one-year,

three-percent United States gold notes and one-half in three-percent gold bonds. But at the time of making the exchange the federal reserve bank must bind itself to purchase at the maturity of the notes an equal amount for gold, if so requested by the secretary of the treasury, and to renew the obligation annually for a period of thirty years. The significance of this unique provision lies of course in the availability of the one-year notes as quick assets. But, should it so desire, the federal reserve bank may with the approval of the federal reserve board, exchange the notes for more three-percent bonds. These bonds have not, of course, the circulation privilege.

The elastic notes in the new system are known as "federal reserve notes." These are the obligations of the United States government itself. They are issued at the discretion of the federal reserve board, through the federal reserve agents, to the federal reserve banks. The federal reserve banks pay the notes on demand to the member-banks from which they reach in turn the general public. The denominations of the notes are five, ten, twenty, fifty and one hundred dollars. All the notes must bear the distinctive letters and serial numbers which have been assigned by the federal reserve board to the reserve banks responsible for their issue. They are receivable at par by the reserve banks and by the member-banks, and also by the United States government for all public dues. They are not legal tender in payments to individuals; but this will not seriously influence their general acceptability. They are redeemable in gold at the treasury at Washington, and in gold or lawful money at any of the reserve banks. Furthermore they constitute a first lien against the assets of the reserve bank through which they are issued. Safer notes could hardly be imagined.

Prepared notes are kept on hand in subtreasuries or mints. The only formalities to be observed by the federal reserve banks in obtaining them are to have on hand the required reserve and to turn over to the federal reserve agent an amount of collateral, made up of notes and bills accepted for rediscount equal to the sum of notes desired. The federal reserve board may call for more collateral if that should be deemed necessary.

The point is, however, that the major portion of the reserve banks' normal investments become thoroughly acceptable cover for note issue. The transformation of credit from deposit form into note form ought not therefore to be a matter of difficulty.

To restrain note-expansion within due bounds the federal reserve banks are required to hold a reserve in gold of forty per cent against their federal reserve notes in actual circulation which are not already offset by gold or lawful money that has been turned over to the federal reserve agent for the purpose of retiring notes. A part of this gold reserve must be deposited with the United States treasurer. How large this part shall be is left to the determination of the secretary of the treasury, but it must in any case be not less than five per cent. But here, too, a more adjustable check is provided in the authority vested in the federal reserve board to grant in whole or in part, or to reject altogether, the application of a federal reserve bank for notes, and to fix the rate of interest on the amount that it does grant.<sup>1</sup> Considering the fact that the federal reserve board is the ultimate note-issuing authority, its power to fix interest rates on note issues is likely to be much more significant than its power to determine ordinary discount rates.

As in the case of deposits, so in the case of notes, in order to prevent the reserve requirements from acting under all circumstances as a "deadline," authority is granted to the federal reserve board to suspend the reserve requirements for thirty days and to renew the suspension for periods of fifteen days. But in order that needed expansion may not degenerate into out-and-out inflation, the federal reserve board is required to establish a graduated tax of not more than one per cent per annum on the deficiency in the reserves below forty per cent and above thirty-two and one-half per cent, and of not less than one and one-half per cent per annum on each two and one-half per cent that the reserves diminish below thirty-two and one-half per cent. Furthermore, to insure that this

<sup>1</sup>In an article in the *North American Review*, for October, 1913, Mr. Paul M. Warburg criticizes the arbitrary power granted to the federal reserve board over note issues. The probability is, however, that the provision for a possible interest charge on note issues was regarded as an emergency expedient to prevent inflation.

tax also will have the proper discouraging effect on the ultimate borrower, it is required that, while in first instance the tax is paid by the federal reserve bank concerned, the bank itself must add an amount equal to the tax to the rates of interest fixed by the federal reserve board. Thus while expansion of notes to meet real demand is provided for, the necessity for guarding against overexpansion has not been neglected.

The law contains a series of provisions designed to insure contraction of notes when demand falls off. The notes may not be counted as lawful money for reserve purposes either by member-banks or by reserve banks. It is therefore to the interest of a member-bank to deposit in its reserve bank as speedily as possible any and all of the federal reserve notes that it receives as deposits. There is a certain inconsistency here, since deposits in the reserve banks may, and indeed to a certain extent must, be regarded as reserves by the member-banks. This inconsistency, however, as in the case of the provision for a possible interest charge on note advances, finds its explanation in the desire to exert upon the notes such pressure as is considered necessary to enforce their redemption. The reserve banks in turn are not only specifically required to return each other's notes for redemption, but the paying-out by one reserve bank of the notes of another reserve bank involves a penalty of ten per cent of the amount so paid out. The reserve banks must also reimburse the treasury for notes redeemed there; and if in redeeming such notes the treasury paid out gold or gold certificates the secretary may demand reimbursement in like funds. The notes received by the treasury otherwise than for redemption may be exchanged for gold out of the redemption fund or may be simply returned to the issuing bank for the credit of the United States. The results of these alternatives may or may not be the same. Redemption in gold, on the basis of forty-percent reserves, means a contraction of \$250 in credit for each \$100 worth of notes redeemed. Returning the notes for government credit means simply a transformation of credit from note form into deposit form. As the reserve required against deposits is smaller than that required against notes, the net result of this alternative may be further expan-

sion rather than contraction. Still the result is the same if the gold taken from the redemption fund is immediately put back into the banks. In both cases, however, there is the initial redemption, which is the important consideration. In the case of redemption in gold, the action can be made more than doubly trenchant simply by holding the gold in the treasury. Should reserve banks desire of their own accord to reduce their note liabilities, they may do so through note and money deposits with their several reserve agents. Contraction of notes in response to falling demand would seem therefore to be reasonably assured.

### III

Consideration should now be given to the plan by which the new system makes the centralized reserves and the notes of the reserve banks available to the member-banks. First it may be noted that the deposit balances in the reserve banks due to member-banks are, within the limits already noted, to be counted as reserves by the member-banks. This is of course a necessary corollary of centralized reserves. These deposits may be checked against by the member-banks or be simply drawn down in reserve notes or lawful money. The important consideration for the member-banks is therefore the maintenance of an adequate balance with the federal reserve bank.

This is made possible by provisions for re-discounting. With the indorsement of a member-bank, the federal reserve bank may discount for such member-bank notes, drafts, and bills of exchange arising out of actual commercial transactions. The federal reserve board determines in general the character of such paper. But the statute provides that paper secured by agricultural products or other goods and merchandise is not to be considered ineligible for rediscounting. On the other hand, notes and bills covered by or put out for carrying stocks and investment securities, except notes and bonds of the United States government, are expressly declared ineligible. The obvious purpose of the discrimination against investment and similar paper is to discourage security speculation. This appears needlessly harsh. Bills acceptable for rediscount may

not run longer than ninety days; but here too an exception is made in favor of the rural borrower, in that bills issued for agricultural purposes and those based on livestock may have a six months' maturity. The amount of these long-time bills, however, must be limited to such a percentage of the capital of the reserve bank accepting them as may be determined by the federal reserve board. In order to control the utilization of the advantages of the new system by banks which are unwilling to assume corresponding obligations, it is provided that, in applying for or receiving discounts, a member-bank can act for a non-member only with the express permission of the federal reserve board. On the whole, therefore, it may be concluded that as long as a member-bank keeps the required proportion of its reserves in lawful money in its own vaults, the question of obtaining hand-to-hand money or that of strengthening reserves is simply one of having on hand an adequate supply of bills acceptable for rediscounting.

In connection with rediscounting, however, one important question remains. This relates to the provision made for one reserve district to get the advantage of possibly redundant reserves in other districts. Students generally agree that nothing is so effective in bringing about a free flow of funds as an open discount market. With an open market, under a system of centralized reserves, local banks need turn to the central banks only when the credit on the basis of a given ratio of reserves has been entirely absorbed. Each bank buys or sells according to its own needs. If the paper available be of the proper character, and if the inter-banking relations are such as to inspire the necessary confidence, this free flow of funds may not only characterize the country as a whole, but may also enter as an important possibility in international operations. Understanding the advantages of an open market, the framers of the law have endeavored to provide at least some of the facilities necessary to its creation. Member banks are permitted to "accept" on commission, drafts or bills of exchange growing out of exports or imports, having not more than six months sight to run. The amount so accepted, however, is limited to half the bank's paid-up capital and surplus. For bills with strong banks as the

acceptors there ought to be a wide demand. Such bills ought to flow wherever the rate of discount is lowest. To facilitate this dispersion, the law permits the federal reserve banks to discount these acceptances when they have the indorsement of at least one member-bank. But should it be impossible to build up an open market, or should the possibilities of such a market prove at any time inadequate, there is the provision that the federal reserve board may permit, and on vote of five members may compel the reserve banks to rediscount for each other. Moreover, the federal reserve board fixes the rates at which such rediscounts are made. Thus under a system of district centralization the effort is made to get the advantages of complete centralization.<sup>1</sup>

#### IV

Centralization of reserves involves also a well-organized system of domestic clearings. This was not overlooked in planning the new banking system. As clearing involves the balancing of credits against debits, in the absence of direct relations between debtors and creditors the process can be executed only through the mediation of an agency standing between them and acting for both. Hence in the federal reserve system the federal reserve board may in first instance require each reserve bank to act as a clearing-house for its member-banks, and it may also permit the reserve banks, for exchange purposes, to carry accounts with each other. The reserve banks must receive at par all remittances drawn on their own depositors that may be sent in for collection by member-banks and other reserve banks. Furthermore, there is the interesting provision that one reserve bank may send as a credit to a second reserve bank remittances drawn against a third reserve bank or its member-banks. The object of this provision is to permit three-cornered exchange whereby a given bank liquidates its indebtedness to a second

<sup>1</sup> Mr. Warburg, in the article referred to above, contends that with as many as twelve reserve banks, with possibly different discount policies, rates etc., a large discount market could not develop. Moreover, he believes that the arbitrary power over discount rates vested in the federal reserve board will prevent the development of a free and "natural" market even between the larger centers. Mr. Warburg's contention was that not more than four reserve banks should be established.

bank by sending a credit payable at a third. The whole system of charges for such clearings is in general under the control of the federal reserve board. By implication, however, member-banks may not charge their patrons more than the actual expense involved in collecting or remitting funds, or in supplying exchanges. To systematize the clearings between the reserve banks themselves it is provided that the federal reserve board may act as the clearing-house for them or it may designate one of the reserve banks to act in that capacity. The basis of an effective clearing system has thus been provided.

## V

Important provisions remain to be noted in connection with the foreign exchanges and the international movements of gold. Most of the foreign trade of the United States has heretofore been financed by foreign bankers. The new system permits the home institutions to enter the field for this business. As noted above, member-banks are allowed within certain limits to accept on commission drafts and bills of exchange growing out of exports and imports, and these may be sold in the open market or ultimately rediscounted at the federal reserve banks. National banks with a capital and surplus of \$1,000,000 or more may, with the permission of the federal reserve board, establish branches abroad. Similarly the reserve banks, when duly authorized, may open accounts in foreign countries and may establish agencies for purchasing, selling and collecting bills of exchange bearing at least two names and maturing within ninety days. But the extent to which American bankers will be able to supplant the foreigner will depend, of course, largely upon the acceptability of bills drawn in dollars. This will depend, among other things, upon the market rate of discount in the United States in competition with the rates abroad.<sup>1</sup> If the new system successfully establishes American credit in the world-markets, a large part of the tribute that American commerce now pays to foreign bankers will stay at home.

The provisions bearing on the foreign exchanges and gold

<sup>1</sup> Cf. Warburg, *loc. cit.*

movements are of especial interest. In addition to the dealings with their member-banks, the reserve banks are permitted to purchase and sell in the open market, at home and abroad, cable transfers of funds, bankers' acceptances and bills of exchange of the kind that are eligible for rediscount, with or without the indorsement of a member-bank. Furthermore, they may deal in gold coin and bullion, at home and abroad, may make loans thereon, may exchange federal reserve notes for gold in bullion and in coin, or for gold certificates, and they may contract for loans of gold. Finally, under rules prescribed by the federal reserve board, they may buy and sell, at home and abroad, United States bonds, and notes, bills, bonds, revenue warrants etc. of the stated and minor political divisions.

The significance of these provisions can hardly be overstated. Taken together, they mean that in the foreign exchange market the reserve banks will not only become competitors of existing banks but also that they are likely to become the controlling factors in that market. In normal times, owing to their extensive resources and wide powers, they will markedly influence the general drift of the exchanges, while in times of strain they ought to be in position to render most helpful aid. Their buying of bills in the open market will enable them to support the demand side when rates are low, and will at the same time enable them to throw exchange on the market when rates are high. European experience has shown this to be a most useful expedient in checking unnecessary gold movements. Moreover, the full authority granted to the reserve banks to deal in, to borrow, or to make loans against gold at home and abroad and to buy and sell governmental securities, insures the possibility of creating credits that can be used either as an offset for debts—the payment of which would otherwise necessitate gold exports—or as a means of obtaining gold to strengthen reserves at home. Furthermore, through the final control of discount rates, if that control can in practice be made effective, the federal reserve board acting through the reserve banks may check the outward flow of gold. If the nation's credit-position is strong enough, it may even attract gold to the home market from abroad. As a final guarantee to the world of the solidity of the whole sys-

tem, the gold standard is reaffirmed and the secretary of the treasury is authorized to purchase gold if necessary with one year, three-percent gold notes or to borrow it on the security of United States bonds.

## VI

From what has been adduced in this compressed analysis of our new banking system, it will justly be concluded that the fundamental elements of that system grew out of a sound understanding of the needs to be met. Full elasticity and ready convertibility of the two forms of bank credit, the effectiveness and economy of centralized reserves, the necessity for a system of rediscount, the desirability of well organized domestic clearings, the importance of international exchange operations and the protection of the gold reserves—all these important aspects of banking organized on a national basis were accorded consideration in the measures embodied in the new law. Whether the proposed expedients will in full measure attain their ends must be determined by experience. In the bill formally establishing the system the caviling critic will be able to find imperfections, repetitions, inconsistencies and ambiguities. But to the economic student familiar with American legislative methods the federal reserve system will stand as a remarkable achievement in constructive legislation.

E. E. AGGER.