

**THE
FEDERAL RESERVE SYSTEM**

Its Purposes and Functions



**BOARD OF GOVERNORS
OF THE FEDERAL RESERVE SYSTEM
WASHINGTON 25, D. C.
1947**

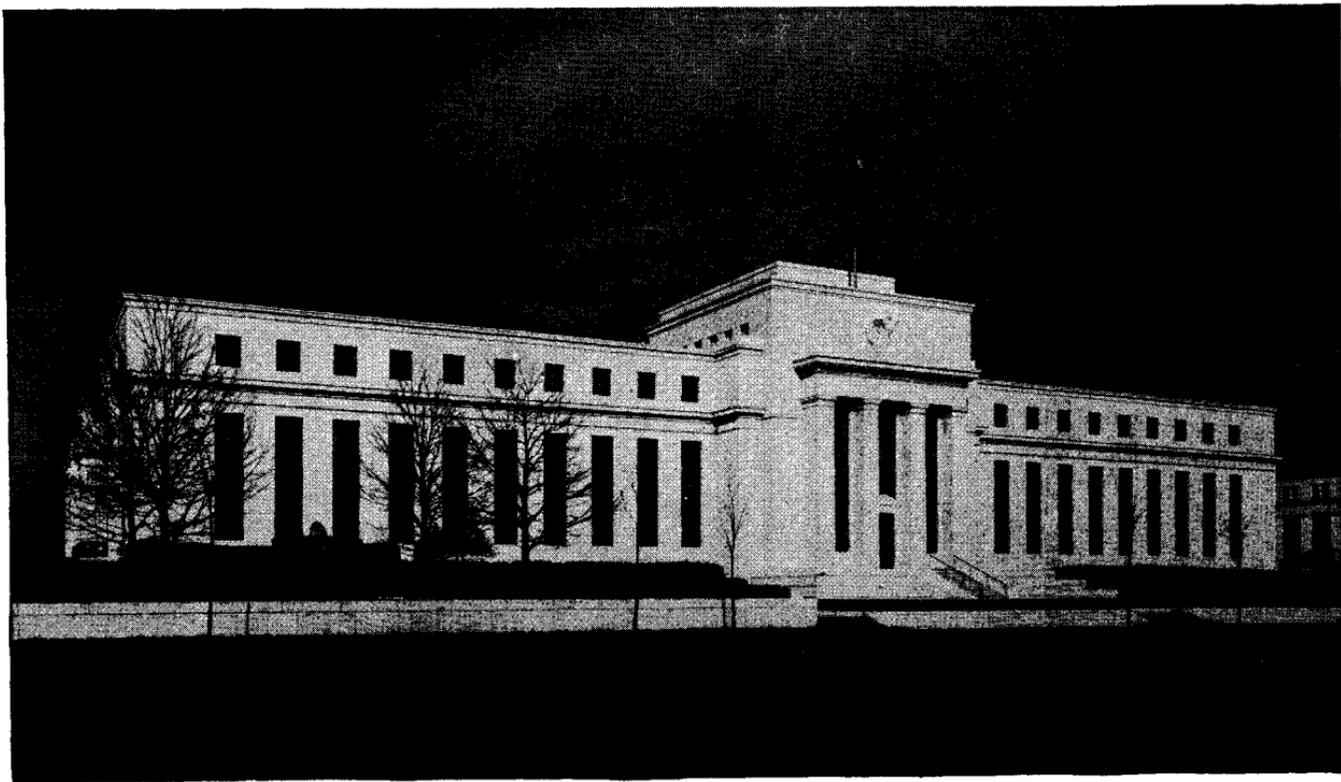
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FEDERAL RESERVE BUILDING, CONSTITUTION AVENUE AT 20TH STREET, WASHINGTON, D. C.

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FOREWORD

Central banking is essential to the economic stability and progress of any modern country. The central banking organization may be a single bank, as in England, or a system of regional banks with a national governing body, as in the United States. The main central banking function, however, is similar in all countries. It is to endeavor, within the powers granted by law or vested by custom, to see that the money supply is neither too large nor too small for the maintenance of stable economic progress. In the United States the long-run objective of the Federal Reserve System is to do its part in fostering monetary and credit conditions favorable to sustained high employment, stable values, and a rising level of consumption.

Federal Reserve operations are subject to constant adaptation to changing conditions; in their daily routine they are rather complex and replete with technicalities that cannot be presented fully in brief compass. Nevertheless it is believed that no essentials have been neglected in this short and simplified account of purposes and functions.

This revision of the initial 1939 edition undertakes to bring the original text up to date. While Federal Reserve policy continues to be affected by the aftermath of war finance, this edition is primarily concerned with the System's responsibilities and functions in

FOREWORD

peacetime. In so far as possible discussion of special wartime functions has been reserved for one chapter near the end of the book.

E. A. Goldenweiser, for many years Director of the Division of Research and Statistics of the Board of Governors and now a member of the Institute for Advanced Study at Princeton, New Jersey, is primarily responsible for the preparation of this volume. Bray Hammond and other members of the staff of the Board of Governors, who prepared the first edition, have also contributed to the revision.

THE BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM

Washington, D. C.
November 21, 1947

CHAPTER I

PURPOSE OF THE FEDERAL RESERVE SYSTEM

The principal purpose of the Federal Reserve is to regulate the supply, availability, and cost of money with a view to contributing to the maintenance of a high level of employment, stable values, and a rising standard of living.

ON December 23, 1913 President Woodrow Wilson signed the Federal Reserve Act establishing the Federal Reserve System. Its original purposes, as conceived by its founders, were to give the country an elastic currency, to provide facilities for discounting commercial paper, and to improve the supervision of banking. Over the years the System has developed a broader objective, namely, to help prevent inflations and deflations, and to do its share in creating conditions favorable to sustained high employment, stable values, and a rising level of consumption. This broader objective was well stated by President Roosevelt when the new Federal Reserve Building was opened in October 1937: "I dedicate this building to progress toward the ideal of an America in which every worker will be able to provide his family at all times with an ever-rising standard of comfort." The Federal Reserve System is dedicated to this ideal.

The reader may wonder what connection there is between employment, wages, the standard of living, and the Federal Reserve System. The Federal Reserve may seem to be a remote institution, dealing exclusively with bankers, and serving them in some mysterious way. If this is the reader's frame of mind, he

needs only to look in his pocketbook to see whether he has a Federal Reserve note, or, for that matter, any other piece of money. Seven-eighths of the country's currency is in the form of Federal Reserve notes and the Federal Reserve System, through its influence on the money supply, has an influence on every person in the country. The influence of the Federal Reserve, however, is not limited to its power to issue Federal Reserve notes. It extends to the money supply as a whole, by far the larger part of which consists of bank deposits. It is clear that an institution which can influence the money supply is of importance to everyone. This book is written for the purpose of describing the ways in which the Federal Reserve System influences changes in the money supply and how it carries out its other functions.

Before the establishment of the Federal Reserve System the supply of money was limited and did not respond to changes in the country's needs. Banks in smaller cities and rural regions maintained balances with banks in larger cities, which they were permitted to count as reserves. A very large volume of these reserve balances was maintained in New York and Chicago. Many banks, furthermore, as a matter of convenience and custom and as a means of utilizing idle funds, kept balances in the financial centers over and above their legal requirements. New York, Chicago, and St. Louis were designated as central reserve cities, and national banks in these places were required to maintain all their legal reserves in the form of cash in their own vaults.

Under these circumstances, when banks throughout the country were pressed for funds by their depositors and borrowers, the demand converged on a

few banks situated in the financial centers. In ordinary times the demand was not excessive, for while some out-of-town banks would be drawing down their balances, others would be building theirs up. But at times when business was unusually active the demand became widespread and intense. It was particularly acute during the crop-moving season. At such times banks all over the country would call on banks in the financial centers for funds, which the city banks were to supply and charge to the reserve balances of the country banks. Because no facilities for obtaining additional funds were available to the city banks, the situation would become very tight. To meet the out-of-town demand the banks in the financial centers would sell securities and call loans or refuse to renew existing loans or make new ones, with the result that security prices would fall, interest rates would rise sharply, loans would have to be liquidated, and borrowing would become difficult.

Panics and crises of this kind were apt to occur every few years. The problem had been under public discussion and study for a long time when, following a crisis of unusual severity in 1907, Congress appointed a National Monetary Commission for the purpose of determining what should be done. There was active and thorough consideration of the question for several years and Congress, though it greatly modified the plan recommended by the Commission, eventually adopted legislation embodying the results of study both by the Commission and by other authorities inside and outside Congress. This legislation is the Federal Reserve Act, which became law on December 23, 1913 and provided machinery by which varying demands for money by the public could be met.

Practically every modern country has a central bank for the performance of functions corresponding to those performed by the Federal Reserve System. In England it is the Bank of England, which has been in existence since the end of the seventeenth century; in France it is the Bank of France, established by Napoleon I; and in Canada it is the Bank of Canada, which began operations in 1935. In the United States there is a regional system of twelve Federal Reserve Banks, and the coordination of their activities is effected through the Board of Governors in Washington.

The duties of the Federal Reserve, in addition to the regulation of the money supply, include functions that relate primarily to the maintenance of regular services for the member banks of the Federal Reserve System, the United States Government, and the public. These services are principally the following: holding member bank reserve balances; furnishing currency for circulation; effecting telegraphic transfers of funds; facilitating the clearance and collection of checks; examining and supervising State member banks and obtaining reports of condition from them; collecting and interpreting economic information bearing on credit problems; and acting as fiscal agents, custodians, and depositaries for the Treasury and other governmental agencies.

Since the principal function of the Federal Reserve is to regulate the money supply, the following three questions should be answered in general terms at the outset: (1) What constitutes the money supply? (2) How do changes in this supply affect the lives of the people? and (3) By what means does the Federal Reserve regulate this supply?

(1) What constitutes the money supply? From the point of view with which this book is concerned the money supply consists of all kinds of paper money and coin that are in circulation and of deposits held by the banks for their depositors. That paper money and coins (currency) are a part of the money supply needs no elaboration or explanation. A statement of the composition of our currency will be given later. The reason that bank deposits are also included in the money supply is not far to seek. When a person has \$10 in his pocket and \$100 in the bank he is in a position to spend \$110 at any time. These two kinds of money represent his cash resources; they serve the same general purpose and they can be converted into each other at any time; that is, currency can be converted into a bank deposit by taking it to a bank, and a bank deposit can be converted into currency by taking it out of a bank. The amount of currency and of deposits in June 1947 is shown below (in billions of dollars):

Paper money and coin (currency).....	28
Bank deposits:	
Demand	83
Time	56

It will be seen that the amount of bank deposits is much greater than the amount of currency. We have long since acquired the habit of keeping most of our money in the banks and of making most of our payments by drawing checks on our deposits with the banks. Our habits in this respect, however, change from time to time. Sometimes we keep more cash and sometimes less. Such changes in money habits have certain technical consequences to be referred to later. For a general idea of the functions of the Federal

Reserve, however, the two kinds of money, pocket money and bank money, should be considered together, because both kinds originate in bank credit, over the volume of which the Federal Reserve exerts a regulatory influence. Because bank deposits constitute the major part of our money supply, and because both deposits and currency are closely related to loans and investments of banks in a manner described later, the phrases "money supply" and "volume of bank credit" as used in this study generally mean the same thing, namely, the means of payment owned by the people of the country.

(2) How do changes in the supply of money affect the lives of the people? Everyone believes that he is better off financially if he has more money. But more concretely the question of whether the supply of money is adequate depends on whether the manufacturer has or can get enough money at a reasonable cost to buy his raw materials and pay the wages of his employees, whether the farmer has enough money or can borrow enough to finance his operations, whether the merchant has or can get enough money at a nonprohibitive rate to lay in a stock of goods, whether consumers as a group have enough money to buy what they require and what is produced. When money is scarce or hard to get, or costs too much, factories and stores may curtail operations and lay off employees. Diminished wages cause hardship to workers, who curtail their purchases; this makes it still more difficult for the merchants, who reduce their orders for goods. Manufacturers in turn find it necessary to lay off more workers. A serious depression, unemployment, and distress may follow.

The course of events leading to the reverse of these

developments is similar. If consumers possess and are prepared to spend so much money that they try to buy more goods than the manufacturers can produce by manning their plants to capacity, an increase in the supply of money in the hands of consumers cannot add to the country's output. It can only bid up prices, that is, make purchasers pay more for the same amount of goods. If merchants and others tried to buy more goods than usual, so as to profit by the rise in prices, manufacturers might be induced to try to expand their plants, thus bidding up the prices of construction materials and wages. No one profits by these advances because production costs go up as much as consumer prices and the cost of living as much as wages. In the end, the spiral breaks at some point, perhaps because prices get so high that consumers, even though many of them receive higher wages, can no longer buy the goods produced. Then a downward spiral develops, and the higher values have risen on the upswing, the more abruptly and lower they are likely to fall on the down turn. Unemployment and distress will follow.

These are the ways in which excessive changes in the money supply can affect the lives of the people. The story is oversimplified in that it does not include all the factors that affect the level of economic activity, but it serves to indicate the tendencies that may develop if money is too plentiful, too cheap, or too easily obtainable, or if it is too scarce, too dear, or too hard to get. It is by influencing the supply, cost, and availability of money that the Federal Reserve has an influence on the lives of the people.

(3) By what means does the Federal Reserve influence the money supply? This is the principal subject

of this book and the main points should be stated briefly at the outset. Practically all of the money we use reaches us, directly or indirectly, through the banks. We may receive our pay in cash in an envelope, but the firm which pays us will have cashed a check at the bank before making up its pay roll. Therefore, the supply of money in the country depends almost entirely on the ability of banks to meet the monetary requirements of industry, trade, agriculture, and other sectors of economic life. The ability of banks to meet the money needs of the people depends in turn on the amount of reserves they hold. This amount is affected by Federal Reserve operations. Banks can lend and invest money only in proportion to the reserves at their disposal. The way the system of reserves works, and the fact that under it our banks can lend in the aggregate several times as much as they have in reserves, will be discussed later. What needs to be understood from the beginning is that the Federal Reserve, through the determination of the cost and other conditions on which banks can obtain additional reserves, can influence the amount of money that they may pass on to the public through loans and investments. The Federal Reserve thus has the power to influence the country's money supply.

In an economy like ours, where practically all transactions are settled in money, regulation of the money supply gives the Federal Reserve great powers and places on its management a grave responsibility. There are serious limitations on this power and many factors that affect the flow of money, as distinguished from its supply. The Federal Reserve alone cannot assure the maintenance of satisfactory economic conditions. These depend, in addition to the supply of money, on

the demand for it, over which the Federal Reserve can exert only an indirect and limited influence. They also depend on a great variety of other things, including governmental policies in regard to expenditures, taxes, and debt; the distribution of income among different groups of the population; the bargaining strength and policies of management and labor and of agriculture and other sectors of the economy; the power of monopolies; the course of foreign trade and foreign investment; and the prospects for peace. The Federal Reserve has little power to influence the flow of money into particular channels or to insure that it will be used at all. But the money supply, which the Federal Reserve can influence, is of itself an important factor in the people's economic life. The country relies on the Federal Reserve for such regulation of the money supply as will facilitate the maintenance of stable economic conditions, high employment, and a rising standard of living.

CHAPTER II

FUNCTION OF BANK RESERVES

In the regulation of the supply of bank credit, or money, the Federal Reserve depends chiefly on its ability to increase or decrease bank reserves, which constitute the legally required basis of bank credit, or money.

COMMERCIAL banks, like other business organizations but unlike the Federal Reserve Banks, are in business for the purpose of making money. When investors put their money in the capital stock of a bank they expect to earn a return on their investment and look to the managers of the bank to make this return as large as possible within the limits of safety. The bulk of a bank's earnings comes from the returns it receives from loans to customers and holdings of securities. Consequently it is usually a bank's policy to put as much as possible of the money it receives as capital and as deposits into loans and investments. Every bank is required by law, however, to hold as reserves an amount of uninvested funds equal to a designated portion of its deposits.

Historically, reserve requirements were imposed by law for the purpose of protecting depositors—to assure that banks did not expand credit to the point that they could not meet their depositors' withdrawals. This was before establishment of the Federal Reserve System when there was no central bank at which a bank could discount paper in order to obtain additional reserves in time of temporary need. Consequently reserve requirements, although they restrained credit expansion, did not protect depositors; the banks could

not pay out to their depositors the funds they were required to keep as reserves. Other ways of protecting depositors have since been developed and bank reserves have come to be considered primarily as the medium through which the money supply can be regulated. It is because the Federal Reserve can influence the volume of reserves available to banks that it can influence the money supply.

If a bank is a member of the Federal Reserve System, at the present time (June 1947) it is required to keep the following percentages of its deposits as reserves:

Time deposits, all member banks.....	6
Demand deposits:	
Reserve and central reserve city banks.....	20
Other member banks	14

On the average these percentages work out for all member banks at about 15 per cent. As will be explained later, reserve requirements are subject to change by the Board of Governors of the Federal Reserve System within certain limits. Banks that are not members of the Federal Reserve System are subject to reserve requirements that vary from State to State.

Bank reserves are the basis of our money system. Their operation is described below in general and somewhat simplified form. When a member bank receives a deposit of \$100, in currency or in the form of a check on another bank collectible through clearing, it must deposit \$15 with a Federal Reserve Bank as required reserves against the deposit and is free to lend or invest the remaining \$85. This percentage of reserves represents the general average required under existing law and regulation, taking all member banks and all types of deposits into consideration. When there is

an adequate demand for loans from customers or a supply of suitable securities in the market, the bank will invest practically all of the \$85 and will keep as reserves only the \$15 prescribed by law. In practice the bank will keep a little more than the \$15 because the law requires it to keep its entire legal reserve with the Federal Reserve Bank, and in addition the bank needs some cash in its till to meet the demands of customers without delay. But since currency can always be obtained promptly from the Federal Reserve the amount kept in bank tills is relatively insignificant. For purposes of exposition it may be assumed, therefore, that all of the money above the required 15 per cent is lent or invested by the banks. In practice this was not the case during the depression and the period prior to our entry into the war, largely because gold imports were providing reserves and the business situation was not conducive to the expansion of loans. More recently banks once more tend to make use of nearly all their available funds.

It is on the relationship between the volume of reserves and the amount of bank lending that the Federal Reserve chiefly depends for regulating the supply of money. Methods possessed by the Federal Reserve for influencing the amount of bank reserves will be described in the next chapter. The present chapter attempts to describe how changes in bank reserves affect the volume of money.

Assume that a bank has \$8,500 of loans and investments, \$1,500 of reserves with the Federal Reserve, and \$10,000 of deposits, leaving out for the present other items in the balance sheet. The bank's ratio of reserves to deposits is at the legal minimum of 15 per cent. Consequently, if a customer wants to borrow,

the bank cannot meet his needs out of its own resources because it has no funds available for lending. It must obtain additional funds if it wishes to make additional loans.

For the purpose of describing the operation of the banking system, let us assume that there is only one Bank and that all the people keep their deposits with this Bank and go there to obtain all their bank loans. Let us give the Bank enough resources to make it possible to think of it as representing all the banks in the country. Let us assume that the relevant items in its balance sheet are as follows (in billions of dollars):

Loans and investments	85
Reserves with the Federal Reserve Banks.....	15
Deposits	100
<i>Ratio of reserves to deposits..... 15 per cent</i>	

The Bank would not be in a position to make any additional loans or investments: its funds would be in use up to the limit permitted by law. Let us assume that the Federal Reserve believes that additional loans will be in the public interest and that it adds 10 billion dollars to the Bank's reserves in a manner that also increases the Bank's deposits by the same amount (using one of the methods described in the next chapter). Then the simplified balance sheet of the Bank would be (in billions of dollars):

Loans and investments	85
Reserves	25
Deposits	110
<i>Ratio of reserves to deposits..... 22.7 per cent</i>	

The Bank would have a higher ratio of reserves to deposits (22.7 per cent) than is required by law (15 per cent). Therefore, it could make additional loans and investments. A little figuring will show that the Bank

has the 16.5 billion dollars of reserves required for its deposits of 110 billion dollars and also has 8.5 billion dollars of reserves above requirements, or excess reserves. Let us assume that the public is eager to get additional money and wants to borrow as much as the Bank will lend. Let us assume also that the proceeds of the loans will be kept on deposit with the Bank. This is not a far-fetched assumption, because borrowers most likely want the money in order to pay other depositors in the Bank. While there will be transfers from one deposit to another, no deposits will be withdrawn from the Bank, and the total of deposits will remain at the higher level made possible by the increase in reserves. Another calculation will show that on the basis of the 8.5 billion dollars of excess reserves the Bank can add 56 billion dollars to its loans and investments. The Bank's balance sheet would then be (in billions of dollars):

Loans and investments	141
Reserves	25
Deposits	166
<i>Ratio of reserves to deposits.....</i>	<i>15 per cent</i>

This simplified picture of bank transactions indicates that a deposit of 10 billion dollars of reserve money with the Bank gave rise to a growth of 56 billion dollars in loans and investments and of 66 billion in deposits. This calculation, which leaves out of account many complications, shows what a powerful instrument Federal Reserve action can be. It can provide the basis for an increase in the money supply not merely by the amount that it adds to the Bank's reserves, but by about six times that amount. This is true because there can be a multiple expansion of deposits on the basis of the additional reserves.

Consider now the course of events in case the Federal Reserve decides that there is too much money and that the amount should be diminished. Suppose that it reduces the Bank's reserves by 5 billion dollars, using a method that will reduce deposits by the same amount. The balance sheet will then read (in billions of dollars):

Loans and investments.....	85
Reserves	10
Deposits	95
<i>Ratio of reserves to deposits..... 10.5 per cent</i>	

The Bank would be deficient in reserves to the extent of 4.5 per cent of deposits, or more than 4.2 billion dollars. In order to comply with the law the Bank, if it were not able to call on the Federal Reserve, would have to call loans or sell investments, and thus absorb deposits to the extent of about six times its deficiency in reserves, that is, by 29 billion dollars. If its depositors repaid loans or repurchased 29 billion dollars of investments by drawing on their deposits, the result would be (in billions of dollars):

Loans and investments	56
Reserves	10
Deposits	66
<i>Ratio of reserves to deposits..... 15 per cent</i> <i>(the legally required minimum)</i>	

Once more we see the powerful effect of Federal Reserve action, this time in the direction of contraction. By reducing the Bank's reserves by 5 billion dollars the Federal Reserve caused a liquidation of 29 billion of loans and investments and a reduction of 34 billion in deposits, or money.

It is because of the fact that the Federal Reserve by adding to the Bank's reserves can enable it to in-

crease its loans and its deposits by several times the amount added that Federal Reserve dollars are often called "high-powered" dollars as compared with ordinary deposit dollars or "low-powered" dollars.

In our exposition so far we have considered one Bank, large enough to represent all the banks in this country, as doing all the banking business. We have assumed that the Bank will lend or invest as much money as the law will permit. This has often been true of the banking system in the past, and is approximately the situation at the present time (June 1947). We have also assumed a uniform reserve requirement of 15 per cent, which represents the current average of the requirements on both types of deposits, time and demand, in all groups of banks, and we have assumed that all the money lent by the Bank will be kept on deposit. To the extent that the public chooses to withdraw some of the money in currency, this will not be the case. In a later chapter, changes in the public's demands for currency from time to time will be described. It is sufficient for the purposes of this chapter to know that the people's demand for currency changes in response to business conditions and is not affected directly by the amount of loans made by the banks. It is, therefore, proper to disregard currency withdrawals in a description of the way bank credit expands and contracts.

The process of reserve operation in the simplified situation in which one Bank does all the banking business may now be transferred to the more complex situation in which thousands of banks make loans and investments and hold deposits.

It has been seen that our consolidated Bank can expand its loans and investments by as much as 56

billion dollars if the Federal Reserve adds 10 billion dollars to its reserves. No individual bank can do that because borrowers may wish to take the money out of the lending bank. In fact, a borrower is more likely than not to use the deposit created by his loan to write checks to pay various people. He has borrowed the money presumably for the purpose of making payments; he would not ordinarily undertake to pay interest on a bank loan for the purpose of carrying an unused deposit account. Consequently, a bank does not lend more than it has in free funds; if it did, it would not be able to honor its depositors' checks. How, then, can the banking system lend at least six times as much as it obtains from the Federal Reserve if each individual bank of which the banking system is composed cannot lend any more than it receives? Is this not a paradox?

What appears to be a paradox is really a simple and understandable matter. In substance what happens is similar to what happens when a given amount of money, by being passed from hand to hand, buys several times as much as its face value. In order to establish a parallel between the two, let us assume that all of the people through whose hands the money passes will put aside 15 per cent of all their receipts as savings and immediately spend the other 85 per cent. The first person receives \$100; in accordance with the condition just laid down, he puts aside \$15 and spends \$85—let us say to buy clothing. The tailor who receives the \$85 puts away 15 per cent of it and spends \$72.25—let us say to buy furniture. The furniture dealer saves 15 per cent and spends \$61.41. This process continues, as is indicated in the accompanying table, until in the end the entire original

\$100 has been put aside as savings and articles to the total value of \$566 have been bought. The amount received by all the people in the aggregate was \$666, the value of the articles bought was \$566, and the savings were \$100. This corresponds closely to what happens in the case of the banking system. On the basis of \$100 added to reserves the total amount of deposits increases by \$666, total loans and investments

THE MULTIPLYING CAPACITY OF MONEY IN BANK OR COMMODITY TRANSACTIONS

		Amount received or deposited	Amount spent or lent	Amount set aside
Transaction	1	\$100.00	\$ 85.00	\$ 15.00
	2	85.00	72.25	12.75
	3	72.25	61.41	10.84
	4	61.41	52.20	9.21
	5	52.20	44.37	7.83
	6	44.37	37.71	6.66
	7	37.71	32.05	5.66
	8	32.05	27.24	4.81
	9	27.24	23.15	4.09
	10	23.15	19.68	3.47
	11	19.68	16.73	2.95
	12	16.73	14.22	2.51
	13	14.22	12.09	2.13
	14	12.09	10.28	1.81
	15	10.28	8.74	1.54
	16	8.74	7.43	1.31
	17	7.43	6.32	1.11
	18	6.32	5.37	.95
	19	5.37	4.56	.81
	20	4.56	3.88	.68
	Total for 20	\$640.80	\$544.68	\$ 95.12
	Additional transactions	25.86	21.98	4.88
	Grand total	\$666.66	\$566.66	\$100.00

by \$566, and reserves by \$100, the original amount received. The power of money to do business in a total

amount several times as large as the sum used to transact the business is due to the fact that money passes from hand to hand and in so doing continues to pay for purchases.

There is one difference between bank transactions and commodity transactions. In the case of commodities the net result is final. The purchasers own the articles bought and their savings and have no further obligations. In the case of banks, the transactions result in loans and investments, which represent obligations due to the banks, and also in deposits, which represent bank liabilities to the public. Aside from the fact that banking transactions create two sets of obligations that cancel each other, while commodity transactions do not, the two cases are parallel. The multiplying capacity of money arises from the fact that it is universally acceptable and passes from hand to hand, each time paying for a transaction. In principle, the bank case does not differ from the commodity case. The arithmetic applicable to both cases is presented in the table on the opposite page.

This analysis has an important bearing on the question of the source of power to create money. It is sometimes maintained that, since the banking system can lend several times as much as it obtains in reserves, it creates money by a stroke of the pen. In the light of the preceding description it is clear that this statement is not correct in relation to any single bank. An individual bank can lend only such money as it acquires from its stockholders, its depositors, or the Federal Reserve. In the meantime the money, after it leaves the hands of the first bank, continues to do business as it passes from bank to bank or from person to person.

What is important to Federal Reserve operations is that the issuance of a given amount of what has been termed high-powered money by the Federal Reserve may create a volume of ordinary money that is several times as large as the amount issued, and that, on the other hand, Federal Reserve withdrawal of a given amount of high-powered money may result in liquidation of several times that amount of loans and investments and of deposits, that is, of ordinary money. It is this leverage which our banking procedure and law give to the Federal Reserve that results in its power to cause large changes in the total money supply by undertaking much smaller operations.

These are the principles on which our banking system operates. In practice an individual bank does not match one transaction against another. There is a continuous flow of funds into the bank from its depositors, who bring checks on other banks and currency to be added to their deposits. And there is a continuous outflow of funds as depositors write checks on their own accounts or cash checks drawn on other banks. The bank must constantly watch its deposits and its reserves to make sure that its reserves are sufficient to comply with legal requirements. The occasion to borrow from the Federal Reserve Bank usually arises, not from a desire to make an additional loan when the bank has no funds to spare, but from the need to replenish reserves which have declined below the required level as the net result of all the transactions that have gone through the bank.

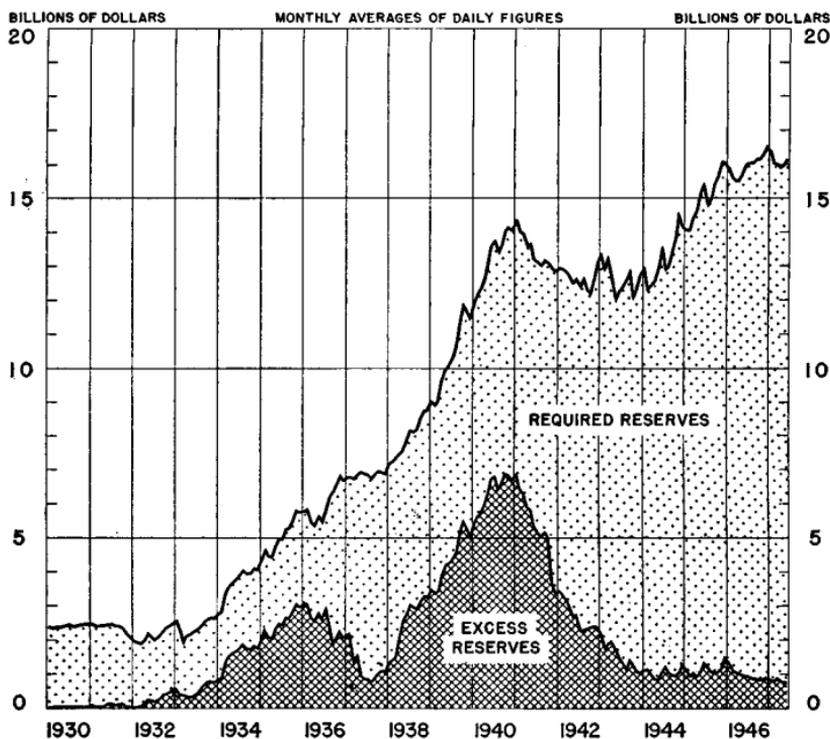
There is another point that needs to be clarified. While in the practical workings of the banking system the bulk of deposits originates in the granting of loans or the purchase of investments by banks, each indi-

vidual banker knows from day-to-day experience that deposits are brought to him by his customers, and his ability to make loans and investments arises largely from the receipt of his depositors' money. This is another apparent banking paradox which causes much confusion. The fact is that deposits originating in loans and investments move from one bank to another in the course of business and seldom stay with the bank of origin. The series of transactions is as follows: when a banker makes a loan he credits the amount to the borrower's deposit account; the depositor writes checks against it in favor of various people who deposit them at their banks. Thus the lending banker is likely to retain or receive only a small portion of the deposits he creates, while a portion of the deposits created by other banks is brought to him by his customers. Hence both statements are generally speaking true; taking the banking system as a whole the bankers originate deposits by making loans and investments, but each individual banker's ability to lend or invest arises largely from deposits brought to him by his customers.

While a bank must watch its reserve balance with the Federal Reserve Bank to make sure that it is large enough, this does not mean that the balance remains unused. Under Federal Reserve rules reserve requirements are related to reserve balances maintained on the average over a period (a week for central reserve and reserve city banks and half a month for other member banks). While maintaining his average reserve balance at or above the required minimum, a banker may make constant use of his account. Through it he can settle adverse balances with other banks through the clearings and transfer funds to other cities. He uses his reserve account with the

Federal Reserve Bank in much the same way that a depositor uses his checking account. But he must be careful to see that over the reserve period the account averages at or above the amount required in relation to his deposits.

MEMBER BANK RESERVE BALANCES



It has been stated that banks as business organizations endeavor to use all their available funds in profitable ways and keep as reserves only the minimum required by law. During most of the life of the Federal Reserve, member banks have used practically all their funds and have had practically no excess reserves. During the depression and the war period,

however, conditions were different, as is brought out by the accompanying chart.

In the thirties there was a large movement of gold into the country which increased the reserves of member banks. At the same time there was only a limited demand for loans acceptable to banks. Consequently, the banks had a considerable volume of reserves in excess of requirements, or excess reserves. As credit expanded during and after the war, as currency demand increased rapidly, and as reserve requirements were increased in a manner described in the next chapter, excess reserves declined and at the present time (June 1947) they once again constitute a relatively small proportion of total reserves.

CHAPTER III

GENERAL METHODS OF REGULATION

The principal Federal Reserve methods of general regulation of the volume of bank credit, or money, are discounts for member banks, purchases and sales of securities in the open market, and changes in reserve requirements.

IT has been shown how changes in bank reserves influence the volume of bank credit or money. It is the purpose of this chapter to describe the three methods by which the Federal Reserve may influence the amount of bank reserves. These methods are discounts, open market operations, and changes in reserve requirements.

Discounts

When a bank has lent or invested all of its available funds and has no reserves above legal requirements, it may obtain additional reserves by turning over a part of its portfolio to a Federal Reserve Bank. It may rediscount one or more of its customers' notes with a Reserve Bank, or it may give its own note to a Reserve Bank, using paper from its own holdings as collateral. The second procedure, known as an advance, differs from the first in form only, not in substance. In either case the Reserve Bank gives the member bank credit in its reserve account for the amount of the accommodation and thereby increases the legal reserves of the member bank. For this service the Reserve Bank charges interest at a rate which is known as the discount rate.

Originally the Federal Reserve Act prescribed rigid limitations on the kind of paper that was eligible for obtaining Federal Reserve credit. All obligations of the United States Government were eligible, and such commercial paper as represented loans of limited maturities to meet the current needs of commerce, industry, or agriculture. Loans made for investment or speculative purposes, that is, for carrying or trading in investment securities other than bonds and notes of the United States Government, were not eligible. Experience showed, however, that these limitations were not in themselves effective in preventing too much lending in prosperous times, when eligible paper was plentiful, and that they hindered adequate assistance by the Federal Reserve to member banks in times of depression, when eligible paper was scarce. Consequently, the limitations were in effect removed by law and at present a Reserve Bank may make an advance to a member bank on its note secured by any collateral satisfactory to the Reserve Bank. In case the collateral is not of the kind described as eligible, however, the Reserve Bank must charge an extra $\frac{1}{2}$ per cent or more of interest.

When a member bank applies for accommodation, a Federal Reserve Bank is under no obligation to grant the credit; its decision is expected to rest on its judgment concerning the applicant's need and the use to be made of the additional funds. In the language of the law: "Each Federal Reserve Bank shall keep itself informed of the general character and amount of the loans and investments of its member banks with a view to ascertaining whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities, or for any

other purpose inconsistent with the maintenance of sound credit conditions; and, in determining whether to grant or refuse advances, rediscounts or other credit accommodations, the Federal Reserve Bank shall give consideration to such information."

A member bank with satisfactory collateral can usually obtain the desired accommodation from a Federal Reserve Bank. The policy of the Federal Reserve in encouraging or discouraging borrowing by member banks expresses itself principally not in granting or refusing loans but in the rate charged for discounts and advances. Traditionally, when the Federal Reserve was of the opinion that expansion of the money supply would be desirable in the public interest, it set its discount rate at a low figure in relation to prevailing market rates. When it believed that further expansion would be harmful, it raised the discount rate. Hence the discount rate in effect at the Federal Reserve Banks, and particularly a change in this rate, has at times been an important indication of Federal Reserve policy; a high rate or an advance in rate indicated that there appeared to be danger of too much money and inflation; a low rate or a reduction in the rate indicated that in Federal Reserve opinion an increase in the supply of money would be in the public interest. The discount rate, therefore, not only has represented the cost of accommodation at the Federal Reserve Banks but has reflected Federal Reserve judgment as to whether there was too much, too little, or the right amount of money for doing the country's business.

In many periods since the establishment of the Federal Reserve System the discount rate has been the principal method of expressing Federal Reserve policy

with respect to the money supply. For a number of more recent years, however, first as the result of an inflow of gold from abroad, which gave member banks additional reserves without recourse to borrowing from the Reserve Banks, and later as the result of wartime developments to be discussed later, discounts for member banks have been relatively small and the discount rate has been of relatively minor importance in Federal Reserve policy. Nevertheless, discounts and the discount rate can have an important bearing on the money supply. Their influence is increased by the customary reluctance of member banks to show indebtedness on their balance sheets.

Open Market Operations

Open market operations as a method of influencing the money supply differ from discount operations primarily because they are undertaken at the initiative of the Federal Reserve, not at the initiative of the member banks. In the case of discounts the Federal Reserve can do no more than establish a discount rate until a member bank applies for credit accommodation. In the case of an open market operation the Federal Reserve decides of its own accord that there is too little or too much money and proceeds to buy or sell in the open market—i.e., from or to any one who is in the market—such obligations as it is permitted by law and chooses to acquire. Obligations of the United States Government are the principal kind of paper thus bought or sold.

The process through which open market operations by the Federal Reserve are reflected in the volume of member bank reserves may be briefly described as follows: if the Federal Reserve decides to buy 100

million dollars of United States Government securities, it notifies the dealers in such securities and they supply the securities to the Federal Reserve; in payment the dealer receives a Federal Reserve Bank's check. The dealer deposits the check with a member bank, which in turn deposits it with a Federal Reserve Bank. The result is that the Reserve Bank has added 100 million dollars to its holdings of United States Government securities, and has added the same amount to the reserve deposit of some member bank. How this amount of additional reserves may result in a growth of about six times that amount in the money supply has been described in the preceding chapter.

If the Federal Reserve decides that it wishes to reduce the amount of member bank reserves, and through them the money supply, it sells Government securities to a dealer. In payment the dealer draws a check on a member bank in favor of a Federal Reserve Bank, and the Reserve Bank deducts the amount from the reserve deposit of the member bank. If the amount is 100 million dollars, the result is a decrease by that amount in Federal Reserve holdings of United States Government securities and a corresponding decline in the member bank's reserves. As has been indicated in the preceding chapter, such a decrease in reserves, if not met in some other way, would necessitate a reduction of about six times that amount in member bank deposits and hence in the money supply.

Member banks, however, would be reluctant to call enough customers' loans or sell enough securities to cause an extreme contraction in bank credit, and the Federal Reserve would hesitate to insist on a radical reduction in the money supply. What would

probably happen is that member banks, finding themselves short of legally required reserves, would try to replenish them at least in part by obtaining discounts or advances from the Reserve Banks. The Reserve Banks would generally grant such loans, at the discount rate. As a result, the Federal Reserve would hold a smaller amount of Government securities and a larger volume of discounts than before, while member banks would have a smaller volume of deposits (because of the dealer's check) and would be in debt to the Federal Reserve. For the sake of simplicity this leaves out of account the reduction in required reserves that would result from the decrease in member bank deposits.

In this connection the member banks' reluctance to show indebtedness, which has been mentioned before, has an important bearing on the effects of open market operations. If purchases by the Federal Reserve are made at a time when member banks are substantially in debt to the Federal Reserve, it is probable that member banks will use at least part of the reserves they acquire as the result of the purchases to reduce their debt. On the other hand, as has already been stated, the loss of member bank reserves resulting from sales by the Federal Reserve in the open market will probably be made up at least in part by additional borrowing from the Federal Reserve.

Federal Reserve action in the open market, therefore, is not likely to result in a rapid multiple expansion or contraction of member bank deposits. Instead, under ordinary conditions, it is likely to result in a decline or an increase in member bank indebtedness, with no immediate substantial change in member bank reserves. But this does not mean that the action

would have no effect on the money supply. When member banks are out of debt to the Federal Reserve they are much more willing to make loans and investments and thus to increase their deposits; when they are heavily in debt they not only are less willing to make additional loans but are inclined to reduce the volume of their loans and investments. They may not call loans, but they will probably be less willing to make new loans or to renew old ones as they come due. And the Federal Reserve is in a position to encourage this process by raising the discount rate.

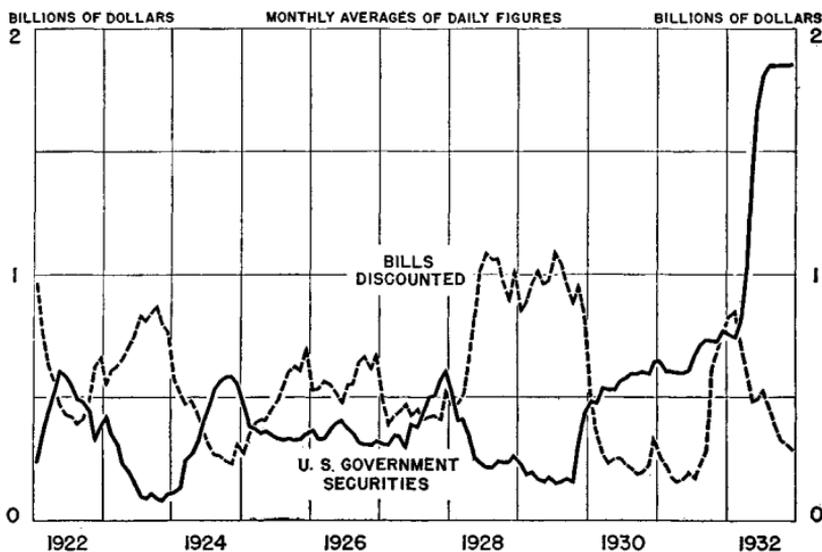
Open market operations, therefore, work more gently than would be the case if additions to or subtractions from member bank reserves through Federal Reserve purchases or sales led to an immediate multiple expansion or contraction of bank deposits. They are nevertheless a powerful influence on the money supply because, by decreasing (or increasing) member bank indebtedness, they tend to encourage (or discourage) expansion of deposits at member banks.

The accompanying chart shows how increases in Federal Reserve holdings of United States Government obligations (that is, open market purchases) in the past have been accompanied by declines in holdings of discounts, and, on the other hand, how decreases in security holdings (that is, open market sales) have been reflected in increased holdings of paper discounted for member banks. In the past, the Federal Reserve has tended to make complementary use of these two instruments of credit policy.

Brief reference should be made to another element in Federal Reserve credit which has not been important in recent years but was of considerable moment in the past, namely, dealings in bankers' acceptances.

A banker's acceptance is a draft, usually drawn by a seller of goods against the buyer, which is "accepted" by a bank so that the bank becomes primarily liable

SYSTEM HOLDINGS OF DISCOUNTS AND UNITED STATES GOVERNMENT SECURITIES



on the instrument and lends its own credit to that of the buyer. In this country most acceptances arise out of exports or imports. A seller of cotton, for example, may draw a draft payable in ninety days on a buyer in Liverpool. The buyer may have an arrangement with a bank in New York whereby the bank will accept the seller's draft on the buyer, thus enabling the seller to negotiate the draft, and the buyer will reimburse the accepting bank upon maturity of the instrument. These instruments, known as acceptances or bills, bear three signatures, those of the seller, the buyer, and the accepting bank. They usually are secured by goods in the process of shipment, and may be accompanied by shipping documents. They are considered to be paper of the highest quality.

The Federal Reserve Banks generally stand ready to buy acceptances at a slight discount, that is, at a discount rate slightly higher than the rate prevailing in the open market. Such purchases are a form of credit expansion intermediate between discounts for member banks and open market purchases. They are similar to discounts in that the initiative for their sale to the Reserve Banks comes from member banks or dealers, the Reserve Banks merely announcing the rate at which they are willing to buy. On the other hand, the purchase of acceptances is similar to open market purchases in two respects: in both operations the Federal Reserve will buy not only from member banks but also from others, and neither operation places the seller in debt. There is no indebtedness added to the condition report of a member bank when it sells an acceptance to a Reserve Bank. The member bank has sold a bill, endorsed by it, which is reported merely as a contingent liability. Consequently purchases of acceptances by the Reserve Banks do not have the effect of borrowing by member banks; they do not put the banks in debt and therefore do not make them less willing to extend credit to their customers.

In recent years the volume of acceptances has become relatively small and the Reserve Banks have purchased them only in minor amounts. Their place in the financial system has been taken by three-month Treasury bills. These bills are issued weekly by the United States Treasury, usually at rates determined by competitive bids. During the war the Federal Reserve adopted the policy of purchasing all Treasury bills offered at a fixed rate of $\frac{3}{8}$ per cent, and of allowing banks an option to repurchase bills sold at the same rate. Member banks, particularly those in

financial centers, tended to treat their Treasury bill holdings as equivalents of cash, selling and repurchasing them to adjust their reserve positions in response to current movements of funds. In the summer of 1947 the wartime policy of the Federal Reserve with regard to Treasury bills was discontinued and bill rates were once more permitted to find higher levels in response to conditions in the market.

Source of Federal Reserve Lending Power

As has just been described, when the Federal Reserve makes a discount for a member bank or buys a United States Government security in the market, it gives credit for the proceeds to a member bank in its reserve account. The member bank may use such additions as reserves for its deposits or, if it happens to be in need of additional currency to meet a public demand, it may withdraw them in Federal Reserve notes or other currency.

The question arises as to the source and the limits of the Federal Reserve's lending power. The limits are set by the legal requirement that Federal Reserve Banks must hold a 25 per cent reserve in gold certificates against their notes in circulation and their deposits. Their combined liabilities for notes and deposits consequently must not exceed four times their gold certificate holdings. Only in emergencies can this requirement be suspended and only for short periods and at penalty rates.

The source of Federal Reserve lending power is in the System's authority to issue Federal Reserve notes and to create bank reserves in an amount exceeding the Federal Reserve Banks' holdings of gold certificates. At present the authorized ratio is four to one. The

issue of notes is an act of creating money. It is for this reason that, as will be explained later, notes are issued to the Federal Reserve Banks by the Federal Reserve Agent, a representative of the Federal Government. When a Federal Reserve Bank gives a member bank credit in its reserve account for a discount, the basis is laid for the creation of additional money through loans and investments by the banking system. Member banks also give deposit credit to customers who have obtained loans, but Federal Reserve transactions differ from member bank operations in two important respects: (1) member banks are required by law to keep deposits with the Reserve Banks, while depositors of member banks are legally free to withdraw their deposits at any time, and (2) the Reserve Banks can issue notes, while the member banks cannot.

The answer to our question, therefore, is that the lending power of the Federal Reserve Banks arises from the authority given to them by law to create money, and the limits of this power are set by the requirement that their liabilities on notes and deposits must not be in excess of four times their holdings of gold certificates.

Changes in Reserve Requirements

Discounts and open market operations by the Federal Reserve Banks, as has been seen, result in changes in the volume of member bank reserves. Changes in reserve requirements, which are the third method of regulating the money supply, have no direct influence on the total of member bank reserves but affect the amount of reserves that member banks must hold as deposits with a Federal Reserve Bank, and conse-

quently the amount available for lending or investing. For example, when the reserve requirement is 15 per cent, a member bank must keep in its reserve account with a Federal Reserve Bank \$15 out of every \$100 of its own deposits, and has \$85 left to lend or invest. If reserve requirements were raised to 20 per cent, the member bank would have to keep \$20 uninvested and have only \$80 to lend, and if requirements were reduced to 10 per cent, it would need to keep only \$10 uninvested and would have \$90 to lend or invest. Thus a change in reserve requirements changes the rules under which member banks must operate.

These are the effects of changes in reserve requirements on an individual member bank, but in addition they change the rate at which multiple expansion will operate. On a 15 per cent reserve requirement \$100 of reserves will support bank deposits of \$666, as was shown in the table on page 18. On a 20 per cent basis \$100 will support \$500 of deposits, and on a 10 per cent basis it will support \$1,000 of deposits. It will be seen that changes in reserve requirements are an extremely powerful instrument for reaching the volume of money through bank deposits.

Originally the Federal Reserve Act prescribed certain reserve requirements and made no provision for changes by the Federal Reserve. The percentages in effect on June 21, 1917, were:

Time deposits, all member banks.....	3
Demand deposits:	
Central reserve city banks.....	13
Reserve city banks	10
Country banks	7

Central reserve cities now are New York and Chicago; in June 1947 there were about sixty reserve cities, including most of the larger cities of the country; banks

outside of these cities are known for purposes of determining reserve requirements as country banks.

Banking legislation empowering the Federal Reserve to change reserve requirements was enacted first in 1933 and has not been changed extensively since it was revised in 1935. As the law stands today (June 1947) the Federal Reserve has authority to increase reserve requirements to twice the ratios stated in the law and subsequently to reduce them to any level that is not below these ratios. The range of discretion and the requirements in effect at present are as follows (in percentages):

	Range	In effect, June 1947
Time deposits, all member banks..	3 to 6	6
Demand deposits:		
Central reserve city banks....	13 to 26	20
Reserve city banks	10 to 20	20
Country banks	7 to 14	14

Changes in reserve requirements may be made applicable to any or all the groups of banks shown above but must be uniform for all banks within a group.

Federal Reserve Bank lending power is in no way affected by changes in member bank reserve requirements, even though they may change the demand for Reserve Bank credit. They are reflected in changes in the distribution of Federal Reserve Bank deposits between the required and the excess reserves of member banks.

Because changes in reserve requirements are a very powerful instrument they are used only on infrequent occasions. When changes are made they apply to all the banks in a group, regardless of the reserve position of the individual banks. As a matter of fact, even when banks in the aggregate have a large volume of excess reserves, there are sure to be some banks that

have none. An increase in requirements makes it necessary for such banks to acquire additional reserves either by reducing their loans and investments or by borrowing. Because of this effect on individual banks, increases in reserve requirements have been made only at times when the total of excess reserves was so large that such deficiencies as resulted in individual cases were small. For example, when requirements were raised by 50 per cent in August 1936, member banks as a group had excess reserves of more than 3.0 billion dollars; after the increase in requirements they still had an excess of over 1.8 billion dollars. In the spring of 1937, before the first of a series of increases in requirements, member banks had more than 2.0 billion dollars of excess reserves, and they still had about 0.9 billion after requirements had been increased to the maximum permitted by law.

Action on reserve requirements is not adapted to day-to-day changes in banking and monetary conditions. It expresses itself in changes in percentages, which generally result in large aggregate inroads on the available reserves of member banks. Frequent changes in requirements by small percentual amounts would be disturbing to member banks and would complicate their bookkeeping and their customary way of doing business. For these reasons this method of influencing the volume of available bank reserves and the supply of money is usually employed only for the purpose of adjusting the banking structure to large-scale changes in the country's supply of monetary reserves. It is not employed to make frequent delicate adjustments to current changes in the supply of money. For this purpose the Federal Reserve depends principally on discount and open market operations.

CHAPTER IV

SELECTIVE METHODS OF REGULATION

In addition to general methods of regulation the Federal Reserve has special powers to regulate the terms on which transactions in stock market securities are financed and for a period during and immediately after the war it had authority to prescribe terms on which consumer credit could be extended.

THE instruments of credit policy so far discussed, discounts, open market operations, and changes in reserve requirements, relate to the volume and cost of bank credit in general, without regard to the particular field of enterprise or economic activity in which the credit is used. Thus they are distinct from the two instruments of control, now to be discussed, which are particular or selective. These two are applicable to stock market credit and consumer credit, respectively. Selective instruments of Federal Reserve regulation do not, as do general regulations, approach the problem through influencing bank reserves. Instead they prescribe the terms on which certain kinds of loans may be made, or credits granted, regardless of whether the banks have abundant or scanty reserves. These methods are supplementary to methods of general regulation, and their merit is that they make it possible to restrain the flow of money into certain fields at times when conditions in the economy as a whole are such as to make general restraints on the growth in the volume of money undesirable. For example, an unhealthy stock market speculation may develop and call for restraint at a time when credit

for production and trade is not expanding and when the application of general instruments of regulation might do harm to the country's over-all economic activity. At such a time the Federal Reserve could decide to employ its power to regulate margin requirements.

Margin Requirements

The Federal Reserve authorities have long been enjoined by law to restrain the use of bank credit for speculation; they are to keep themselves informed, in the language of the law, as to "whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities," and they are authorized to take certain restrictive action to prevent undue use of credit in these fields. Since 1934, the Board of Governors of the Federal Reserve System has also had the specific power to curb the excessive use of credit for the purpose of purchasing or carrying securities by limiting the amount which holders of securities may borrow upon them for this purpose either from banks or from securities brokers and dealers.

This amount is always less than the current market value of the securities, and the difference between the two is called the margin. Thus if a loan of \$7,500 is secured by stock worth \$10,000, the margin is \$2,500 or 25 per cent of the value of the stock. The Board's regulations may be thought of as prescribing either minimum margin requirements or maximum loan values; for the greater the margin required, the less the amount that can be borrowed.

The Board's regulations apply to the margin that must be required at the time the security is pur-

chased. If the collateral security for the indebtedness subsequently declines in value, the regulations do not make it necessary for the borrower either to put up additional collateral or to reduce the indebtedness. The limitations apply only to credits obtained for the purpose of buying or carrying securities registered on national stock exchanges;¹ they do not apply to any loan for commercial purposes, even though the loan be secured by stocks. In any case the bank or broker making a loan may require additional collateral if he deems it necessary.

For several years before the war, the Board's regulations required margins of 40 per cent, but during the war requirements were raised first to 50 per cent, then to 75 per cent, and in 1946 to 100 per cent. When the margin required was 40 per cent, one could borrow for the designated purpose 60 per cent of the value of his collateral security; when it was 50 per cent, he could borrow 50 per cent; when it was 75 per cent, he could borrow only 25 per cent; and when it was 100 per cent, he could borrow nothing. To require a margin of 100 per cent was in effect to forbid loans for the purpose in question. The reason for so drastic a requirement was that inflationary pressures were very strong and any growth whatever in stock market credit would increase them. The 100 per cent requirement was in effect from January 1946 to February 1947, when it was reduced to 75 per cent, making it possible for banks and brokers to lend 25 per cent of the value of the collateral.

¹The provisions of the law make some distinctions between brokers or dealers and banks; brokers or dealers cannot extend credit on unregistered securities except temporarily in connection with cash transactions; banks are not restricted by margin requirements in making loans on securities other than stocks.

The control effected by margin requirements, though bearing directly on the lender, puts restraint upon the borrower and dampens demand. It can be used accordingly to keep down the volume of stock market credit even though lenders are abundantly able and eager to lend. The extent to which margin requirements may restrain borrowers can be illustrated very simply. Before the regulation was authorized, a person having, say, \$1,000 to put in the market could arrange with a broker, if the broker was willing to accept the risk, for the purchase of 100 shares of stock at \$100 a share—that is, \$10,000 worth—the stock being held by the broker as collateral for the \$9,000 he was lending and giving him a margin of 10 per cent. If the stock rose or fell \$5 a share, the borrower would have a profit or loss of \$500. Customary margins in pre-regulation days ranged from 10 to 25 per cent. Under the present requirement of a 75 per cent margin, the buyer could arrange to purchase only about 13 shares at \$100 each, and a rise or fall of \$5 a share would bring him a profit or loss of only \$65. It is obvious that high margin requirements greatly reduce the gains or losses to be realized by buying with borrowed funds, and cut down the amount of credit which can be obtained for this purpose. Furthermore, with high margins the pressure of forced selling to bolster accounts during market declines is reduced.

Another effect of high margin requirements is in restricting the amount of pyramiding that can take place in a rising market, that is, the extent to which traders may add to their holdings, when the market is rising, without putting up additional money or additional securities but merely by borrowing against the additional market value of securities already held

in their accounts. In case 100 shares of stock purchased for \$10,000, for example, should rise in value to \$15,000, the increase of \$5,000 would suffice, under a 10 per cent margin requirement, not only to margin the increase in value of the original 100 shares but in addition to margin an additional purchase of 300 shares. Under a 50 per cent margin requirement, however, the increase of \$5,000 market value would suffice, after allowing for the increased margin of \$2,500 on the original 100 shares, to permit the purchase of only about 33 shares. Restriction of pyramiding is an important restraint on rising stock prices as well as on the growth of credit employed in the stock market.

By the control of margin requirements excessive use of credit in the stock market, which has caused serious disturbances to the economy in the past, has been placed under control. The danger of a stock market boom financed by credit and followed inevitably by a disastrous collapse has been largely eliminated. A boom and a collapse in the stock market is still possible—on a cash basis, but without the use of credit it is not likely to assume the proportions it had in the past, as for example in 1929. At that time credit extended by brokers alone had increased to at least 10 billion dollars, a peak from which it fell to three-quarters of a billion by the middle of 1932. This rise and fall in stock exchange loans was accompanied by an advance in prices of common stocks to an index number of 238 in the autumn of 1929 followed by a drop to 36 in the middle of 1932. This boom and bust in the stock market caused a great deal of damage and contributed to the development of depression in the thirties. With the inauguration of control of credit going into the stock market the likelihood of an episode

like the one that culminated in 1929 has become remote.

Aside from having to do with a specific use of credit, the authority with respect to security loans differs from other Federal Reserve powers in reaching outside the Federal Reserve System to banks that are not members of the System and to brokers and dealers in securities. It is closely related, however, to other regulatory powers of the Federal Reserve authorities, because the use of credit for purchasing or carrying securities has an important bearing upon its use for business purposes in general.

Consumer Credit

Temporary control of consumer credit was established in 1941 by Executive Order of the President under authority of an act of Congress (enacted October 6, 1917, and subsequently amended) giving him certain emergency powers. The purpose was to curb the use of credit for the purchase of automobiles, electric refrigerators, radios, washing machines, vacuum cleaners, household furniture, and other consumers' goods and services. Consumers' goods and services were becoming scarce because the equipment, materials, and labor required for their production were being transferred to the war effort. At the same time, since employment was general and pay rolls were large, the purchasing power of consumers was increasing. In this situation, with decreased supply and increased demand, there was every reason for expecting prices to rise exorbitantly. The President, accordingly, under authority of his emergency powers, instructed the Federal Reserve authorities to regulate

the use of consumer credit so that it would not be used to accentuate the demand.

In compliance with the Executive Order, the Board of Governors issued Regulation W, prescribing terms upon which credit might be granted. At the outset it applied only to instalment credit, including both instalment sales and instalment loans, in which form the great bulk of consumer credit was being generated.

The restraints imposed by Regulation W on instalment credit were twofold: they limited the amount of credit that might be granted for the purchase of any article listed in the regulation, and they limited the time that might be agreed upon for repaying the obligation. Instalment loans not related to the specifically listed articles were subject only to limitation on the time of repayment. Thus, for example, a person buying an automobile had to make a down payment of at least a third of the purchase price, and agree to pay the balance within eighteen months. This was a larger down payment than had generally been demanded by dealers and a shorter allowance of time than had been permissible. The result was a reduction in the aggregate amount of credit currently extended for the purchase of automobiles and in the time it was allowed to run. But a more fundamental economic result was reduction of the demand for automobiles at a time when they could not be produced in volume, when prices were tending to rise, and when the nation needed all the money its citizens could refrain from spending. What was true of automobiles was true of other goods and services bought with credit funds.

The scope of the regulation was later broadened to include a larger number of articles requiring down

payments and to cover charge accounts and single-payment loans. Requirements were made more restrictive as to down payments and maturities on instalment credits; charge accounts were closed against further purchases (of listed articles) unless paid by the tenth day of the second calendar month following the purchase date; and single-payment loans of defined categories were limited to ninety days with limited renewals.

The regulation of consumer credit went much further than the regulation of stock market credit in extending responsibilities of the Federal Reserve authorities outside the field of banking. It applied to the operations of sales finance companies, personal loan companies, department stores, dealers in automobiles, electrical appliances, household furnishings, musical instruments, dry goods, and many others. These credit grantors, if engaged in instalment business, were required to register with the Federal Reserve Bank of the district in which they were situated and if not so engaged were given a blanket license. They were furnished instructions and information about the procedure to be followed in extending consumer credit, their records were subject to inspection, and they could be penalized for violating the regulation.

In the two-year period immediately following the war, regulation of consumer credit was continued, though some of the terms were relaxed and the scope of the regulation was contracted to about what it was at the outset. The reason for continuing it was that the supply of goods was at the time altogether inadequate relative to the demand, in which circumstances the danger of an inflationary rise in prices was extreme. Restraint upon the use of credit

in purchasing scarce articles was intended to lessen the pressure for a rise in prices and help to restrain it. In addition, fixing minimum down payments for important consumers' durables and the maximum length-of-contract for consumer instalment financing in general tended to cause competitive business forces to take the direction of lowering prices instead of keeping them up by means of offering easier and easier credit terms.

One reason why consumer buying on instalments was subjected to special regulation is that variation in the volume of such buying has a disturbing influence on business stability. Purchases on an instalment basis are likely to be large at a time of general prosperity when the demand for goods is pressing on the supply and consequently prices are likely to rise. At such a time instalment purchases are likely to increase still further a demand for goods that is already larger than can be easily supplied. On the other hand, at a time of depression and unemployment, when the demand for goods is low relative to the supply and is declining, the necessity for many purchasers on instalment to meet their payments tends to reduce still further the amount of money available to consumers for current purchases. This tends to intensify the depression. It is believed by many that regulation of instalment purchases, prescribing stiffer terms in a boom period and permitting easier terms in a depression, would tend to reduce somewhat the swings from prosperity to depression and would therefore support the main purpose of Federal Reserve policy.

Resting as it did on an Executive Order of the President and not on explicit legislation by Congress, the regulation of consumer credit by the Federal Reserve

authorities was a temporary form of credit control. It has been terminated as of November 1, 1947, after having been in effect a little over six years. Such a control could be made permanent only in case Congress should decide to give it that status by specific statutory authorization.

Selective instruments of national credit policy, though used in their modern form for less than fifteen years, have been developed far enough with respect to stock market credit and consumer credit to show that such instruments can be a useful complement to the older and more general instruments—discount rates, open market operations, and reserve requirements. They are flexible in themselves and can help to make credit policy in general more flexible. Their distinguishing characteristics are that they are applicable to parts of the economy instead of to the economy as a whole and that they can be used to restrain the demand for credit without operating, as general instruments do, through the stiffening of money rates.

CHAPTER V

STRUCTURE OF THE FEDERAL RESERVE SYSTEM

All national banks and many State banks are members of the Federal Reserve System. There are twelve Federal Reserve Banks, each serving one of the districts into which the country is divided. The functions of the Federal Reserve are entrusted to the Board of Governors of the Federal Reserve System, the Federal Reserve Banks, and the Federal Open Market Committee.

SO far we have spoken of the Federal Reserve as a unit without reference to its structure or to the distribution of duties and responsibilities among its component parts. This presentation has the advantage of emphasizing that from the point of view of regulating the money supply the responsibility rests on the System as a whole and that all of its parts perform their allotted functions in accordance with policies directed toward accomplishing a common objective. Consideration of the System's structure, however, is now in order.

Membership

The Federal Reserve System at the end of 1946 had 6,900 member banks. This number included all banks with national charters, which are required to belong, and such banks with State charters as voluntarily chose to belong, were qualified for membership, and were accepted by the Federal Reserve. While in number member banks were somewhat less than one-half of all banks in the United States, they held more than three-fourths of the country's bank deposits. The different kinds of banks in this country at the end of

1946 and the amount of their deposits are shown in the accompanying table. It will be noted that this table does not include Federal Reserve Banks, which are fundamentally different from commercial banks.

ALL BANKS IN THE UNITED STATES, DECEMBER 1946

Kind of bank	Number	Deposits ¹ (In millions of dollars)	
		Demand	Time
Member bank	6,900	78,920	27,190
Nonmember bank	7,685	13,526	23,610
Total	14,585	92,446	50,800
Classes of member banks:			
National	5,007	52,194	18,412
State ²	1,893	26,726	8,779
Classes of nonmember banks:			
Commercial	7,147	13,526	6,756
Mutual savings	538	.....	16,854

¹ Excluding interbank deposits.

² Includes three mutual savings banks.

It will be noted that of demand deposits, which are the closest equivalent to currency in serving as means of payment, member banks hold over 85 per cent. Consequently Federal Reserve policies have a direct influence on institutions holding about nine-tenths of the country's more active bank deposits.

Obligations and Privileges of Member Banks

By becoming members of the Federal Reserve System, banks become eligible to use all of the System's facilities and, in return, undertake to abide by certain rules that have been developed by law and regulation for the protection of the public interest. National banks are chartered by the Comptroller of the Currency, a Federal Government official, and are subject

in their operations to the National Banking Act as well as to the Federal Reserve Act. State-chartered banks that choose to become members of the Federal Reserve System retain their charter privileges but agree to be subject to the general requirements of the Federal Reserve Act. Since these banks join the System voluntarily they have the privilege of withdrawing from membership on six months' notice.

Principal among the obligations assumed by member banks are: (1) to subscribe to the capital of the Federal Reserve Banks an amount equal to 6 per cent of the member's capital and surplus. (Of this, one half must be paid-in and the other half is subject to call. No part of the second half has been called.) (2) To comply with the reserve requirements of the Federal Reserve and to keep the required reserves without interest with the Federal Reserve Banks. (That this is a much more important obligation than the first is clear from the fact that late in June 1947 the total paid-in capital of the Federal Reserve Banks was about 190 million dollars, while required reserves of member banks were in excess of 15,000 million, or nearly eighty times as large as the capital.) And (3) to be subject to various requirements of the Federal Reserve Act with respect to branch banking, holding company regulation, interlocking directorates, and other matters, and, in the case of State member banks, also to general supervision and examination by the Federal Reserve.

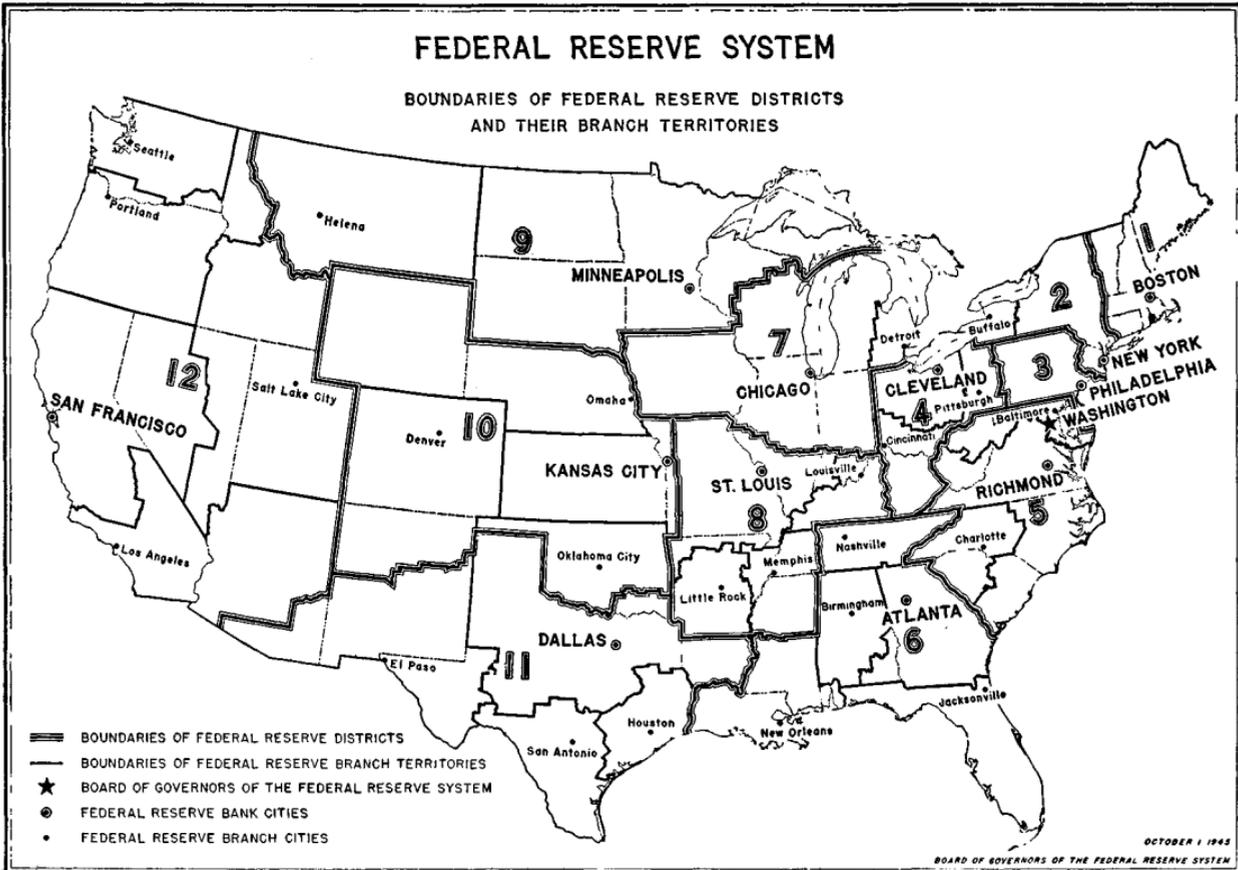
In return, member banks are entitled to the following principal privileges, among others: (1) to borrow from the Federal Reserve Banks when in need of additional funds; (2) to use Federal Reserve facilities for collecting checks, settling clearing balances, and transferring funds to other cities; (3) to obtain currency whenever

required; (4) to receive a cumulative dividend of 6 per cent on the paid-in capital stock of the Federal Reserve Banks; and (5) to participate in the election of six of the nine directors of each Federal Reserve Bank.

Federal Reserve Banks

For purposes of administering the Federal Reserve System the country is divided into the twelve districts shown in the map on page 52. The district boundaries do not always follow State lines and States in many instances form parts of more than one district. There is a Federal Reserve Bank in each district and some of the Reserve Banks have branches. A list of the districts and branches is given below:

Federal Reserve Bank of Boston	District Number 1
Federal Reserve Bank of New York Branch at Buffalo, New York	District Number 2
Federal Reserve Bank of Philadelphia	District Number 3
Federal Reserve Bank of Cleveland Branches: Cincinnati, Ohio Pittsburgh, Pennsylvania	District Number 4
Federal Reserve Bank of Richmond Branches: Baltimore, Maryland Charlotte, North Carolina	District Number 5
Federal Reserve Bank of Atlanta Branches: Birmingham, Alabama Jacksonville, Florida Nashville, Tennessee New Orleans, Louisiana	District Number 6
Federal Reserve Bank of Chicago Branch at Detroit, Michigan	District Number 7
Federal Reserve Bank of St. Louis Branches: Little Rock, Arkansas Louisville, Kentucky Memphis, Tennessee	District Number 8



Federal Reserve Bank of Minneapolis Branch at Helena, Montana	District Number 9
Federal Reserve Bank of Kansas City Branches: Denver, Colorado Oklahoma City, Oklahoma Omaha, Nebraska	District Number 10
Federal Reserve Bank of Dallas Branches: El Paso, Texas Houston, Texas San Antonio, Texas	District Number 11
Federal Reserve Bank of San Francisco Branches: Los Angeles, California Portland, Oregon Salt Lake City, Utah Seattle, Washington	District Number 12

Each of the twelve Federal Reserve Banks is a corporation organized and operated in the public service. The Federal Reserve Banks differ essentially from privately managed banks in that profits are not the object of their operations, and their stockholders, which are the member banks of the Federal Reserve System, do not have the powers and privileges that customarily belong to stockholders of privately managed corporations.

Each Federal Reserve Bank has nine directors, three of whom are known as Class A directors, three as Class B directors, and three as Class C directors. Class A and Class B directors are elected by member banks, one director of each class being elected by small banks, one of each class by banks of medium size, and one of each class by large banks. The three Class A directors may be bankers. The three Class B directors must be actively engaged in the district in commerce, agriculture, or some other industrial pursuit, and must not be officers, directors, or employees of any bank. The three

Class C directors are designated by the Board of Governors of the Federal Reserve System. They must not be officers, directors, employees, or stockholders of any bank. One of them is designated by the Board of Governors as Chairman of the Reserve Bank's board of directors and as Federal Reserve Agent.

Under this arrangement, business men and others who are not bankers constitute a majority of the directors of each Federal Reserve Bank. The directors are responsible for the conduct of the affairs of the Reserve Bank, subject to the supervision of the Board of Governors. They choose the Reserve Bank officers, but the law requires that their choice of President and First Vice President be approved by the Board of Governors. The salaries of all officers and employees are also subject to the approval of the Board of Governors. Each branch of a Federal Reserve Bank has its own board of directors, a majority of whom are selected by the Reserve Bank and the remainder by the Board of Governors. The provisions of law circumscribing the selection of Reserve Bank directors and the management of the Reserve Banks indicate the public nature of the Reserve Banks.

Decentralization is an important characteristic of the Federal Reserve System. Each Reserve Bank and each branch office is a regional and local institution as well as part of a nation-wide system. Its officers and employees are residents of the Federal Reserve district, and its transactions are with regional and local banks and businesses. It gives effective representation to the views and interests of the particular region to which it belongs and at the same time helps to administer nation-wide banking and credit policies.

The income earned by the Federal Reserve Banks

from their operations is used to cover their expenses, including the expenses of the Board of Governors in Washington, to pay 6 per cent dividends to members, and to make additions to surplus. In case of liquidation of the Reserve Banks the surplus would go to the United States Government.

While the Federal Reserve Banks earn an income, their operations are not carried on for this purpose but are determined by Federal Reserve credit policies, which are discussed in other chapters. For many years the System's net earnings were turned over in large part to the Government as a franchise tax. At a time when these earnings were small and after the Congress had directed the Reserve Banks to contribute half of their surplus to the capital of the Federal Deposit Insurance Corporation, the provision for the franchise tax was repealed. Recently, however, earnings of the Reserve Banks have once more been large, as the result of war financing. The Federal Reserve has, therefore, adopted a procedure by which it turns over to the Treasury nine-tenths of its earnings above expenses and dividends. The Federal Reserve makes these payments on the basis of authority contained in a section of the law dealing with Federal Reserve notes. This is another illustration of the public character of the Federal Reserve.

From the point of view of credit policy the Federal Reserve Banks make the decisions regarding what loans and discounts to individual member banks will be in harmony with the objectives of the Federal Reserve System. The Reserve Banks also establish the discount rate, but it must be approved by the Board of Governors, which also has authority to make changes in the rate on its own initiative. In connec-

tion with open market operations the Federal Reserve Banks, in groups prescribed by law, elect five of the twelve members of the Federal Open Market Committee—to be described later.

Board of Governors

The Board of Governors of the Federal Reserve System is a governmental institution with offices in Washington, D. C. It consists of seven members appointed by the President of the United States and confirmed by the Senate. Members are appointed for terms of fourteen years, so arranged that one term expires every two years. No two members of the Board may come from the same Federal Reserve district. The Board's expenses are paid out of assessments upon the Reserve Banks.

It is the Board's duty to supervise the workings of the Federal Reserve System. As already indicated, the Board appoints three of the nine directors of each Federal Reserve Bank, including the Chairman, who is also the Federal Reserve Agent, and the Deputy Chairman. Appointments of the President and First Vice President of each Federal Reserve Bank are subject to the Board's approval. The Board also issues regulations that interpret the provisions of law relating to Reserve Bank operations. It directs the System's activities in bank examinations and in economic research and publications. The Board represents the Federal Reserve System in most of its relations with executive departments of the Government and with congressional committees. It is required to exercise special supervision over foreign contacts and international operations of the Reserve Banks. It issues an annual report to Congress and publishes weekly a

statement required by law of the assets and liabilities of the Federal Reserve Banks. It issues a monthly *Federal Reserve Bulletin* and other periodic or occasional publications.

Of the principal monetary actions of the Federal Reserve the Board has full authority over changes in reserve requirements and margin requirements. It also has authority to establish the maximum rates of interest that member banks may pay on time deposits. It "reviews and determines" discount rates established by the Reserve Banks. While the terms of consumer credit were being regulated, the Board had sole responsibility for their determination and enforcement. In general, the Board of Governors is responsible for formulating national credit policies and for supervising their execution. The members of the Board are also members of the Federal Open Market Committee.

Federal Open Market Committee

This Committee, comprising the seven members of the Board of Governors and five representatives elected by the Federal Reserve Banks, has the responsibility of deciding when and how much to buy or sell in the open market and under what conditions. The Federal Reserve Banks, in their operations in the open market, are required by law to carry out the decisions of the Open Market Committee. The Committee meets in Washington four times a year, or oftener if necessary, and reviews the business and credit situation with the help of its staff, which is drawn from the staffs of the Board of Governors and the Reserve Banks. In view of the importance of open market operations as instruments of Federal Reserve policy the Federal Open Market Committee is a vital organ of the System. In

meetings of the Committee representatives of the Reserve Banks bring to the council table their knowledge of regional conditions and members of the Board present the national aspects of the current situation. Decisions about open market policy are made in the light of such discussion.

Advisory Committees

The Federal Reserve Act provides for a Federal Advisory Council of twelve members, one from each Federal Reserve district, selected annually by the Federal Reserve Bank through its board of directors. Council members are usually selected from among representative bankers in each district. The Council meets in Washington at least four times a year. It confers with the Board of Governors on business conditions and makes advisory recommendations regarding the affairs of the Federal Reserve System. It constitutes a link between the Board and representatives of banking in the twelve districts.

In addition to the Federal Advisory Council the System has a number of conferences and committees that help in reaching understanding on common problems. Of these the most important is the Conference of Presidents of the Federal Reserve Banks, which meets by itself and with the Board at least three times a year.

The Money Market

In order to understand the functions of the Federal Reserve System, the structure of which has been outlined in the preceding pages, it is necessary to place it in the country's financial organization. For Federal Reserve influence reaches beyond the confines of membership in the Federal Reserve System.

For many of the most important responsibilities of the Federal Reserve System, the point of contact with the banking and financial organizations of the country is what is customarily called the "money market." The "money market" has no formal organization or specific place of business as stock markets and commodity markets have, but it is none the less a reality. As far as large transactions are concerned, modern means of communication make the country practically one money market. Well-established borrowers with high credit ratings can negotiate bank loans on much the same conditions in one city as in another; for if money is scarce and dear in one center, the supply tends to be replenished at once from other centers where it is more abundant. Relatively small transactions originating from local needs and represented by loans based on close contact with local conditions are handled by many regional money markets in which rates charged and other conditions vary considerably from place to place. Contacts of these local money markets with the national money market are chiefly through balances kept by local banks with city correspondents. Funds of these regional banks are likely to flow into the financial centers when not required for local use and to be recalled when local demand develops. Through this flow of funds, banks in all parts of the country maintain a degree of contact with the national money market. Their actions have an influence on conditions in that market and they are in turn influenced to some extent by developments in the financial centers. The movements of funds in and out of the national money market are no longer disruptive as they frequently were before the organization of the Federal Reserve System. The Reserve Banks now

stand ready to supply additional funds to money market banks when needed and to absorb redundant funds.

Money market transactions take place through banks and related institutions, but the market comprises the customers of banks as well as the banks themselves. Thus, when the United States Treasury borrows by the sale of its obligations in the money market, the lenders—that is the buyers of the obligations—will be not only banks, but insurance companies, investment trusts, private individuals, and other holders of funds for investment. The money market derives much of its character as a market from the operations of dealers who specialize in buying and selling acceptances and securities. Being the principal financial center, New York City is the heart of the American money market.

As in any other kind of market, demand will sometimes exceed supply, and supply will sometimes exceed demand; rates of interest and discount will sometimes rise and sometimes fall. It is the responsibility of the Federal Reserve authorities to watch over the market, to prevent fluctuations from becoming violent, and through purchases or sales and rate policies to endeavor to maintain orderly credit conditions. Most of the measures taken by the Federal Reserve authorities have their most direct influence on the money market through the medium of bank reserves.

The functions exercised by the Federal Reserve are directed for the most part to the money market as a whole and not to the individual banks. Indeed, the individual banker may not be aware of Federal Reserve action save indirectly. His bank's operations by themselves may disclose only that his customers are bringing in more deposits than they are checking

out, or checking out more than they are bringing in, or are increasing or decreasing their demand for loans. Federal Reserve policies, however, also affect the attitude of banks toward prospective borrowers and toward investment opportunities. When funds are abundant banks lend and invest more freely than when their funds are limited as the result of Federal Reserve action. Nonmember as well as member banks, in fact all financial institutions, are affected by Federal Reserve operations in the money market that make money more or less abundant and more or less costly to borrowers.

CHAPTER VI

RELATION OF FEDERAL RESERVE TO CURRENCY

The Federal Reserve pays out currency in response to public needs and absorbs redundant currency. Its operations result in making the entire currency supply elastic.

AN important purpose of the establishment of the Federal Reserve Banks in 1914 was to provide an elastic currency. Prior to that time the currency had consisted principally of Treasury notes secured by gold or silver and of national bank notes which had to be secured by specified kinds of United States Government obligations that were extremely limited in amount. As a consequence, additional paper money could not be easily supplied when the nation's business so required and currency would become hard to get and command a premium. Currency shortages, together with other related developments, caused several financial panics. It was one of the tasks of the Federal Reserve to prevent such panics by providing a kind of currency that would respond in volume to the needs of the country. The Federal Reserve note is such a currency.

Federal Reserve notes are paid out by the twelve Federal Reserve Banks to member banks on request and are charged to their reserve accounts. Any Federal Reserve Bank can obtain the notes from its Federal Reserve Agent, a representative of the Government, upon pledging gold certificates, so-called eligible paper, or United States Government obligations. Consequently, whenever the public needs more currency, member banks can obtain it from a Federal Reserve

Bank, which in turn can secure it from a Federal Reserve Agent on the pledge of practically any Reserve Bank asset. The only limitation is that the Reserve Banks must have, in their own hands or pledged with a Federal Reserve Agent as part of the collateral for Federal Reserve notes, gold certificates amounting to not less than 25 per cent of the Federal Reserve notes in circulation, in addition to having in their own possession gold certificates amounting to not less than 25 per cent of their deposit liabilities. (Prior to 1945 the required percentage was 40 for notes and 35 for deposits.) Under this system the volume of currency increases when the public's needs become larger, and declines when they become smaller. In the latter case member banks, on receipt of currency from their depositors, redeposit it with the Federal Reserve Banks, which turn it over to their Federal Reserve Agents and redeem the assets previously pledged as collateral for the notes.

As has been stated earlier, Federal Reserve notes constitute about seven-eighths of all the currency in circulation. The other kinds of currency are United States notes (a remnant of Civil War financing), various issues of paper money in process of retirement, silver certificates, silver coin, nickels, and cents. Federal Reserve notes are not issued in denominations smaller than \$5, and so all of the \$1 and \$2 bills (as well as some bills of larger denominations) are in other forms of paper money, chiefly silver certificates and United States notes. At the end of June 1947 the total amount of currency in circulation was 28.3 billion dollars, of which 24.0 billion were Federal Reserve notes. Of the remainder the largest amount consisted of silver certificates. All of the kinds of

currency in circulation in the United States are legal tender and the public makes no distinction among them. It may be said that the Federal Reserve has endowed all forms of currency with elasticity since they are all receivable at the Federal Reserve Banks whenever the public has more currency than it needs, and they may all be paid out by these Banks when demand for currency increases. Therefore, in the subsequent discussion reference will be made to the total of currency in circulation rather than to any particular kind.

It has already been stated that the amount of currency in circulation changes in response to changes in the public's needs. These changes are substantial and frequent. The demand varies for different days of the week, for different days of the month, and for different seasons. It increases before holidays such as Memorial Day, Independence Day, and Labor Day, when many people take trips and need more ready cash. There is an extraordinary increase in the demand before Christmas, when cash is used for Christmas shopping or as gifts. After the holidays, the currency is promptly deposited in the banks by the merchants, hotel keepers, and others with whom it has been spent, and the banks send it to the Federal Reserve Banks.

In addition to seasonal changes in the demand for currency, there are changes that reflect variations in business conditions. When business is good, the demand for currency increases, and when business declines the demand also declines. While most payments in this country are made by check, some types of payments are made principally in currency. The most important of these are pay rolls and retail trade, and statistics show that the amount of currency in circula-

tion fluctuates in response to changes in the volume of these two kinds of payments. There have been occasions, as in 1930-32, when the demand for currency increased because numerous bank failures caused people to withdraw their deposits from other banks. During the war the amount of currency in circulation increased greatly in response to a variety of influences: the growth of pay rolls, retail trade, and travel; removal of many people from their usual places of residence; payments to members of the armed forces; larger incomes of people not in the habit of using banks; and no doubt hoarding of currency for various reasons. The demand for additional currency subsided after the war, but the volume in circulation is still extraordinarily large.

From the point of view of the Federal Reserve and member banks, changes in the demand for currency have a special significance that arises out of our system of reserve requirements. As has been explained, reserve requirements of member banks are expressed as percentages of their deposits. If the public borrows, say \$1,000, from a bank and leaves it on deposit to be transferred from bank to bank by check, the amount of reserves that the banking system must hold increases by only \$150. If, however, the public wishes to withdraw the proceeds of the loan in currency, the member bank must obtain the currency from a Reserve Bank, which will charge the full amount withdrawn to the member bank's reserve account. Consequently the reserves of the bank—and of the banking system as a whole—will diminish by the full \$1,000.

If the banking system had no excess reserves, it would have to obtain additional reserves. In either case, the Federal Reserve could make it unnecessary

for the member banks to borrow from the Reserve Banks, if it thought it desirable to do so, by buying an equivalent amount of Government securities in the open market. Whichever procedure was followed, the demand for Federal Reserve credit and Reserve Bank holdings of discounts and securities would increase; but the increase would be \$150 in the case of the demand for \$1,000 of deposits and \$1,000 in the case of demand for an equal amount of currency. Because the increase in the demand for Federal Reserve credit is so much greater when the public withdraws its funds from banks in currency than when it leaves them on deposit, the volume of discounts and securities held by the Federal Reserve Banks is greatly influenced by changes in the demand for currency.

One effect of the fact that a demand for currency results in a greater demand for Federal Reserve credit than does a similar demand for deposits is that the Federal Reserve Banks' need for reserves to meet their own requirements increases much more when currency is flowing out to the public than when bank credit expansion takes the form of a growth in deposits. The Reserve Banks are required to hold the same ratio of reserves in gold certificates against their Federal Reserve notes in circulation and against their deposits, (25 per cent) but when the public demand is for \$1,000 in currency, the Federal Reserve Banks pay out that amount of Federal Reserve notes—and their reserve requirements increase by \$250. If, however, the public's demand is for \$1,000 in deposits, member bank reserves, which are the deposits against which the Reserve Banks must hold reserves, increase by only \$150 and the reserves needed by the Reserve Banks by only \$37.50 (25 per cent of \$150). Consequently

an increase in currency ties up more than six times as much of the Reserve Banks' reserves as does an identical increase in bank deposits.

It is principally because of the great growth in currency in circulation during the war that the Federal Reserve Banks' ratio of reserves to combined note and deposit liabilities declined to a point where Congress deemed it wise to reduce the reserve requirement of the Reserve Banks from 40 per cent for Federal Reserve notes and 35 per cent for deposits to 25 per cent for each kind of liability. The amount of reserves that the Reserve Banks actually hold, however, is always considerably larger than the minimum required by law. This is because the Reserve Banks are not operated for the purpose of making a profit and consequently do not extend additional credit simply because they have enough reserves to enable them to do so. The volume of Federal Reserve credit to be extended is decided on the basis of demand of the public for currency and bank deposits and of the policies pursued by the Federal Reserve to encourage or discourage this demand. As has already been stated, these policies are determined by considerations of the public interest rather than by the availability of unused reserves at the Federal Reserve Banks.

CHAPTER VII

RELATION OF FEDERAL RESERVE TO GOLD

Gold and Federal Reserve credit are the principal sources of member bank reserves. Consequently gold movements are reflected in changes in the demand for Federal Reserve credit. Gold certificate holdings of the Federal Reserve Banks set the limits of Federal Reserve credit expansion.

THERE is a dual relationship between the Federal Reserve and gold. It may be said that gold is both the basis and the principal competitor of Federal Reserve Bank credit. It is the basis of Reserve Bank credit because the power of the Reserve Banks to create money either through adding to their deposits or issuing Federal Reserve notes is limited by the requirement of a 25 per cent reserve in gold certificates against both kinds of liabilities. Consequently, the total of Federal Reserve notes and deposits must not exceed four times the amount of gold certificates held by the Reserve Banks. Thus gold sets the limits of Reserve Bank credit expansion.

Gold is a competitor of Federal Reserve Bank credit for the reason that, when the United States acquires more monetary gold, additional reserves become available to the member banks without their having to resort to a Reserve Bank for credit. Except to the extent that there is a more than temporary decline in the amount of currency in circulation, gold and Reserve Bank credit are by far the most important sources of member bank reserves. The more gold comes to the country from abroad or from domestic mines, the less demand there is for Reserve Bank credit. These rela-

tionships require more detailed explanation and description.

It should be mentioned first that what the Federal Reserve Banks hold is not gold but gold certificates. By the terms of the Gold Reserve Act of 1934 all the monetary gold in the country, that is all the gold that is not used in industry and the arts, must be turned over to the Treasury, which pays \$35 an ounce for it. The Treasury pays for the gold by check and issues an equivalent amount of gold certificates to the Reserve Banks. The Treasury must hold gold at the rate of \$35 an ounce for all the gold certificates it issues.² Consequently, while the title to the gold is in the Government, the greater part of it is held as cover for the gold certificates in the possession of the Reserve Banks and may not be used for any other purpose. The Reserve Banks are the only institutions permitted by law to hold gold certificates, which are no longer permitted to circulate. Except for a small amount that has not been turned in and that may have been lost, destroyed, or sent abroad, gold certificates are used exclusively as reserves of the Federal Reserve Banks. In practice the Reserve Banks hold only a relatively small amount of the certificates; most of them are represented by a credit in a gold certificate account on the books of the Treasury. This serves the same purpose and saves the unnecessary expense of printing and shipping the notes.

At the end of June 1947, the Treasury held gold in the amount of 21,266 million dollars: of this amount 20,087 million was cover for gold certificates, 156 million was held as the statutory reserve against United States notes, and the remainder, 1,024 million, was in

² The amount of gold that the Treasury must hold as cover for each dollar of gold certificates can be changed only by an Act of Congress.

the general fund of the Treasury. Only the gold in the general fund is at the free disposal of the Treasury.³

The process by which gold produced in the United States or imported from abroad reaches the Treasury and is reflected in additions to the reserves of member banks and Federal Reserve Banks is not difficult to follow. The gold is taken to an assay office of the United States Treasury, which pays for it by check. The seller of the gold deposits this check with a member bank, which in turn deposits it with a Reserve Bank, where it is added to the reserve balance of the member bank and charged to the account of the United States Treasury. The Treasury replenishes its account by issuing an equivalent amount of gold certificates to the Reserve Bank. Assume that the gold is worth a million dollars. Then the gold stock of the Treasury, the gold certificate holdings of the Reserve Bank, the reserve balance of the member bank, and the bank deposit of the seller of the gold will all increase by a million dollars.

On the other hand, if a member bank has the required license from the Treasury to export a million dollars in gold, the member bank draws a check for a million dollars on its reserve deposit, the Federal Reserve Bank turns over a million dollars of gold certificates to the Treasury in exchange for gold, and the Treasury furnishes the gold to the member bank. The result is that gold holdings of the Treasury, gold

³ When gold was revalued from \$20.67 to \$35.00 an ounce in 1934, there accrued to the Treasury 2.8 billion dollars, of which 2 billion was placed in a Stabilization Fund. Most of the remainder was used indirectly to retire national bank notes. In 1947 part of the 2 billion dollars in the Stabilization Fund was used to pay the gold portion of the United States subscription to the International Monetary Fund, and the balance was added to Treasury cash.

certificate holdings of the Reserve Bank, and the reserve balance of the member bank have all been reduced by a million dollars. It should be mentioned that gold movements in recent years have been handled almost exclusively by governments and central banks, so that gold transactions proceed through official channels. Sometimes gold transactions with foreign countries are effected without a physical movement of gold into or out of this country. A foreign central bank may purchase gold in the United States and have it "earmarked," or segregated, for its account at the Federal Reserve Bank of New York, or it may sell some of its earmarked gold to the United States Treasury. Movements in and out of earmarked accounts have the same effect on our banking system as exports and imports of gold. "Earmarked" gold belongs to foreign authorities and is not a part of the monetary gold stock of the United States.

These processes are essentially the same as they were when gold itself was held by the Federal Reserve Banks and when circulation of gold coins was permitted. The only difference is that the title to the gold is in the Treasury and the Reserve Banks hold claims on it in the form of gold certificates. The effects of gold movements on the reserves of Federal Reserve Banks and member banks and on bank credit and the total money supply are unchanged by the altered procedure.

It has been shown that gold imports (or exports) increase (or decrease) the reserves of Federal Reserve Banks and, therefore, their ability to issue notes and create deposits. The effect of gold movements on member bank reserves is the same as that of Federal Reserve discount or open market operations. When

gold comes in, it increases member bank reserves in the same way as would an equivalent amount of discounts or open market purchases by the Reserve Banks; when gold goes out, it diminishes member bank reserves in the same way as would the paying off of a discount by a member bank or the sale of a security by a Reserve Bank. It is for this reason that the demand for Reserve Bank credit diminishes when gold comes in and increases when gold goes out. Sometimes the Federal Reserve makes loans on gold to foreign authorities and this has the same effect on credit conditions in this country as any other advance by a Reserve Bank.

Movements of gold from one country to another are the ultimate means by which international balances are settled. On one side of the balance sheet are all the goods, services, and securities the United States, for example, has sold to foreigners, and on the other side are all the goods, services, and securities the United States has bought from foreigners. There are other items that enter into one or both sides of the balance sheet such as expenditures of tourists abroad, remittances by immigrants to their mother countries, and gifts to foreign countries. If, after all of these items have been taken into account, there is still a balance due to the United States from abroad, it can be met by foreigners broadly in one of two ways: by borrowing in the American market, or by sending gold to the United States. Shipment of gold is usually the last resort employed to cover the balance. In recent years, owing to the world-wide demand for American goods and securities and the scarcity of exportable commodities abroad, the balance due to the United States by foreign countries has been very large. It has been

covered by public and private loans to foreign countries and by large imports of gold. These gold imports have been an important factor in credit conditions in the United States.

Disregarding currency movements in and out of the Federal Reserve Banks, which follow the independent pattern explained in the preceding chapter, gold and Federal Reserve Bank credit are the two principal sources of member bank reserves, which in turn are the basis of member bank credit and of the total money supply. It is for this reason that large gold imports make it more difficult for the Federal Reserve to regulate the supply of money. When member banks receive reserves through gold imports they can expand their loans and investments and thus increase the money supply without being obliged to apply for accommodation to the Federal Reserve Banks. Furthermore, they can increase it by several times the amount of the addition to their reserves through gold imports, just as they can on the basis of any other growth in reserves. At times the Federal Reserve has been able to offset the effects of gold imports by equivalent sales of securities in the open market, and at other times by raising member bank reserve requirements. But there have been times when the Federal Reserve has lacked the means of offsetting the effects of gold imports. At such times its ability to influence the volume of money in the domestic economy is restricted by gold imports. The maintenance of international financial stability, under which gold movements usually remain moderate in amount, is consequently of great importance to the effective execution of central banking functions.

CHAPTER VIII

THE MONETARY EQUATION

Gold movements, currency in circulation, and Federal Reserve credit are the principal factors that influence the volume of member bank reserves—the basis of the money supply. The relationships among these factors may be called the Monetary Equation.

MEMBER bank reserves, the basis of the money supply, and all the principal factors that affect their volume have now been discussed separately and may be brought together in what may be called the monetary equation. The four factors in this equation represent the channels through which all the numerous forces in the country's economic life affect the position of the Federal Reserve Banks and the member banks. It has been shown that gold imports, decreases in currency in circulation, and extension of Federal Reserve credit add to member bank reserves; that gold exports, increases in currency in circulation, and contraction of Federal Reserve credit diminish member bank reserves.

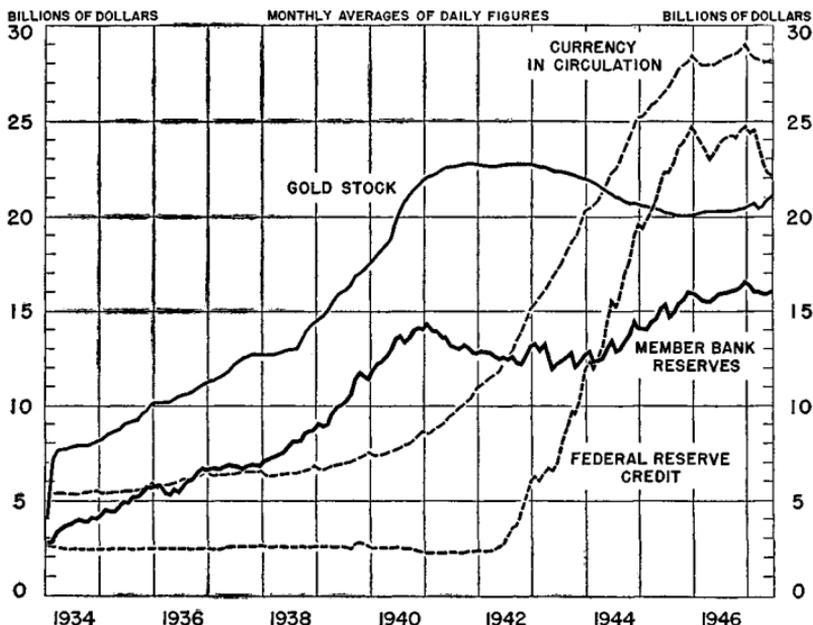
Of the four factors, gold movements are largely independent of Federal Reserve regulation. They depend on international financial conditions. For many years they have not been responsive to relative levels of interest rates, as they were in the past, but have been determined by official policies of central banks and governments. Currency movements in and out of circulation are likewise largely independent of Federal Reserve regulation. They follow their own course in response to business conditions and the public's

habits and preferences. Federal Reserve credit is the balance wheel between these two more or less independent factors and member bank reserves. It is the chief means by which the Federal Reserve, through influencing the volume of member bank reserves, can discharge its responsibility to regulate the volume of bank credit and the total money supply. The Federal Reserve can use its credit powers either to initiate changes in the volume of member bank reserves or to modify changes caused by gold or currency movements. Action to offset the effects of gold and currency movements will or will not be taken, depending on whether these effects are in harmony with current Federal Reserve monetary policy.

Member bank reserves, although affected by the operations of the three other factors in the monetary equation, are not themselves an entirely passive element. They respond to economic forces that are not necessarily reflected in gold or currency movements and their independent responses are subject to regulation by the Federal Reserve. For instance, at times of vigorous demand for bank credit by the public and a consequent growth in bank deposits, member banks need more reserves. The need for additional reserves expresses itself in a demand for additional Reserve Bank credit, which may be met by the Federal Reserve through additional discounts or open market purchases. Also, within limits specified by Congress, the Federal Reserve may change the reserve requirements of member banks.

The course of the four factors of the monetary equation since January 1934, when gold was revalued, is indicated in the chart on page 76. It will be seen that from 1934 through 1941 the principal movement

MAJOR FACTORS IN THE MONETARY EQUATION



was in gold, and that the monetary gold stock of the United States was increasing rapidly. This was a period of depression when the Federal Reserve authorities were pursuing a policy of monetary ease in order to encourage economic recovery. Consequently, they did not tighten Federal Reserve credit in order to moderate the expansionary effects of the gold inflow on member bank reserves. Reserve Bank credit remained stable at 2.5 billion dollars. The effect of the gold movements was in part offset by an increase of currency in circulation but in the main it was reflected in a growth of member bank reserve balances. Gold shipments to this country stopped after we entered the war and our Allies began to receive our exports under lend-lease. In fact, gold flowed out of the United States, reflecting chiefly our large-scale

purchase of goods from South American countries. Currency in circulation went up rapidly and was the principal factor in reducing member bank reserves. In response to increasing demand, Federal Reserve Bank credit expanded tenfold, from 2.5 to 25.0 billion dollars. In 1946, the first year after the war, all the four factors remained relatively stable, and in 1947, with some decrease in currency in circulation and in member bank reserve balances, and a resumption of gold imports, Federal Reserve Bank credit showed a substantial decline.

In a simplified way, the foregoing analysis indicates how the factors of the monetary equation are inter-related, and how ups and downs in any of them are reflected in appropriate changes in one or more of the others. Behind all of the movements shown on the chart is the impetus of innumerable economic forces.

Other factors enter into the monetary equation, but for the most part they are of either minor or transitory importance. Silver purchases by the Treasury, for example, have the same kind of effect on member bank reserves as have imports of gold. These purchases are made by the Treasury in accordance with a policy laid down by law and they are paid for in effect by the issuance of silver certificates. These certificates, issued in accordance with the silver policy and independently of the demand for currency, result in a redundant supply. The surplus currency is returned to the member banks and is deposited for credit to their reserve accounts with the Federal Reserve Banks. The silver operations of the Treasury, however, have a relatively minor effect on monetary conditions. Silver certificates in circulation at the end of June 1947 amounted to about 2 billion of the total of more than 28 billion dol-

lars of currency in circulation, and should be compared with 16 billion of member bank reserve balances. Furthermore, changes in the volume of silver certificates are relatively slow.

For the most part, the remaining factors that affect the volume of member bank reserves reflect various operations of the United States Treasury. Usually they are either temporary in character or minor in amount, but at times they have been of great importance. The financing of World War II, discussed in Chapter XII, is a good example of the far-reaching effects of Treasury operations under abnormal conditions.

CHAPTER IX

SERVICE FUNCTIONS OF THE FEDERAL RESERVE BANKS

The twelve Federal Reserve Banks hold the legal reserves of member banks, furnish currency for circulation, facilitate the collection and clearance of checks, exercise supervisory duties with respect to member banks, and are fiscal agents of the United States Government.

THE reserve accounts which member banks maintain with their Reserve Banks are kept in active use. The member banks are constantly drawing on them and replenishing them in day-to-day transactions. The banks are required to maintain their reserve balances at a level determined in relation to their deposits, but these deposits constantly change. Member banks are permitted to draw on their reserve accounts, but must maintain an average level equal to the legal requirements. Central reserve city and reserve city member banks are permitted to average their reserves over a weekly period and country banks over a semi-monthly period. Transactions in member bank reserve accounts entail a heavy amount of continuous work for the Federal Reserve Banks, which includes:

- Furnishing coin and paper money for circulation;
- Receiving and sorting deposits of currency;
- Receiving, sorting, collecting, and clearing checks.

How Currency is Distributed

There are two principal ways by which any individual gets paper money and coin. Either he draws it out of his bank and has it charged to his account; or

he is paid for his labor, his services, or his merchandise with money that has been drawn out of a bank by someone else. Practically all money, therefore, passes into and out of banks at one time or another.

There are times when banks are called on to pay out more currency than they receive and there are times when they receive more than they pay out. In agricultural regions there is a heavy demand for currency at times when crops are being harvested; in cities there is a heavy demand for currency at certain times in the summer. Moreover, the demand varies for different kinds of currency. Some communities use more coin than others and less paper money, and some use more of certain denominations than others do.

In accordance with this demand, banks provide themselves with the amounts and kinds of currency that the people in their communities want. Member banks depend upon the Federal Reserve Banks for replenishment of their supply, ordering what they require and having it charged to their reserve accounts. Nonmember banks generally get their supplies from member banks.

The twelve Federal Reserve Banks in turn keep a large stock of all kinds of paper money and coin on hand to meet this demand. This includes both Federal Reserve notes, which are their own liabilities, and coin, silver certificates, and United States notes, which they obtain from the Treasury, giving the Treasury credit in its checking account for the amounts obtained.

Before establishment of the Federal Reserve Banks in 1914, the means of furnishing currency for circulation were unsatisfactory. A gap existed between the Treasury and the banking system, and demand for increased circulation could not always be met promptly.

This was the case in the panic of 1907, and as already indicated the experience of that year was one of the things that led to formation of the Federal Reserve System. The currency mechanism provided under the Federal Reserve Act has worked satisfactorily—currency moves into and out of circulation automatically in response to increase or decrease in the public demand. The Treasury, the twelve Federal Reserve Banks, and the thousands of local banks throughout the country form a system of currency distribution that reaches every community, that enables currency to be furnished promptly where it is needed, and that also enables surplus currency to be retired from circulation at times when the public demand subsides.

Collections, Clearances, and Transfers of Funds

Currency is indispensable, yet it is used only for the smaller transactions of present-day economic life. A hundred years ago it was used much more generally. Since then the use of bank deposits has increased to such an extent that payments made by check are now many times greater than payments made with paper money and coin.

The use of deposits is facilitated by the service of the Federal Reserve Banks in clearing and collecting checks through the reserve accounts of member banks. For example, suppose that a manufacturer in Hartford, Connecticut, sells \$1,000 worth of electrical equipment to a dealer in Sacramento, California, and receives in payment a check on a bank in Sacramento. The check is an order on the Sacramento bank to pay the Hartford manufacturer \$1,000. Obviously, the Hartford manufacturer does not want to make a trip to California to collect the \$1,000, nor does he want to

pay postage and insurance on a shipment of currency. He does not ordinarily want currency at all. What he wants is to have \$1,000 placed to his credit in his checking account. Accordingly, he deposits the check in his Hartford bank. The Hartford bank does not want currency for the check; it wants credit in its reserve account at the Federal Reserve Bank of Boston. Accordingly, it sends the check to the Federal Reserve Bank of Boston. The Federal Reserve Bank of Boston sends it to the Federal Reserve Bank of San Francisco. The Federal Reserve Bank of San Francisco sends it to the bank in Sacramento. The bank in Sacramento charges the check to the account of the depositor who wrote it, and either remits the amount to the Federal Reserve Bank of San Francisco or authorizes the San Francisco Reserve Bank to charge the amount to its reserve account. The Federal Reserve Bank of San Francisco thereupon credits the Federal Reserve Bank of Boston. The Federal Reserve Bank of Boston in turn credits the account of the Hartford bank. Thus the check effects the transfer through the Federal Reserve Banks of \$1,000 of deposit credit from the checking account of the dealer in Sacramento to the checking account of the manufacturer in Hartford.

Since promptness is important in collecting checks, the Federal Reserve Banks extend to member banks having a substantial volume of checks payable in other Federal Reserve districts the privilege of sending such checks direct to other Federal Reserve Banks for collection. The Hartford bank might, therefore, have forwarded the \$1,000 check direct to the Federal Reserve Bank of San Francisco for collection, at the same time informing the Federal Reserve Bank of Boston of its action. Credit would then have been given to

the Hartford bank's reserve account by the Federal Reserve Bank of Boston on the basis of this information just as if the check had been sent through Boston.

The Federal Reserve Banks and the American Bankers Association cooperate closely in improving check collection practices. Together they have developed the practice now followed of reporting by wire the nonpayment of any check for \$1,000 or more. Therefore, if the \$1,000 check received by the Hartford manufacturer had been dishonored for any reason, he would have been notified promptly of this fact by wire. Another practice similarly sponsored is that of using a check routing symbol. This is the denominator of the fractional number printed in the upper right-hand corner of many checks. This symbol tells transit clerks at a glance where each check should be sent to facilitate its prompt presentation. The check routing symbol makes it possible for checks to be routed more accurately and more speedily.

Even though a bank is not a member of the Federal Reserve System, it may nevertheless arrange to maintain with the Federal Reserve Bank what is called a "clearing balance." Checks drawn on other banks which are received by the nonmember bank and forwarded by it to the Reserve Bank may be credited to this clearing balance, and checks drawn against the nonmember bank and deposited in other banks may be paid with funds from the balance.

Checks which are collected and cleared through the Federal Reserve Banks must be paid in full by the banks on which they are drawn, without deduction of a fee or charge. That is, they must be paid "at par." The Federal Reserve Banks have greatly shortened and simplified the process of clearing and collecting

checks. By doing so, they have improved the means by which goods and services are paid for and by which monetary obligations are settled; they have also reduced the cost to the public of making payments and transferring funds. The Federal Reserve Banks also handle other items for collection besides checks, such as drafts, promissory notes, and bond coupons.

In order to make transfers and payments as promptly and efficiently as possible, the twelve Federal Reserve Banks maintain a gold certificate fund in Washington called the Interdistrict Settlement Fund, in which each Reserve Bank has a share. Through this fund money is constantly being transferred by telegraphic order from the account of one Reserve Bank to that of another. Many millions of dollars of transfers and payments are made every day, including large transfers for member banks and for the United States Treasury.

Supervisory Functions

Each of the Federal Reserve Banks has an examining staff for the examination of State member banks in its district. The Federal Reserve Banks themselves are examined by the examining staff which the Board of Governors maintains.

Among other supervisory powers exercised by the Federal Reserve authorities with respect to banks are the following:

1. The power to take disciplinary action, including the following specific powers: to remove officers and directors of member banks—after citation in the case of national banks by the Comptroller of the Currency and in the case of State member banks by the Federal Reserve Agent—for continued violation of banking law or for continued unsafe or unsound banking practice;

and to suspend member banks from recourse to the credit facilities of the Federal Reserve System if it is found that they are making undue use of bank credit for speculation in securities, real estate, or commodities.

2. The power to grant permits to national banks to exercise trust powers.

3. The power to grant permits to holding companies so that they may vote the stock of member banks controlled by them. Such companies are usually corporations which own a majority of the stock of one or more member banks.

4. The power to permit member banks to engage in banking abroad by establishing branches in foreign countries and by investing in the stock of corporations organized under the provisions of State laws or of Section 25(a) of the Federal Reserve Act (so-called Edge Act corporations) to engage in international or foreign banking. With the Board's permission, seven large banks situated in New York, Boston, and San Francisco were maintaining foreign branches in June 1947, about seventy-five in all, situated in twenty-one different countries; four of the corporations were operating six branches and two fiduciary affiliates in four foreign countries; and two corporations were conducting their foreign banking business in New York.

Fiscal Agency Functions

The twelve Federal Reserve Banks carry the principal checking accounts of the United States Treasury, handle much of the work entailed in issuing and redeeming Government obligations, and perform numerous other important fiscal duties for the United States Government.

The Government has an enormous amount of banking business to do. It is continuously receiving and spending funds in all parts of the United States. Its receipts come mainly from taxpayers and purchasers of Government securities and are deposited in the Federal Reserve Banks to the credit of the Treasury. Its funds are disbursed mostly by check, and the checks are charged to the Treasury's account by the Federal Reserve Banks.

The Federal Reserve Banks also perform important services for the Treasury in connection with the public debt. When a new issue of Government securities is sold by the Treasury, the Reserve Banks receive the applications of banks, dealers, and others who wish to buy, make allotments of securities in accordance with instructions from the Treasury, deliver the securities to the purchasers, receive payment for them, and credit the amounts received to the Treasury's checking account. The Reserve Banks also redeem securities as they mature, make exchanges of denominations or kinds, handle transfers and conversions, pay interest coupons, and do a number of other things involved in servicing the Government debt. They issue and redeem United States savings bonds and upon request hold them in safekeeping for the owners. For the convenience of the Treasury and also for the convenience of investors in Government securities, it is necessary that there be facilities in various parts of the country to handle such transactions, and the Federal Reserve Banks furnish these facilities. Since the Federal Reserve authorities are constantly in touch with the money and investment markets, the Treasury follows the practice of consulting them for their advice as to the terms and conditions that will affect the sale and the refunding of Government obligations.

Under instructions from the Treasury, each Federal Reserve Bank manages the war loan deposit accounts of banks in its district. These accounts are so called because they were authorized during World War I to expedite the Government's wartime financing; they continued to be used during peace years, and during World War II the Treasury's financing program again made them very important. Nonmember banks as well as member banks of the Federal Reserve System may become "special depositories" of the Treasury and carry war loan deposit accounts by complying with the Treasury's requirements. The principal requirement is the pledge with a Federal Reserve Bank, as fiscal agent of the Treasury, of Government securities or other acceptable collateral that will fully secure the balance in the account. A bank designated as a war loan depository credits to the war loan account the proceeds of its customers' and its own subscriptions to Government securities issued by the Treasury from time to time. As the Treasury calls for the funds, they are transferred to a Treasury account at a Federal Reserve Bank and become available for disbursement. War loan deposit accounts are a convenient and practically indispensable device for the sale of Government securities in large volume. They greatly facilitate the payments for the securities purchased and the Treasury's receipt of the payments.

In connection with the lending and other financial activities of such Government agencies as the Reconstruction Finance Corporation and the Commodity Credit Corporation, the Federal Reserve Banks act as custodians of collateral and securities. This involves not only safekeeping but disbursement of funds upon receipt of proper documents and maintenance of accu-

rate records of large quantities of securities, warehouse receipts for commodities, and other valuable papers which are constantly in process of being received, transferred, and returned, as loans are granted, as partial payments are made, and as maturing obligations are paid off or renewed.

The Federal Reserve Banks are reimbursed by the United States Treasury and other Government agencies for much of the expense incurred in the performance of fiscal agency functions.

Because of its situation in one of the principal financial centers of the world, the Federal Reserve Bank of New York acts as the agent of the United States Treasury in gold and foreign exchange transactions. It acts as depositary for the International Monetary Fund and the International Bank for Reconstruction and Development; it receives deposits of foreign governments and central banks and performs certain incidental services as their correspondent. These services include handling their short-term investments in this market and holding gold under earmark for them in the United States. All the Federal Reserve Banks participate in the foreign accounts carried on the books of the Federal Reserve Bank of New York, which, in these matters, acts as agent for the other Federal Reserve Banks. The Board of Governors in Washington exercises special supervision over all relationships and transactions of Federal Reserve Banks with foreign banks and governments and with the International Monetary Fund and the International Bank.

The service functions that have been described absorb the attention and time of the greater part of the Federal Reserve Bank personnel.

CHAPTER X

BALANCE SHEET OF THE FEDERAL RESERVE BANKS

The credit operations of the Federal Reserve Banks are reflected in their balance sheet. Comparisons for different dates reflect changes in fundamental monetary conditions.

THE major credit functions described in the preceding chapters are reflected in the balance sheet of the twelve Federal Reserve Banks, which is made public every Friday and shows the condition of the Reserve Banks on the Wednesday immediately preceding. The statement appears in the Friday issue of the principal daily newspapers of the country and is usually accompanied by explanatory comment, particularly as to changes in member bank reserves and related factors.

The statement as of December 31, 1946, in condensed form for the most part but with a few items that are not included in the statement published regularly, is given on the following page. Only the most important items are shown separately.

Explanation of Asset Accounts

1. **GOLD CERTIFICATES** on hand and due from the United States Treasury. The law does not permit the Federal Reserve Banks to own gold and forbids the use of gold or gold certificates in circulation, but it authorizes the Treasury to issue gold certificates to the Federal Reserve Banks for the gold it acquires. In exchange for these certificates the Treasury obtains credit in the checking accounts it maintains with the Federal Reserve Banks. The Federal Reserve Banks do not

hold any large amount of gold certificates, however, their actual receipt being unnecessary and cumbersome; instead the Reserve Banks and the Treasury keep a book record of gold certificates *due* the Federal

BALANCE SHEET OF THE RESERVE BANKS, DECEMBER 31, 1946

ASSETS	Millions of dollars
1. GOLD CERTIFICATES on hand and due from U. S. Treasury	18,381
2. Other cash	268
3. U. S. GOVERNMENT SECURITIES	23,350
4. DISCOUNTS FOR MEMBER BANKS	16
5. Acceptances purchased	..
6. Loans on gold	147
7. Other earning assets	1
8. Uncollected items	2,763
9. Miscellaneous assets	80
TOTAL ASSETS	45,006
LIABILITIES	
10. FEDERAL RESERVE NOTES	24,945
11. Deposits:	
a. RESERVES OF MEMBER BANKS	16,139
b. U. S. Treasurer's account	393
c. Other deposits	822
12. Deferred availability items	2,020
13. Miscellaneous liabilities	9
TOTAL LIABILITIES	44,328
CAPITAL ACCOUNTS	
14. Capital stock	187
15. Surplus	467
16. Other capital accounts	24
TOTAL LIABILITIES AND CAPITAL ACCOUNTS	45,006

Reserve Banks. This account includes both the relatively small amounts of certificates actually delivered to the Federal Reserve Banks and the much larger amount *due* them from the Treasury. The procedure is a method by which the Government makes monetary use of its gold; instead of putting the gold itself in circulation, the Treasury pledges it while re-

taining physical possession of it. The arrangement gives the Reserve Banks an asset in the form of a claim on the United States Treasury, evidenced on the books of the Treasury.

To meet the requirements of the law, a portion of the gold certificates due the Reserve Banks is set aside as a redemption fund for Federal Reserve notes; the amount of this fund, which was 794 million dollars on December 31, 1946, is included in the total shown on the statement.

2. Other cash is coin and paper money (excluding gold certificates and Federal Reserve notes) in the Reserve Bank vaults.

3. UNITED STATES GOVERNMENT SECURITIES comprise Treasury bills, Treasury certificates, Treasury notes, and United States bonds. Since Reserve Bank purchases of securities, as explained in earlier chapters, are a means of creating Reserve Bank credit—and in recent years the most important means—the amount of securities held also measures the amount of Reserve Bank credit created by such purchases. Accordingly, it is one of the most significant items of the Reserve Bank statement and reflects one of the most important aspects of the central banking function. Open market transactions are authorized by the Federal Reserve Act, Sections 12A and 14.

All United States securities owned by the Reserve Banks on December 31, 1946, had been purchased by them from previous owners—banks, dealers in securities, and others. The law authorizes the Reserve Banks to hold at any one time as much as 5 billion dollars of Government obligations acquired directly from the Treasury. Such direct transactions are infrequent, however; during the year 1946 they did not occur at all.

4. DISCOUNTS FOR MEMBER BANKS. This item shows

the amount of Federal Reserve Bank credit created by lending to member banks.

5. Acceptances purchased. These are prime bankers' acceptances purchased by the Federal Reserve Banks at the established buying rate when offered for sale by bankers, dealers, and others. At the date of this statement the Federal Reserve Banks held no acceptances. These purchases are authorized by the Federal Reserve Act, Section 14, paragraph 1.

6. Loans on gold. These are loans made to foreign central banks and foreign governments on the security of gold owned by them. These loans are authorized by the Federal Reserve Act, Section 14, paragraph 2.

7. Other earning assets in recent years have comprised loans to provide working capital for industry, as authorized by Section 13(b) of the Federal Reserve Act, and advances to individuals, partnerships, and corporations on the security of direct obligations of the United States, as authorized by Section 13, paragraph 13 of the Act.

8. Uncollected items are checks and other cash items deposited with the Federal Reserve Banks and still in process of collection at the time the statement is made up.

9. Miscellaneous assets consist of several items, of which the principal are the bank premises owned by the Federal Reserve Banks, the premium on securities owned, and accrued interest receivable.

Explanation of Liabilities and Capital Accounts

10. FEDERAL RESERVE NOTES, which constitute the principal part of currency in circulation, have been described in previous chapters.

11. Deposits consist mainly of the RESERVES OF

MEMBER BANKS. They also include checking accounts of the United States Treasury and other governmental agencies, deposits of foreign banks, and clearing accounts maintained by nonmember banks authorized by Section 13 of the Federal Reserve Act.

12. Deferred availability items are of technical significance. The account arises from the fact that Federal Reserve Banks do not give immediate credit for all checks deposited with them for collection, the credit being deferred according to a time schedule which allows for the time taken by the checks in going through the mail to the banks upon which they are drawn. Since the time actually taken is often greater than allowed in the schedules, the result is that some credit is given before the checks are collected. This is reflected in the fact that "uncollected items," shown among the assets (No. 8), is generally considerably larger than "deferred availability items." The difference represents an amount of credit being extended by the Federal Reserve Banks and is usually referred to as Federal Reserve Bank "float."

13. Miscellaneous liabilities consist of several items, the principal ones being discount on bills and securities, miscellaneous accounts payable, and accrued dividends.

14. All of the capital stock of the Federal Reserve Banks is owned by banks that are members of the Federal Reserve System. See Chapter V.

15. Surplus is governed by Sections 7 and 13b of the Federal Reserve Act. Section 7 surplus is accumulated from the earnings derived by the Reserve Banks from their loans and investments. Ordinarily these earnings are adequate to cover the expenses of the Reserve Banks, the 6 per cent per annum

dividend payable to member banks, and additions to surplus. Around the year 1920 and again in very recent years the net earnings of the Federal Reserve Banks were large; but at other times they have been relatively small. Some of the Federal Reserve Banks in certain years have operated at a loss. The surplus can be drawn on to meet deficits and pay dividends in years when operations result in loss, but it cannot be distributed otherwise to the stockholding member banks. The law provides that, if the Reserve Banks are dissolved, any surplus is to be paid to the United States.

Section 13b surplus represents funds received from the Secretary of the Treasury for the purpose of making loans to industry in accordance with Section 13b of the Federal Reserve Act, plus or minus the net earnings or net loss arising from using such funds. This surplus amounted to 27 million dollars at the date of the statement.

16. Other capital accounts at the date of this statement comprised only reserves for contingencies amounting to 24 million dollars. At other times it will include also unallocated net earnings for the year to the date of the statement.

Historical Comparison

It is plain from a glance at the statement that four accounts are by far the largest, namely, gold certificates and Government securities, (1) and (3) among the assets, and Federal Reserve notes and reserves of member banks, (10 and 11a) among the liabilities. These accounts are also the most significant, for they reflect the essential central banking operations of the Federal Reserve Banks, as described in preceding chapters. In

the course of years these accounts have undergone important changes in volume resulting from changed economic and monetary conditions generally; and to indicate these changes the figures at the end of 1920, 1930, 1940, and 1946 are tabulated as follows:

COMPARISON OF BALANCE SHEETS OF FEDERAL RESERVE BANKS IN
FOUR DIFFERENT YEARS

(In millions of dollars, as of December 31)

Account	1920	1930	1940	1946
ASSETS				
1. Gold certificates on hand and due from U. S. Treasury . . .	12,060	12,941	19,760	18,381
2. Other cash	264	220	275	268
3. U. S. Government securities . .	287	729	2,184	23,350
4. Discounts for member banks . .	2,687	251	2	16
5. Acceptances purchased	260	364	.....	.....
6. Loans on gold . . . . .	.....	.....	1	147
7. Other earning assets . . . . .	.....	8	8	1
8. Uncollected items, etc.	668	607	944	2,763
9. Miscellaneous assets	28	81	88	80
Total assets	6,254	5,201	23,262	45,006
LIABILITIES				
10. Federal Reserve notes	23,553	1,663	5,931	24,945
11. Deposits				
a. Reserves of member banks . .	1,781	2,471	14,026	16,139
b. U. S. Treasurer's account . .	57	19	368	393
c. Other deposits	23	28	1,732	822
12. Deferred availability items . . .	519	564	833	2,020
13. Miscellaneous liabilities	19	11	2	9
Total liabilities	5,952	4,756	22,892	44,328
CAPITAL ACCOUNTS				
14. Capital	100	170	139	187
15. Surplus, Sec. 7	202	275	157	440
16. Surplus, Sec. 13b . . . . .	.....	.....	27	27
17. Other capital accounts	(³)	(³)	47	24
Total liabilities and capital accounts	6,254	5,201	23,262	45,006

¹ Includes gold owned by Federal Reserve Banks.

² Includes 217 million dollars of so-called Federal Reserve "Bank notes," which are no longer issued.

³ Included in "miscellaneous liabilities."

The first thing to be noted in this tabulation is that a number of items, including several of the most important, have greatly increased since 1920. On the other hand, one important account, discounts for member banks, is much smaller than it used to be.

GOLD CERTIFICATES. The increase in the amount of gold certificates reflects the enormous increase in this country's stock of gold that occurred principally in the decade between 1930 and 1940. It also reflects the revaluation of gold in terms of dollars. In 1934, by the terms of the Gold Reserve Act the value of gold was changed from \$20 an ounce to \$35 an ounce and thereby the value of the stock of monetary gold in the United States was raised from 4 billion to about 7 billion dollars. Domestic production of gold also increased the stock, but by far the greatest factor was the shipment and sale of foreign gold to this country. Between January 31, 1934 and December 31, 1940, imports of gold exceeded exports by more than 14 billion dollars. The Treasury purchases all gold produced in the United States or imported. By issuing gold certificates to the Federal Reserve Banks, as has been explained earlier, the Treasury obtains credit in the checking accounts it maintains with those Banks.

During the war the country's stock of gold declined somewhat but more recently it has been growing rapidly. The sale of gold by the Treasury entails reduction in the amount of gold certificates issuable by it to the Federal Reserve Banks.

GOVERNMENT SECURITIES and DISCOUNTS FOR MEMBER BANKS. The increase in United States Government securities reflects several important developments. In 1920, Federal Reserve Bank credit was being furnished mainly in the form of discounts for

member banks, but a few years later member banks had to a great extent ceased to borrow at the Reserve Banks. At the same time, open market purchases of Government securities had become important as a means of supplying member banks with the reserves they had previously obtained by rediscounting.

Between 1930 and 1940, member banks borrowed at the Reserve Banks less than in the decade before, and the Federal Reserve authorities purchased more Government securities. The increased purchases occurred mainly in the years 1931, 1932, and 1933, when the Reserve Bank holdings rose from 729 million dollars at the close of 1930 to 2,437 million at the close of 1933. This was the period of economic depression and banking weakness that culminated in the crisis of March 1933, and the Reserve authorities bought securities for the purpose of easing the money market and offsetting the decline in the volume of money that resulted from liquidation of bank loans. The Reserve Bank portfolio of Government securities remained close to 2,500 million dollars till the end of the decade.

The more recent increase between 1940 and 1946 in the amount of Government securities held occurred principally in the years of United States participation in the war, 1942-1945. In this period the public debt grew from 58 billion to 278 billion dollars, Government securities were regularly offered in the market, and the Reserve authorities were under obligation to keep the market orderly and stable. The principal drain on member bank reserves during this period arose from the extraordinarily large demand for currency. Federal Reserve Bank holdings of Government securities became very large during this period, reaching a high point of nearly 25 billion dollars in the latter part of 1945.

FEDERAL RESERVE NOTES. The volume of Federal Reserve notes outstanding was unusually high in 1920. In that year, which was one of high prices, the amount of currency in circulation was larger than ever before, and Federal Reserve notes made up by far the greater part of total circulation. For the remainder of the decade the volume of notes was substantially less. But in 1931, 1932, and 1933 it greatly increased as a result of the banking weakness of that period and the general withdrawal of deposits from banks in currency. Thereafter the amount rose steadily until 1940. In 1940 the volume of Federal Reserve notes began to increase far more rapidly than at any previous time, in response to accelerated demand for currency. At the end of the war in 1945 the total currency in circulation was over 28 billion dollars. This wartime increase arose from several causes, the most important of which were that employment was general, wages were high, and a relatively large number of persons kept more money on hand than usual. The volume of Federal Reserve notes is directly affected by the public demand for currency. When more currency is wanted, the public obtains it through the banks, and the amount of Federal Reserve notes increases; when the public wants less it returns the surplus through the banks and the amount decreases.

RESERVES OF MEMBER BANKS. Increases that have occurred since 1920 in the country's gold stock and in the amount of Reserve Bank credit have tended directly to augment the volume of member bank reserves. On the other hand, member bank reserves are directly reduced when depositors withdraw currency from banks. Hence, roughly speaking, bank reserves equal the total of monetary gold and Re-

serve Bank credit, less the amount of currency in circulation. Since all three of these formative elements reflect in some way the basic economic and political conditions of the whole world, so too do member bank reserves. For instance, the tremendous growth in the monetary gold stock between 1930 and 1940 reflected the unsettled conditions that were driving gold to the United States from other countries; the great expansion in Reserve Bank credit that resulted chiefly from purchases of United States Government securities during World War II reflected the immense increase in the public debt necessitated by participation in a global war; and the expansion of currency in circulation during the war reflected the magnitude of the war effort on the home front. The volume of member bank reserves, therefore, is not the product of domestic policy alone; indirectly it is also the product of conditions arising from developments all over the world.

The relation of member bank reserves to the other accounts in the Federal Reserve Bank statement may be illustrated by adding together gold certificates and Federal Reserve Bank credit and subtracting from the total the amount of Federal Reserve notes. The remainder, as shown in the following examples taken from statements for the years indicated, is not greatly different from the amount of member bank reserves.

	1920	1930	1940	1946
Gold certificates, etc.	2,060	2,941	19,760	18,381
U. S. Government securities.....	287	729	2,184	23,350
Discounts for member banks....	2,687	251	2	16
			<hr/>	<hr/>
Total	5,034	3,921	21,946	41,747
Federal Reserve notes	3,553	1,663	5,931	24,945
			<hr/>	<hr/>
Remainder	1,481	2,258	16,015	16,802
Reserves of member banks.....	1,781	2,471	14,026	16,139

To account for differences between the actual amount of member bank reserves and the remainder shown by addition and subtraction of the other items would require the introduction of numerous items not otherwise relevant to this discussion. It is sufficient for present purposes that the existence of a close relation between member bank reserves and the other accounts be understood.

The principal other changes in the Federal Reserve Bank statement over a period of years have occurred in items 8 and 12 ("uncollected items" and "deferred availability items"). The recent great increase in these accounts, which reflect the volume of bank checks deposited with the Federal Reserve Banks and in process of collection, is a consequence of the greatly increased volume of monetary payments in recent years.

CHAPTER XI

BANKING AND MONETARY AGENCIES OTHER THAN THE FEDERAL RESERVE

There are several agencies other than the Federal Reserve with functions and responsibilities in the same general field but no other that has the primary responsibility for regulating the money supply.

SINCE the Federal Reserve System is not the only official agency in the monetary and banking field, its operations cannot be fully understood without some reference to certain other agencies. The most important of these are the Treasury Department, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the State bank supervisors, certain Government agencies that make loans and that guarantee loans made by banks, and certain international lending organizations. These are described briefly in the following paragraphs.

The Treasury is the Government department with which the Federal Reserve System is most closely related. The reason for this is twofold. In the first place, a great part of the work of the Federal Reserve Banks is performed by them as fiscal agents of the Treasury; and in the second place, the Federal Reserve authorities have the responsibility of regulating credit conditions in general and particularly those in the money market, where the Treasury constantly goes to borrow money. It is important to the Treasury that Government financing be facilitated by the maintenance of a stable and orderly market for Government securities and it is important to the Federal

Reserve that the nature and timing of Treasury offerings and redemptions be in harmony with current monetary policies. The Treasury also has special or occasional operations—for example, the purchase and sale of gold and silver—that affect bank reserves and hence the responsibilities of the Federal Reserve authorities. The close relationship of Treasury and Federal Reserve functions makes necessary a constant cooperation between the two organizations, apart from the fact that the Federal Reserve Banks are fiscal agents of the Treasury.

The Office of the Comptroller of the Currency is a bureau of the Treasury Department. It was established in 1863 to supervise the system of national banks whose organization under Federal charter was authorized that year. When the Federal Reserve System was established fifty-one years later and national banks in the continental United States were required to become members of the System, they became subject to regulations of the Federal Reserve authorities also.

The Federal Deposit Insurance Corporation was established in 1933. Deposits in national and State bank members of the Federal Reserve System are insured up to \$5,000 for each depositor, as are the deposits of nonmember banks that voluntarily qualify for insurance. At the present time most of the nonmember banks are qualified. Banks whose deposits are insured by the Corporation are in certain respects subject to its regulations and insured nonmembers are subject to examination by it.

In addition to the two Federal agencies just mentioned, each of the forty-eight States supervises banks incorporated under its law. In this situation, it is necessary for the various agencies with supervisory

responsibilities to cooperate and consult with one another for the development of consistent standards and procedures in bank examination.

Congress has given certain powers to make loans, largely with public funds, to a number of Federal agencies. These agencies are principally the Reconstruction Finance Corporation, which under certain conditions is authorized to lend to business enterprises, financial institutions, municipalities, and public agencies and corporations; a group of agricultural credit agencies under the Farm Credit Administration, which make various types of agricultural loans; the Rural Electrification Administration, which makes loans to encourage the use of electricity in rural areas; and the Export-Import Bank, which makes loans, mostly foreign, to promote the export and import trade of the United States. The Federal Reserve Banks are authorized to act as fiscal agents of many of these organizations. The loans made by these and other agencies are intended to supplement the lending activities of commercial banks, particularly in fields where the latter are inhibited from making loans by law, custom, or the nature of the risk. Besides making loans, some of the foregoing Federal agencies and certain others have been authorized by Congress to guarantee and insure loans made by banks and other financial institutions. In particular, the Veterans' Administration has been authorized to guarantee and insure loans (so-called "G.I." loans) that may be obtained from banks and other institutions by veterans of World War II, and the Federal Housing Administration, under certain conditions, can insure home mortgage loans made by banks and other financing institutions.

Two international institutions, the International

Monetary Fund and the International Bank for Reconstruction and Development, which have offices in Washington, D. C., have functions that relate them closely to the Federal Reserve System. They are *not* part of the American banking and monetary system, but they affect the domestic money market through their operations in gold and through the influence they have on the demand for credit in this country. The United States shares with other nations the ownership and control of these two institutions and has representatives on their directing bodies appointed by the President with the Senate's approval. In order to coordinate the policies and operations of these representatives and of all agencies of the Government that make foreign loans or engage in foreign financial transactions, Congress has established the National Advisory Council on International Monetary and Financial Problems, whose members are *ex officio* the Secretary of the Treasury, who is Chairman of the Council, the Secretary of State, the Secretary of Commerce, the Chairman of the Export-Import Bank, and the Chairman of the Board of Governors of the Federal Reserve System. Any Federal Reserve Bank, upon request of the International Monetary Fund and the International Bank, may act as the depository and fiscal agent of these institutions.

CHAPTER XII

WAR SERVICE OF THE FEDERAL RESERVE

During the war the primary duty of the Federal Reserve was to facilitate the financing of military requirements and of production for war purposes.

IN time of war the duty of the Federal Reserve, as of everyone, is to support the country's war effort. The Federal Reserve provides machinery for aiding the Government to finance the enormous expenditures necessitated by war. The United States has participated in two world wars since the establishment of the Federal Reserve, and in both wars the Reserve System has taken an active part in helping to finance the requirements of the Government. The amount of money to be spent to fight a war is determined by Congress, which also has the responsibility of deciding how much of the money shall be raised by taxation. The difference between the revenue raised by taxes and total expenditures has to be met by borrowing. It is the responsibility of the Treasury Department to determine the character of obligations on which the Government will borrow and the rate of interest it will pay to investors. In these matters the Federal Reserve is consulted and makes recommendations, particularly with respect to how the war needs may be met with as little inflationary effect as possible. After policy decisions have been made, it is the duty of the Federal Reserve to see to it that the banking system is in a position to absorb any public debt essential for war expenses that is not purchased by investors other than banks.

It was the policy of the Treasury and the Federal Reserve during the war to make every effort to encourage nonbank investors to absorb as much as possible of the public debt, and to leave as little as possible for the banks. The reason for this is apparent from preceding chapters. When an individual or a corporation pays taxes or buys a Government bond, the Treasury comes into possession of money that was already in existence and owned by the taxpayer or bond purchaser. There is no addition to the money supply and no additional upward pressure on prices, except to the extent that funds previously held idle may have been put to use, or to the extent that the bond buyer or taxpayer borrows from a bank to pay taxes or to buy Government securities. As the Treasury acquires more money with which to buy war goods, someone else has correspondingly less money to spend on civilian goods. When, however, a bond is bought by the banking system, no one gives up his money to the Government; new money is created in the form of a bank deposit to the credit of the Government. As the Government spends this money and it passes into the hands of the public, it is added to the general money supply and becomes available for the purchase of such civilian goods as are in the market.

Since production for civilian use is limited in wartime by the concentration of the nation's effort on production for war purposes, the additional money arising from bank purchases of Government bonds may result in more money for civilian purchases than there are goods and services to be bought at existing prices. The extra money cannot lead to increased output, since the industrial plant and manpower are already in use to their full capacity. Consequently, if

the extra money is used, it results in an upward pressure on prices. It becomes an inflationary influence, which during the war is held in check by direct controls over prices, by rationing, and by allocation of materials.

In order to avoid or minimize this inflationary pressure during the war, many things were done to channel Government bonds into the hands of individuals and corporations; in other words, to have the bond purchases absorb existing and current savings rather than bring additional money into existence. Campaigns to place War Savings bonds, drives to sell war bonds, and other measures were actively pursued by the Treasury and supported by the Federal Reserve. But the Federal Reserve had the responsibility for seeing that the banks had enough funds to absorb the Government securities that were not taken by non-bank purchasers. Prevention of inflation had to become secondary to providing the sinews of war. The Federal Reserve was able to regulate security loans and consumer credit by methods which did not interfere with the total supply of money and to use its influence to discourage speculative purchases of Government securities by the use of bank credit. But it had to suspend the use of general methods of restraining the growth in the money supply.

At the outbreak of the war the Federal Reserve declared its determination to see to it that banks had adequate funds for war needs. This undertaking was carried out throughout the war period. For the purpose the Federal Reserve established a low rate for discounts based on short-term Government securities. It agreed to purchase, at a fixed rate of $\frac{3}{8}$ per cent, all three-month Treasury bills offered in the market,

and by open market purchases supported all Treasury issues that needed support. With this assistance from the Federal Reserve, the Treasury was able to meet the enormous war needs of the Government at extremely low rates and to maintain at all times a strong market for United States Government obligations.

In addition to this the Federal Reserve acted as the agent of the Government in its undertaking to guarantee or provide bank loans to contractors who could not otherwise have financed production for the war effort. This service, which employed the organization and contacts of the Federal Reserve in efficiently directing many billions of dollars into war production, made an important contribution to the war effort.

By cooperation of the War Department, the Navy Department, and the Maritime Commission with the War Production Board and the Federal Reserve authorities, an arrangement was developed, and authorized by Executive Order of the President, for insuring or guaranteeing loans that were needed to finance essential war production. The loans were made by commercial banks or other lending institutions which, to protect themselves from excessive risk, often obtained guarantees covering portions of loans. The guarantee was given by the War Department, the Navy Department, or the Maritime Commission, depending on which was primarily interested in the contract which the loan was to finance. The Federal Reserve Banks acted as their agents.

For example, a manufacturer may have had machinery for the production of cartridges but not money enough to buy the necessary materials or to pay the necessary wages. A commercial bank may not have

felt justified in lending him the amount he needed unless it had a guarantee. In such a case the War Department, in order to obtain the cartridges, would be willing to give that guarantee, and the bank would be willing to pay a fee for it. An agreement would accordingly be made by which the War Department obligated itself to purchase 75 per cent or another designated portion of the loan upon the bank's demand. The manufacturer would then be granted the loan and could begin making the cartridges ordered by the War Department. Such guarantees were authorized for 8,771 loans aggregating 10.3 billion dollars.

Aggregate results of financing the war may be summarized as follows: from the middle of 1940 to the end of 1945 the United States Government had to raise the incredibly large sum of 380 billion dollars, chiefly for war purposes. Of this amount, 153 billion was raised by taxation, 132 billion came from sales of securities to nonbank investors, and 95 billion was financed by bank credit. As a consequence, and notwithstanding the efforts to minimize bank participation in war finance, the total of bank deposits and currency increased 112 billion dollars, that is, about threefold, during the war. In addition, the public (including Federal and State government agencies and trust funds, insurance companies, other businesses, and individuals) holds 130 billion dollars of United States Government obligations, which it is in a position to sell or cash at any time and thereby to acquire more money with which to purchase goods and services. The inevitable heritage of war is an enormous expansion of money and a grave threat of inflation.

With the termination of the war the Federal Reserve must once more direct its policies toward regula-

tion of the money supply. Its task is made extremely complex and difficult by the great financial dislocation caused by the war. The vast amount of Government securities held by individuals, corporations, endowments, and savings institutions, including insurance companies, makes it desirable to continue to protect these securities from wide variations in price. Furthermore, a rise in the cost of money would increase the cost of the debt to the Government, that is, to the taxpayers. While the interest rate at which the Government was able to borrow was low, the annual cost of the debt is nevertheless 5 billion dollars. If the general level of interest rates went up, the cost of the debt, as it came due and was refunded, would increase further. In these circumstances the Federal Reserve must rely in part on selective rather than general methods of control and must also develop new techniques adapted to new domestic and world conditions.

These serious problems are before the Federal Reserve at the present time and it is too early to describe the methods that it will be able to devise and be authorized to use in meeting the new situation. But, whatever changes in technique the Federal Reserve may have to adopt, its general objective remains unchanged. To repeat what has been said before, this objective is to contribute to the maintenance of stable production and values, high employment, and a rising standard of living.

CHAPTER XIII

SUMMARY

The Federal Reserve as it operates at present is the product of constant adaptation to changing conditions. It has to deal today with monetary problems that are far different from those that occasioned its establishment.

THE basic powers of the Federal Reserve authorities relate to money and banking. They are monetary in that they deal with the means of payment, which consists in part of currency and in part of deposit credit.

Before the Federal Reserve System was organized, the outstanding defects of American banking were diagnosed as "inelastic currency" and "scattered bank reserves." Establishment of the System promptly cleared the way for the anticipated improvements. Elasticity of the currency was achieved. The machinery for note issue proved adequate for the purpose and in time was found to work almost automatically. For many years, including the war period, the volume of currency in circulation has expanded and contracted smoothly and efficiently in accordance with the varying requirements of the public, and the currency function of the Federal Reserve Banks has become a matter of routine, virtually free from uncertainties and difficult administrative problems.

The reserve function, on the other hand, has assumed far greater importance. It has come to be recognized as much more than a matter of "pooling" or "mobilizing" scattered reserves and making available to banks in need of funds the surplus reserves of banks that

have more than they need. It involves a power to *create* reserve funds and to *extinguish* them. If the funds lent by a Federal Reserve Bank, or paid by it for securities, were merely the funds deposited with it by its member banks, the loans and the purchases would not enlarge the total volume of reserve funds. In fact, however, they *do* enlarge the total volume of reserve funds. By acquiring the obligation of a member bank or other obligor and in exchange crediting an equivalent amount to the reserve balance of the member bank, a Federal Reserve Bank expands its assets and its liabilities, and these continue expanded so long as the obligation is held. The action is creative.

This does not mean that the power of the Federal Reserve authorities is unlimited. The law limits their power to expand their deposits—that is, the reserve balances of member banks—and to expand their note issue by requiring that these liabilities not exceed four times their holdings of gold certificates. Moreover, Federal Reserve action does not result in an increased *use* of bank credit unless there is a demand from the public for the credit. The Federal Reserve authorities are able to expand bank reserves to meet almost any conceivable demand for credit once that demand comes into existence and also to discourage a demand for credit when it shows signs of developing speculative excesses. They possess no means, however, of impelling bank customers to borrow or of impelling bankers to lend.

The powers of the Federal Reserve to regulate the volume of bank credit, or money, are one of the important factors in determining economic conditions. The purpose of Federal Reserve functions, like that of governmental functions in general, is the public wel-

fare. Federal Reserve policy must be viewed in the light of its objective—which is to maintain monetary conditions favorable for an active and sound use of the country's productive facilities, a high level of employment, and a rate of consumption reflecting widely diffused well-being. In carrying out their policy, the Federal Reserve authorities take into account the factors making up the prevailing situation and use their powers in the way that seems to them best calculated to contribute, with other agencies, to economic stability and progress.

In review, the principal means through which the Federal Reserve authorities may exercise their powers over bank credit are the following:

DISCOUNTS. Through the power to raise or lower Reserve Bank discount rates and the power to discount and make advances, the Federal Reserve authorities are able to influence both the cost and availability of bank credit and to supply individual banks with additional reserve funds.

OPEN MARKET OPERATIONS. These operations directly affect the volume of reserves: purchases of securities by the Federal Reserve authorities supply banks with additional reserve funds, and sales of securities diminish the volume of such funds. As a means of credit expansion, these operations are limited by the reserve position of the Federal Reserve Banks, and at the commercial bank level by the demand for bank credit. As a means of credit contraction, they are limited by the amount of securities held by the Reserve Banks.

RESERVE REQUIREMENTS. Raising or lowering requirements as to the reserves which member banks maintain on deposit with the Federal Reserve Banks has the effect of diminishing or enlarging the volume of

funds that member banks have available for lending. Under existing law, the requirements may be raised from the present level for New York and Chicago member banks but not for other member banks; they may be reduced by one-half at banks outside New York and Chicago and by about one-third at banks in those cities.

SELECTIVE CONTROLS. As has been stated in earlier chapters, the foregoing powers directly affecting the volume of member bank funds have no immediate effectiveness with respect to the utilization of those funds. In the field of stock market speculation, however, the Reserve authorities exercise direct control. During the war and early postwar period they also exercised direct control in the field of consumer credit. The Reserve authorities may also exercise limited influence over the credit practices of banks through bank supervision and examination.

In addition to the credit functions described, the Federal Reserve Banks perform certain services of which the most important are: holding member bank reserve balances; furnishing currency for circulation; facilitating the clearance and collection of checks and the transfer of funds; and acting as fiscal agents, custodians, and depositaries of the United States Government.

In recent years the most important problems affecting Federal Reserve policy have arisen from war. The country's war effort had to be financed, and the share of the Federal Reserve in that task called for the most careful and extensive use of its powers. A stable market had to be maintained where the credit needs of the Government and of industry could be satisfied promptly and at low cost. The Federal Reserve

authorities maintained such a market by ready purchases of Government obligations at par, by low money rates, by arranging guaranteed credit for war production, and by restraint upon the use of credit for speculating in securities and for financing civilian consumption. But war financing, a part of which had to be met by selling Government obligations to the banks, left the country in possession of a supply of money far greater than needed in peacetime and potentially inflationary in its influence. Furthermore, the size and distribution of the public debt greatly complicate the task of regulating the money supply.

The Federal Reserve System was established in an era when the monetary problem was one of scarcity and rigid limitation on expansion; it has come to operate in an era when the problem is instead one of superabundance and of rigidities in the way of contraction.

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