

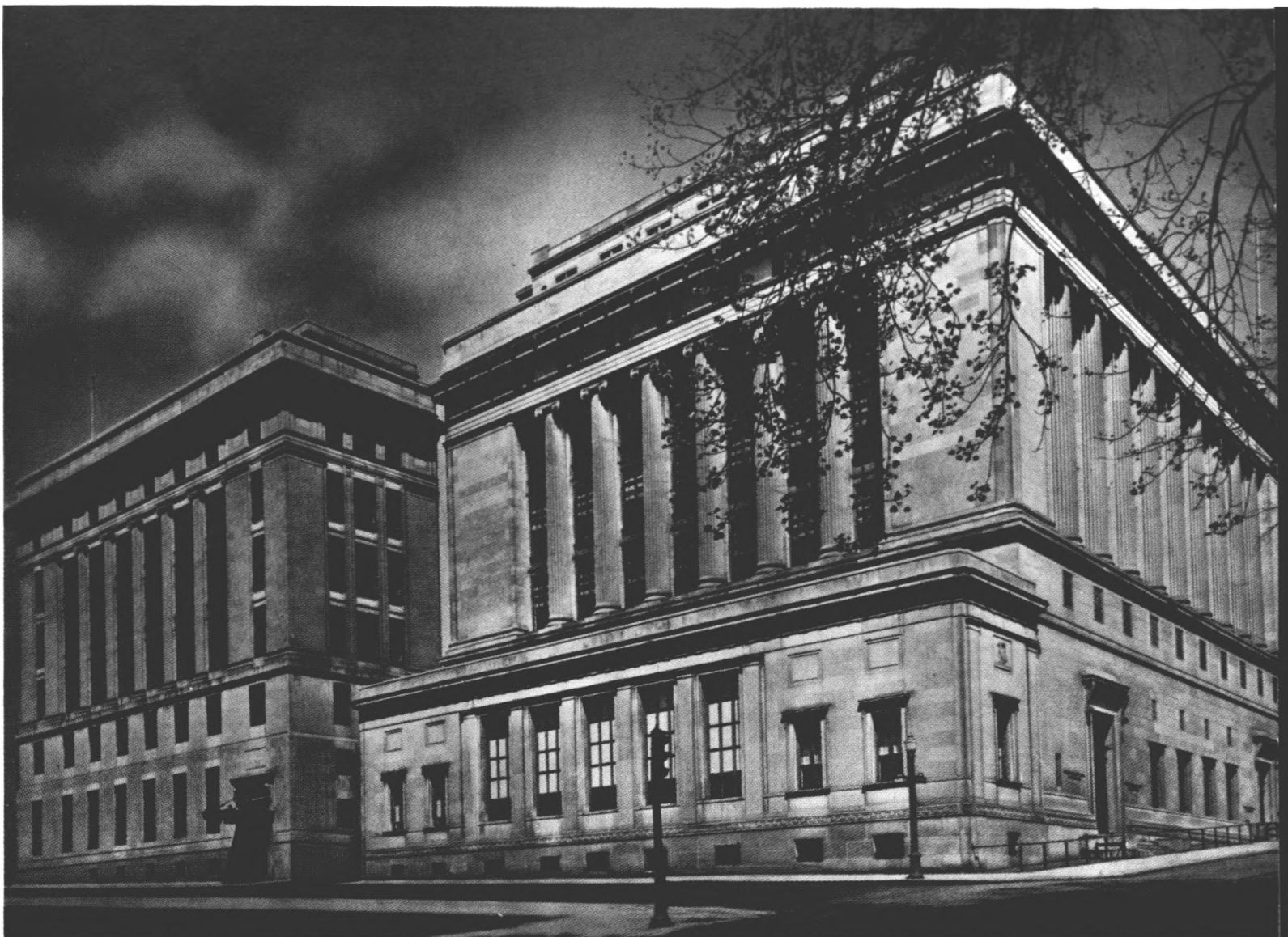
# Fed. Res. Bk of Richmond Annual Reports



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Nationalbank, Austria • Conseil Monetaire de la Republique du Congo • **FEDERAL RESERVE BANK OF RICHMOND • 1962 • ANNUAL REPORT**  
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**Federal Reserve Bank of Richmond**  
**Branches in Baltimore and Charlotte**  
**1962 Annual Report**



**FEDERAL RESERVE BANK OF RICHMOND**

TO OUR MEMBER BANKS:

We are pleased to present the Annual Report of the Federal Reserve Bank of Richmond for the year 1962. This year's report features the central banks of the world with special reference to the Federal Reserve System. Also included in the report are comparative financial statements, a brief summary of our operations, and a current list of officers and directors of our Baltimore, Charlotte, and Richmond offices.

On behalf of our directors and staff, we wish to express our appreciation for your fine cooperation and support throughout the year.

Sincerely yours,

Chairman of the Board.

President.



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Board of Governors of the Federal Reserve System

## Notes on CENTRAL BANKS

In every major country of the world the central bank is the central arch of the monetary and financial system. Its activities are essential to the proper functioning of the private economy and indispensable to the fiscal operations of the national government. Yet the central bank is usually taken for granted. Even among those who frequently come into contact with its operations, only a few have a full understanding of what a central bank is, what it does, and why. Often there are illusions and misunderstandings as to the purposes and functions of central banks and confusion or imperfect understanding of the differences between a central bank and a commercial bank.

The purpose of these notes is to explain in simple terms the nature, characteristics, and functions of central banks and the rationale behind them. Attention will be centered on broad, general characteristics and functions. Any given statement may not be true of a particular bank since no two central banks are exactly alike. From time to time special attention will be directed to the Federal Reserve System as the central banking organization of the United States.

# The Nature and Characteristics



The Bank of England

It is reported that on one occasion Will Rogers said, "There have been three great inventions since the beginning of time: fire, the wheel, and central banking." He may have been kidding when he said this, for it is doubtful if central banking belongs in such exalted company. But it is true that the central bank is one of the most useful institutions modern man has developed to help him manage his collective financial affairs.

Although the roots of some central banks go back 200 years or more, central banking as we know it today is mostly a recent development. Some would contend that it is almost entirely a product of the twentieth century. In 1900 not a single central bank existed in the Western Hemisphere. The Federal Reserve System was not created until 1913 and the Bank of Canada did not appear on the scene until 1934. Now every independent nation in the hemisphere except one has its own central bank. According to available information, there are now 88 central banks in the world. Of those, 47, or slightly more than half, have been established since 1940.

Several reasons account for this rapid growth in recent decades. Perhaps the most important is the existence of a great many more independent nations in the world, each with its own monetary and banking system to be managed and supervised. Second, the nations of the world have almost entirely abandoned the international gold standard which provided some degree of automatic control over a country's monetary system. In the absence of that automatic control, a central bank is necessary to provide some conscious and discretionary control over monetary affairs. Third, monetary and banking systems are larger, more complex, and more technical than they were a century ago and for that reason they require closer and more effective controls. Finally, international financial relations are more important in the world today, and central banks are needed both to conduct or supervise those relations and to deal with any domestic disturbances they may create.

## What is a Central Bank

It is not possible to give any brief definition of a central bank which will be both comprehensive and accurate. To a considerable extent the nature of a central bank depends on its functions, and those functions vary from country to country and from time to time. Many central banks, especially the earlier ones, accumulated their functions as they went along: like Topsy, they "just grew." Nevertheless, it is proper to say that today any full-fledged central bank must perform at least three broad functions: it must be a bankers' bank, it must act as fiscal agent for the national government, and it must manage the nation's monetary system. These functions will be discussed in some detail later, but they will be briefly described here.

**A Bank for Bankers** Under the first two groups of activities, a central bank performs for the commercial banking system and for the national government the basic functions which the commercial banking system performs for individuals and business firms. As a bankers' bank it holds the reserves of commer-

cial banks, clears and collects checks, distributes currency and coin to the banks, makes short-term advances to banks under certain conditions, and acts as "the lender of last resort." Further, the central bank may, and usually does, exercise some degree of supervision and regulation over the activities of commercial banks, although this is not essential to the central banking function.

**Banker for the Government** In its capacity as fiscal agent the central bank receives, holds, transfers, and pays out the funds of the national government. In addition, it receives and allots subscriptions to new security issues, makes exchanges of securities, redeems interest coupons and maturing securities, and, under certain conditions, makes short-term advances to the government. In almost all countries the central bank is the principal financial adviser or consultant to the government and in some cases it actually manages the public debt.

**Manager of the Monetary System** Perhaps the most distinguishing function of a central bank is its control of the nation's money and banking system. One authority opens a treatise on central banking with these words: "The essence of central banking is discretionary control of the monetary system." In performing this function, central banks exercise one of the prerogatives and powers of the sovereign government. This means that the power must be exercised primarily for the achievement of national economic goals, and that a central bank is a public service organization, placing the national interest above any consideration of its own profit or welfare.

In acting as a bankers' bank and as manager of the country's monetary system, a central bank frequently creates money. It does this when it makes an advance to a bank or buys securities in the open market. The money thus created is "high-powered" money—money which the commercial banks count as reserves and on the basis of which they, as a banking system, expand their earning assets and deposits to an amount several times the amount created by the central bank.

**No Commercial Banking** To round out this brief definition, it is well to note one thing which a central bank does *not* do. Although there are exceptions, central banks ordinarily do not conduct a commercial banking business for the general public. In fact, individuals and private business firms (except commercial banks and a few security dealers) seldom if

ever deal directly with central banks. This probably is a major reason why the public generally is not well acquainted with central bank activities.

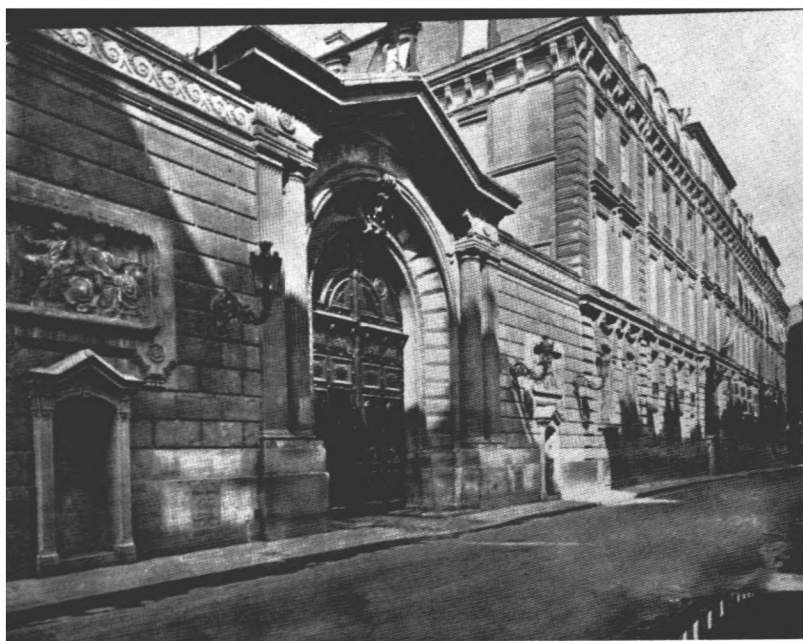
It is customarily regarded as inappropriate to mix central and commercial banking functions. The objectives and the methods of the two are quite different, and it might be difficult to keep the two activities properly separated. The central bank places primary emphasis on the attainment of national economic goals while commercial banks necessarily put the major emphasis on running a profitable business. Further, if a central bank did engage in commercial banking, it would have an unfair advantage. For example, the central bank might have to examine and supervise its competitors. Naturally, this would tend to antagonize the commercial banks and would threaten their free cooperation, which is vitally necessary for successful central bank operations.

In summary, then, a central bank may be broadly defined as a public service organization which does not engage in commercial banking, but which functions rather as a bankers' bank, acts as fiscal agent and adviser for the national government, and manages the country's money and credit system.

The Bank of Canada







Banque de France

## Characteristics of Central Banks

Although the characteristics of central banks vary widely, there are a few essential ones which are present in almost every important bank. These will be discussed under two broad headings: first, the place of the profit motive and, second, relationships with the national government.

**Place of the Profit Motive** One of the most important characteristics of a central bank, and the one which distinguishes it most sharply from a commercial bank, is its subordination of profit considerations to its responsibility for public service. If a central bank were operated primarily for profit, it would try to stay "loaned up"—by making approximately all the loans, discounts, and investments its reserve position would permit. This would be inappropriate for two reasons. First, it would not allow the bank to give primary attention, as it should, to managing the country's money system in accordance with the changing needs of the nation's economy. Its normal policy would be to create reserves which would keep the country's money supply expanded as far as legal provisions would allow. Such a policy would almost certainly cause serious financial complications both domestically and internationally. Second, if the central bank is to function as a lender of last resort it must have some reserve lending power—some cushion—to meet extraordinary situations. This it would not have if it ordinarily stayed loaned up as far as its reserves permitted.

The fact that central banks do not place primary

emphasis on making profits does not mean that they do not make profits. On the contrary, their power to acquire earning assets by creating money is a most lucrative source of profits.

**Disposition of Profits** If a central bank is entirely owned and controlled by the national government, as is frequently the case, there is no problem in curbing the profit motive, since governments do not usually conduct their operations for the purpose of making profits. But if some or all of the central bank stock is owned by private stockholders, it is usually considered necessary to place some limit on the return they can realize from the stock so as to discourage them from putting too much emphasis on earnings. This usually takes the form of placing a rigid limit on the dividends which can be paid on the stock of the bank. Any excess earnings are usually placed in a reserve fund or paid to the government as a tax or a franchise fee. This may be strengthened further by a provision that in case the bank should be liquidated, the stockholders would be paid the par value of their stock and any amount remaining would belong to the government. This prevents any possibility of stockholders benefiting from placing large amounts in reserves.

**Profits of the Federal Reserve System** The provisions governing the profits of the Federal Reserve System are perhaps typical of the above arrangements. The stock of the Federal Reserve Banks is owned by the member banks. The return on that stock is limited to an annual 6% cumulative dividend. After that dividend is paid, each Reserve Bank adds to its surplus any amount needed to bring its surplus up to twice the par value of its outstanding stock. All earnings remaining after this operation are paid to the Federal Government. This last payment is made in accordance with law under a regulation of the Board of Governors.

In 1961 the gross earnings of the 12 Reserve Banks were \$945 million (\$938 million from interest on U. S. Government securities, \$4 million from profit on sales of securities, and \$3 million from earnings on discounts and advances). Current expenses amounted to \$161 million, leaving net earnings of \$784 million. Of this amount, \$26 million was paid as dividends on the stock of the Reserve Banks, \$71 million was added to their surplus, and \$687 million was paid to the U. S. Government. Thus, the Federal Government received 73% of the gross earnings and 88% of the net earnings of the System. Over the five years 1957-61, Federal Reserve payments to the Federal Treasury averaged \$712 million per year.

**Relationships with National Government** The relationships of central banks with their national governments vary widely but usually are broad, close, unique, and complex. They vary because they were not fashioned according to one common pattern but simply grew or evolved. Thus, they were influenced by each country's conditions and developments. Many of the early banks which performed some central banking functions began as privately owned institutions, operated for private profit. With the passage of time they assumed more and more central banking functions, and the governments then insisted upon exercising an increasing amount of control. In a number of cases they assumed complete ownership and control. Again, it must be remembered that these close relations developed because central banks exercise, as one of their most essential functions, one of the most important powers of a sovereign government—the power to create money.

In all cases the central bank operates under a special grant of power, usually embodied in a charter with various amendments and supplements. This legislation, of course, is enacted by the national parliament or congress and thus can be modified at any time. On some points this legislation is likely to be in fairly broad and general terms, allowing some room for interpretation. Further, as time passes new situations arise which were not contemplated in the original legislation, and some of these may not be covered by specific amendments to the law. As a result the relationships set forth in the original legislation are likely to be modified and supplemented somewhat by interpretation, precedent, and practice,

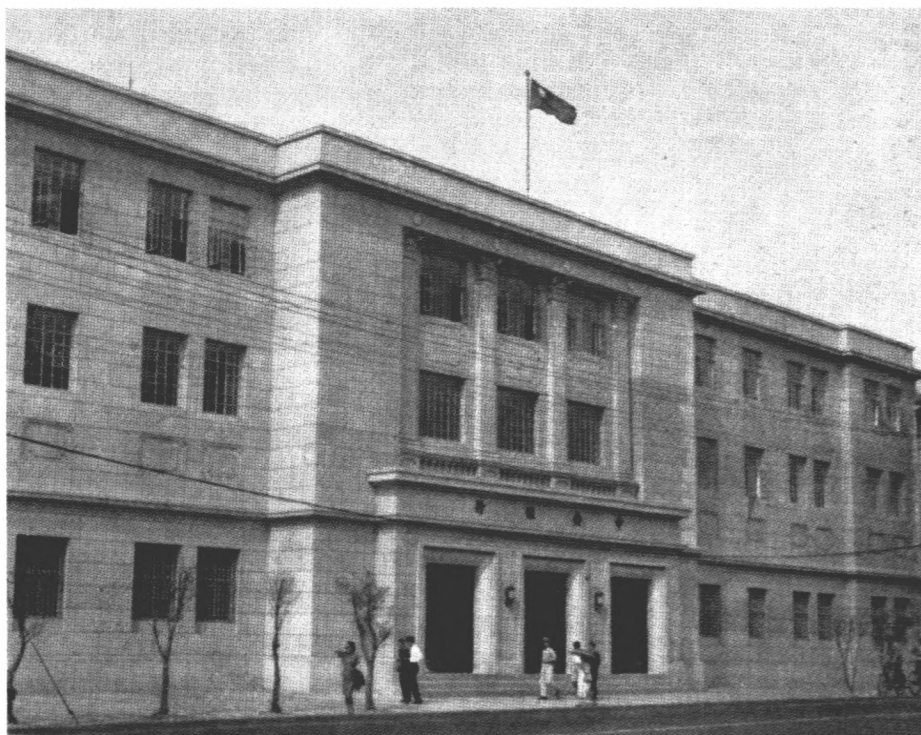
so that actual operating relationships may vary from those originally established.

**Ownership and Control** As noted above, most of the early institutions which performed some central banking functions were privately owned. In contrast, nearly all of the banks created in recent years are owned entirely by the government, and governments have assumed ownership of some of the early ones. In addition, as related above, governments usually insist upon a large share of the profits, including the residual share. Also, the government is usually the residual claimant in case the bank should be liquidated.

Regardless of the extent to which the national government shares in ownership, it invariably participates in control. This usually takes the form of appointing the governing board or several of the top officials. Where the government owns the bank completely, it, of course, has complete control and the only question that remains is how that control shall be exercised.

**Position in the Governmental Structure** The exact position which the central bank should occupy in the government has long been a delicate and difficult question. Since the bank exercises a major governmental power and since the government always exercises a considerable control over it and often owns it outright, why should the bank not be a regular government bureau, presumably in the treasury of the exchequer? That would seem to be the direct and simple solution, but history provides many warnings against it.

**The Central Bank of China, Taiwan**





Banca d'Italia

In the financial field the government exercises two major functions. The first is the fiscal function; it must raise the funds to cover the costs of the many activities it carries on. This is usually done by taxation, but taxes are unpleasant and politically unpopular. The second major function is that of providing an adequate and sound monetary system. The government has the sole power to control the creation of money. The immediate effect of increasing the money supply is likely to be widespread exhilaration and superficial prosperity for nearly everybody whereas increased taxation is likely to have opposite effects. In the long run, however, inflating the money supply is a method of taxation and historical experience in many countries has shown that ultimately it is both inequitable and disastrous.

If a single authority within the government has control over both the fiscal and money functions there will always be the temptation to cover current expenditures by creating money rather than raising it through taxation. If the government is weak, incompetent, shortsighted, or beset with strong political forces, it is likely to take the easy route of inflation.

The result is almost certain to be a steadily rising money supply and an uncontrolled inflation. Financial history affords scores of examples of the dangers of placing both the fiscal and monetary functions under the immediate control of one official.

In nearly all countries the national government is the largest borrower in the country. The chief financial officer of the government must plan the government's borrowing and refunding. The central bank, through its monetary policy, can substantially affect, at least for short periods of time, the rate of interest which must be paid in such operations. If one man has immediate control of both borrowing and monetary policy, he will be forced to deal with himself and will be subject to persistent and insidious pressure to set policies which will facilitate borrowing and keep interest costs down regardless of whether such policies are the best for the economy as a whole.

Further, the highly specialized and technical operations which central banks engage in require a special relationship with commercial banks which few, if any, other government agencies have with firms in the private economy. These conditions cannot exist unless the central bank has some degree of individuality and autonomy.

In addition, the government needs expert and politically impartial advice on financial matters. To provide such advice is one of the major responsibilities of a central bank. Mr. Montagu Norman, regarded as one of the greatest Governors of the Bank of England, stated on one occasion: "I look upon the Bank as having the unique right to offer advice and to press such advice even to the point of nagging; but always of course subject to the supreme authority of the government."

An astute observer of the American scene arrived at much the same conclusion: "It would not be tolerated to have a central bank . . . in the hands of private persons as distinguished from representatives of the people. The central bank is an instrument of government and must always be so. However, it is not an instrument of the fiscal authority. What is needed is that the two authorities be represented by persons of equal rank; equality of rank is essential for effective cooperation. This should be recognized (1) by the fiscal and monetary authorities themselves and (2) by Congress and the President and the general public."

The advice, the persistence, and the equality of rank envisioned in these statements would not be available if the central bank were an ordinary government bureau.



# The Note Issue Function

The function of issuing bank notes is almost universal with central banks. In most cases the banks have had this privilege from the beginning; indeed, in many instances the primary purpose of establishing the bank was to provide a paper money issue, and often the term "bank of issue" was used synonymously with "central bank." One scholar has stated that "The primary definition of central banking is a banking system in which a single bank has either a complete or a residuary monopoly of the note issue."

The importance of the note issue function has varied greatly over time and among countries. It is a major function of virtually all central banks since their notes make up a very large part of the circulating currency. It is the dominant function in those countries where the note issue is the dynamic or determining element in the total money supply. In the more advanced countries of the Western World, however, demand deposits make up the bulk of the money supply and are the medium through which most changes in that supply are brought about. The note issue function is correspondingly less important in such countries.

**Development of Bank Notes** The modern bank note had its beginning in the seventeenth century at about the same time the earliest central banks were being established. In the more densely populated and economically advanced countries, use of the notes spread rapidly because paper offered obvious advantages over the heavy and bulky coins of the day. And, of course, banks promoted the trend since

assets acquired by the issue of notes were the major source of their profits.

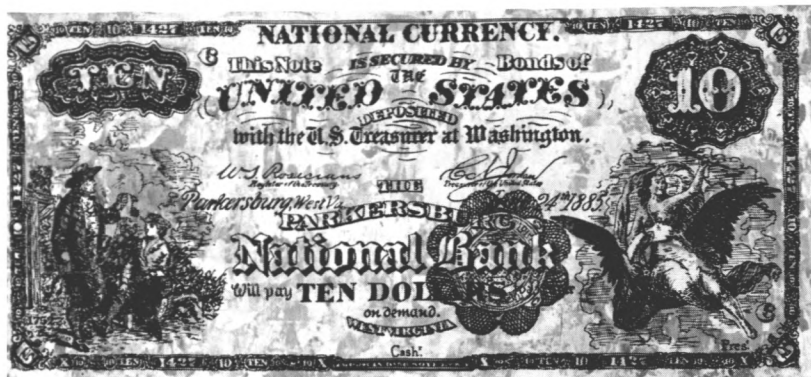
Early bank notes often ran into competition from another form of paper money—treasury notes issued by governments. Such government issues proved to be a convenient substitute for taxation and were usually made by governments in pressing need of funds. The size of the issues bore no relationship to the economy's monetary requirements, but rather depended on the size of the issuing governments' deficits. Monetary students soon noted two important disadvantages of such money. First, the issues seldom reduced the governments' deficits. Instead, by driving up the prices of the things the governments bought they tended to perpetuate the deficits, thereby requiring further issues, which frequently led to an inflationary spiral. Second, such issues were not "elastic;" that is, they contained no features which caused them to expand when the monetary needs of the economy rose or to contract when those needs declined.

On the contrary, under a properly regulated system, bank notes were paid out only when there was a demand for them—when the economy required more money. If requirements declined, the notes were brought back to the issuing bank for redemption or for use in repaying bank loans. In either case the notes were retired from circulation for the time being.

Over the years repeated instances of inflation caused a loss of confidence in treasury-issued paper money and a realization that a well-regulated system of bank note issue provided a superior monetary ar-







rament. Slowly and in various ways systems of bank note issues came to replace, at least in large part, treasury paper issues.

**Defects of Commercial Bank Notes** The arrangements under which banks came to issue notes developed differently in different countries. In some there was no central bank for a long time and notes were issued solely by commercial banks. Where central banks had been established, they usually had no monopoly of the note issue but rather issued notes which competed with those of commercial banks.

Many difficulties and problems developed with note issues by commercial banks. Without adequate regulation, some banks abused the issue privilege, over-issued notes, and failed. Even when the notes were redeemable at par by the issuing bank, they sometimes fell to a significant discount at distant points if there were no arrangements for redemption at convenient locations. This was quite important in large countries, especially those with inadequate communication and transportation facilities, because it resulted in varying values for different components of the money supply. Further, the notes frequently were not uniform as to size, shape, color, or quality of printing or engraving. These differences often encouraged counterfeiting which sometimes became a major problem. Moreover, systems of commercial bank note issues failed to provide for "emergency elasticity;" that is, arrangements for suspending for short periods of time the normal regulation governing note issues to allow larger amounts to be issued to meet public demands caused by panics or other abnormal situations. Long and painful experience has shown that such arrangements are essential,

especially if there is less than complete confidence in the banking system.

Finally, as the theory and practice of central banking developed another problem emerged. The ability of a central bank to control the total money supply (including demand deposits) depends in part on the supply of coin and currency, which includes note issues. When a large part of the currency supply is made up of commercial bank notes, that supply is subject to erratic and unpredictable fluctuation depending on actions taken by the banks and whims of the public resulting from changes in confidence or other factors. Thus, the use of commercial bank notes complicated the principal task of central banks.

**Why A Central Bank Monopoly** The disadvantages described above can, in large measure, be overcome by giving the central bank a monopoly of the note issue. The central bank will not fail, so note holders will not lose for that reason. In addition, the notes are usually made legal tender and guaranteed by the national government. The best facilities and workmanship available are used in printing and engraving the notes so that counterfeiting is discouraged. If redemption is permitted and is significant, redemption points are established at various places so that the notes do not go to a discount because of distance. Emergency elasticity is provided because the central bank can safely be entrusted with the power to suspend normal regulations for limited periods of time. The power to control the note issue, even though incomplete, simplifies the central bank's task of controlling the whole money supply. Finally, since the note issue is the source of large profits, which come from the exercise of one of the sovereign powers of government, it is generally believed that it should be concentrated in one organization not operated for profit and closely supervised by the government so that the bulk of the profits can more easily be recouped by the government.



The desirability of concentrating the note issue in the central bank came to be realized slowly, mostly during the nineteenth century. But accomplishing that step was not an easy matter. The commercial banks wanted very much to retain the right to issue notes, both because of the profit it conferred and because of the prestige it carried. The process of transferring the note issue power was long and involved. One method was to deny the note issue to new commercial banks and allow the central bank to assume any issue powers possessed by banks which went out of existence.

**The United States Experience** In the United States commercial banks issued notes until 1935. The First and Second Banks of the United States, which functioned to some extent as central banks, issued notes along with state-chartered banks. From the end of the Second United States Bank (1836) until the Civil War, state bank notes were the only paper money in the country. While some states devised safe and sound systems of note issue, many states were lax in their regulation and many banks abused the note issue privilege, causing losses to the public.

In 1863 the National Banking System was established, providing for a safe and uniform bank note issue under Federal supervision and secured by the pledge of certain United States Government bonds which had the "circulation privilege." A Federal tax on state bank notes first levied in 1865 soon drove them out of existence, leaving the note issue solely to national banks. The only other form of paper money then in circulation was the United States note ("Greenback"), but the gold certificate and silver certificate were added a little later.

National bank notes represented a great improvement in that they were uniform and safe. They were greatly lacking, however, in elasticity, both ordinary and emergency. This, along with other defects in the system, was primarily responsible for the recurring money panics which scourged the country from 1870 until 1907. Those panics did much to stimulate the reform movement which culminated in the establishment of the Federal Reserve System in 1913.

Federal Reserve Banks issued notes from the beginning, and it was expected that those notes would soon displace national bank notes. Provisions were made whereby national banks could retire their notes easily without loss, but they were not required to do so and few did. In fact, in 1932, when the Reserve



Federal Reserve notes being readied for shipment to Fifth District banks

Banks were experiencing difficulty in meeting the great demand for currency caused by widespread bank failures, national banks were allowed to increase their note issue substantially for a short time. Only a few banks took advantage of the law and the increase in notes was modest. Shortly afterward the regulations governing the issue of Federal Reserve notes were liberalized so that Reserve Banks could meet the currency need. In 1935 all United States bonds with the "circulation privilege" were retired and national banks ceased issuing notes. Since then the notes have been gradually retired and now Federal Reserve Banks have a monopoly of the issue of bank notes.

**Regulation and Collateral** In the past the most important features of a system of bank note issue were provisions setting the maximum amount that could be issued, insuring the security or value of the notes, and giving elasticity to the issue. Where notes constitute the largest and most dynamic part of



the money supply, those provisions are still of major importance. Also, in countries which maintain any form of the gold standard it is generally considered necessary to require some reserve against notes in the form of gold or gold certificates, or, in many countries, foreign exchange assets.

**Methods of Limiting Volume** Various methods or devices, together with modifications and combinations of them, are employed to limit the maximum amount of notes which may be issued.

In many gold-standard countries it is customary to require a minimum reserve in gold or gold certificates. The remaining collateral may be in the form of discounted paper, government bonds, or general assets of the bank. The gold reserve requirement thus sets a limit to the total amount of notes which may be issued.

Another method, long used in England, is to provide for a limited "fiduciary" issue of notes secured by government bonds and to require that all notes beyond that be fully backed by gold. That system was quite inelastic and is not used anywhere today.

Still another method is to require that the notes be secured by certain specific issues of government bonds which are limited in amount. This method was used in part to limit the volume of national bank notes in this country.

A widely used method of control is for the government to prescribe a maximum amount of notes which may be outstanding. The government, of course, is free to raise or lower that maximum from time to time as it sees fit.

Finally, reserve and collateral requirements may be abolished or indefinitely suspended, leaving the notes subject to the same regulation as the deposits or other liabilities of the bank. This means that the

amount of notes outstanding is left to the discretion of the central bank or, more likely, to the automatic operation of the banking system as explained below. This situation prevails in many countries of the world today.

**Security and Redeemability Provisions** Most bank notes are now issued by central banks, and there are few problems in insuring their security since a government cannot allow its central bank to fail or to default on its obligations. In fact, in most countries it might be said that there can be no problem of security or redemption since no meaningful redemption is allowed and the central bank note is in practice the ultimate form of money.

Usually various forms of collateral are pledged to secure the notes. If no specific assets are so pledged, note holders have a claim against the general assets of the bank and may have a preferred status, ahead of depositors. Further, the security of central bank notes (in terms of the country's monetary unit) is further assured by the fact that they are usually made legal tender and are guaranteed by the national government. Where necessary, the maintenance of the notes at a uniform value throughout the country is assured by the establishment of a number of redemption centers.

**The Federal Reserve Note** The Federal Reserve note was designed to add "automatic elasticity" to the uniformity and safety which had characterized the national bank note. This was to be accomplished by requiring "eligible paper" as the principal form of collateral. Eligible paper represents primarily short-term business loans which commercial banks make to their customers. The theory was that commercial banks would make more such loans when there was need for more money and would, in turn, rediscount more of the paper with Federal Reserve Banks, which would then have the necessary collateral to enable them to issue more Federal Reserve notes. When the need for money declined the reverse would happen.

Originally, there was a reserve requirement of 40% in gold *plus* a collateral requirement of 100% in the form of eligible paper. This was soon changed, however, to a *minimum* of 40% in gold and the *remainder* in eligible paper, which permitted combinations of collateral including 60%, 80%, or even 100% in gold. Also, changes were made which allowed collateral other than eligible paper to be pledged, but until 1932 United States obligations could not be so used.



With the onset of the Great Depression after 1929, commercial banks held less and less eligible paper, and the amount of such paper held by Reserve Banks declined. At the same time, widespread bank failures caused depositors to convert more and more of their deposits into currency. When the Reserve Banks bought United States obligations in the open market in an effort to ease credit, the rediscounting of eligible paper declined further. The Reserve Banks had plenty of gold, and the ratio of gold to notes outstanding rose to a very high level. A severe crisis developed, however, when substantial amounts of gold left the country after England suspended the gold standard in 1931. The demand for currency continued to grow and the Reserve Banks had difficulty meeting it, not because of a shortage of gold but because of a deficiency of other collateral, since their chief earning asset—United States obligations—could not be pledged as collateral for the notes.

To relieve this situation Congress first permitted a temporary increase in national bank notes as indicated above. When this proved ineffective, the Reserve Banks were permitted, in 1932, to pledge United States obligations as collateral. During most of the period since that time, Government obligations have constituted the principal collateral for notes.

During World War II the gold certificate reserve requirement was reduced from 40% to 25%. At present the reserve held behind nearly \$30 billion of Federal Reserve notes is composed of approximately \$8 billion of gold certificates and over \$23 billion of United States obligations.

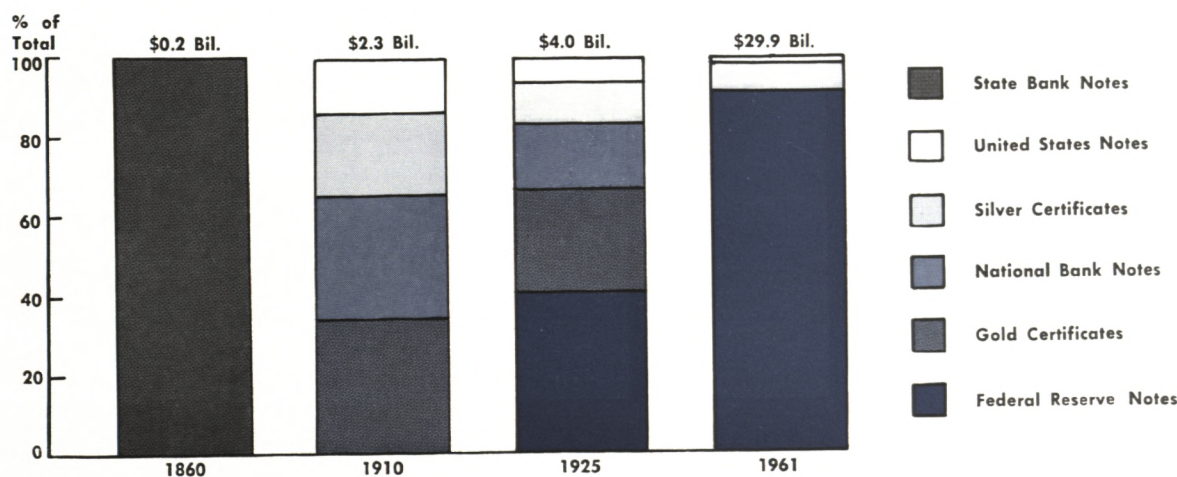
In this way the original theory of automatic elasticity in the note issue was tested, found wanting, and abandoned. Automatic elasticity is now provided in another way.

**Automatic Elasticity Today** It is axiomatic today that provisions must be made to allow holders of demand deposits to convert those deposits into currency in any amounts they wish. It could not properly be otherwise. If depositors feared that they might not be able to convert, large numbers of them would immediately demand conversion. If the currency were not available, there would be a panic and the financial system would be paralyzed.

Today most central banks are in a position to meet any probable demand for currency, either because there is no limit on the note issue or because the banks have the authority to suspend any such limit temporarily. If neither of those situations exists, it is quite likely that, in an emergency, the national government would act quickly to enact the necessary legislation.

In general, it is safe to have such arrangements because, in the more advanced countries of the world, demand deposits are the dominant form of money and the demand for currency is closely related to and derived from those deposits. Given proper regulation and control of demand deposits, the amount of bank notes in circulation can safely be allowed to find its own level without elaborate regulation as to limits and collateral. On the contrary, it is not feasible, in a modern economy, to regulate the total money supply by strict regulation of the note issue.

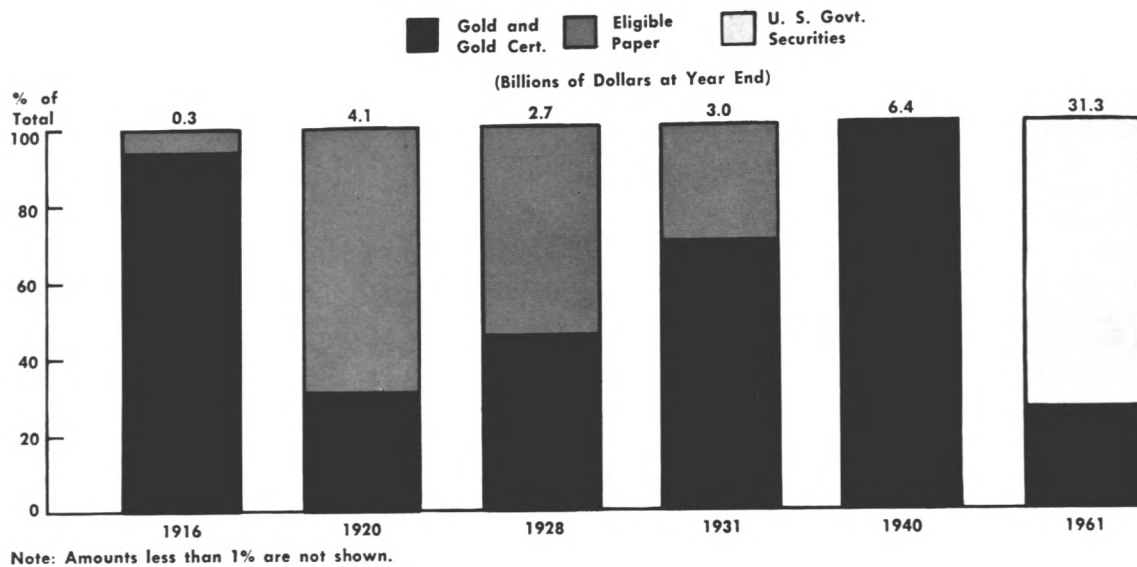
COMPOSITION OF THE UNITED STATES PAPER MONEY SUPPLY



Note: Amounts less than 1% are not shown. Data are for midyear.



## COLLATERAL FOR FEDERAL RESERVE NOTES



As one authority has expressed it, "... the law was clutching at a slippery eel when it sought to apply a rule of thumb to the monetary situation by regulating the issue of bank notes alone."

**Effects of A Large Increase In Notes** To some it might appear that indefinite or nonexistent limitations on bank notes could be inflationary by permitting a large increase in their issue. Is this a real danger? On the contrary, it is probable that under present conditions a large increase in central bank notes would be deflationary for two primary reasons. First, the notes can be obtained only by surrendering demand deposits, thus exchanging one form of money for another and leaving the total money supply unchanged at the moment. The reason for such a conversion presumably would be some uncertainty or lack of confidence causing the depositor to want to have in his possession the ultimate means of payment. He would not want currency for the purpose of making an immediate payment or purchase; he could do that with a check. In short, he would want the notes so that he could hoard them, which would be deflationary.

Second, a sharp increase in notes would greatly reduce bank reserves. Suppose notes increased by \$3 billion. Commercial banks would have to obtain them by drawing down their reserves at the central banks by approximately that same amount. The required reserves of the commercial bank would also

be reduced but by only about one-sixth as much. This would leave a large reserve deficiency which could be eliminated only by the central bank creating new reserves through open market purchases or rediscounting or by the commercial banks reducing their deposits by several times the amount of the increase in notes. The latter would be very deflationary, and the former would happen only if the central bank considered it sound policy.

**Summary** Bank notes usually make up a large majority of all paper money. Central banks customarily have a monopoly of the note issue privilege, although there are numerous but usually minor exceptions to this generalization. Bank notes are important but they are not the dominant and dynamic form of money they once were, having been displaced in this respect by demand deposits. In the Western World the demand for notes is normally derived from and dependent on the volume of demand deposits; if the deposits are properly regulated, the volume of bank notes can safely be allowed to find its own level. Where any effective connection with the gold standard remains, a country must maintain gold, gold certificate, or "key currency" reserves against both the deposits and the notes of the central bank. Otherwise, however, the tendency is to give central banks wide discretion in the issuing of notes and to abolish or suspend regulations fixing limits or requiring specified forms of collateral.

# The Collection Function

In addition to their principal task of formulating and administering monetary policy, central banks perform a number of service functions for their national governments, for commercial banks, and for the financial community generally.

The nature and scope of central bank service functions vary greatly from country to country, making it difficult to generalize about them. For that reason and also because information is more readily available about the work of the Federal Reserve System, the discussion below gives more than usual emphasis to the service functions as they are performed in the United States.

Demand deposits in banks make up the bulk of the money supply in the larger countries of the Western World. Those deposits function as a means of payment or medium of exchange only when they are transferred, usually by checks written against them. Billions upon billions of checks are written every year and circulate widely. The task of the banking system is to develop a system or mechanism in which each check can quickly and economically be returned to the bank on which it is drawn and in which that bank can easily, quickly, and safely make payment to the bank presenting the check. Unless there is such a system, the delays and costs involved will impede the free use of deposit money and cause it to circulate at varying discounts in different parts of the country.

While the collection of checks is not an essential central bank function and has relatively little significance for monetary policy, it is in some countries an important service which a central bank can per-

form for the public. The importance depends upon the banking structure, the geographical area of the country, and the extent to which checks are used in making payments.

**A Good Collection System** A good system of check collection has several characteristics. It includes, so far as possible, all the banks in a country. If it does not, there must be duplicate systems, entailing unnecessary shipments of checks and currency and the accompanying delays and costs. The banking system of the United States afforded outstanding examples of such disadvantages before 1913. Second, the system provides for the quickest and cheapest possible methods of collection. This requires the best utilization of all available forms of transportation and communication. Finally, the system affords a convenient, economical, and safe method whereby banks can "clear" or settle balances among themselves. In the absence of such an arrangement it may be necessary to ship large amounts of currency between different cities and regions.

**The Central Bank and Collections** The central bank has facilities which greatly simplify the collection process when the banking system is composed of many banks spread over a large area. The central bank usually has a wide network of branches or other representatives reaching all parts of the country. It also has contacts with most or all banks for other reasons. Finally, it holds the reserves of most banks and thus is in a position to settle balances by the mere process of debiting and crediting accounts.

Some of the 3.7 billion checks which were collected through the Federal Reserve Banks in 1961





These machines help move billions of checks annually through Federal Reserve Banks for collection

These facilities are of comparatively little importance in a country with a very small number of banks, each of which has a nationwide system of branches (e.g., Canada), especially if it is small in area (e.g., England). In the United States, however, conditions are quite different. Here there are thousands of independent unit banks spread over a large area with no nationwide branch banking systems. Further, the use of checks has been highly developed, giving rise to a tremendous volume of checks. It would be impossible for our present banking system to operate with anything approaching its present speed and efficiency without one basic clearing and collection system, an arrangement which could hardly be operated by any organization other than the Federal Reserve System.

**The Federal Reserve Collection System** Limited space prevents any detailed description of the elaborate collection and clearing system which has been developed in this country. Locally, banks exchange checks drawn against each other either directly or at a local clearing house. Federal Reserve Banks often function as clearing members of local clearing houses, and other members may settle balances by drawing on their accounts at the Reserve Bank.

When a bank receives a check drawn on an out-of-town bank, the usual procedure is to send it to the Federal Reserve Bank or branch. If the drawee bank is in the same Federal Reserve district, the Reserve Bank can make payment by adjusting the accounts of the two banks. If the check is drawn on a bank in another Federal Reserve district, the local Reserve Bank sends it to the Reserve Bank of that district, which transmits it to the drawee bank. Each Reserve Bank makes the proper adjustment on the accounts of the bank affected. This process gives rise to balances owing from one Reserve Bank to another. Such balances are settled without the shipment of currency by adjustments on the books of the Interdistrict Settlement Fund—a clearing house for Federal Reserve Banks operated by the Board of Governors. The assets of the Fund consist of gold certificates deposited by the 12 Reserve Banks. Payments among the Banks merely change the equity of the different Banks in the Fund. This feature is especially important in avoiding large interregional flows of currency which once were a major feature of the clearing system in this country.

The accompanying chart shows that over the past ten years the number of checks (including noncash items) collected annually through Federal Reserve Banks increased by approximately 59%, from 2.3 billion to 3.7 billion. The dollar amounts represented by these checks rose about 48%, from a little over \$800 billion to \$1.2 trillion, indicating a small decline in the average size of checks collected.

**The Wire Transfer System** In addition to collecting checks and settling balances between banks, the Federal Reserve System operates a system for making telegraphic transfers of funds from one part of the country to another. Transfers are made for member banks in multiples of \$1,000 without charge; transfers of odd amounts and for the accounts of others are made at a small charge. This service is a great convenience to the financial world, and its use has been increasing rapidly. Between 1952 and 1961 the annual number of transfers approximately doubled, and the amounts involved rose from less than \$800 billion to \$2.7 trillion. On an average business day more than \$5 billion of transfers and payments are made through the Interdistrict Settlement Fund.

Over the years the Federal Reserve System, in cooperation with the commercial banks, has greatly increased the efficiency and reduced the cost of collecting checks and transferring funds. By increasing the scope of the check collection system it has



lowered unit costs and reduced the balances which had to be settled. Through its wire transfer system it makes possible almost instantaneous transfers of funds to any part of the country in any amount, free or at a very small cost. The Interdistrict Settlement Fund makes it possible to settle regional balances through bookkeeping transfers and minimizes the movements of currency among Federal Reserve districts. Within districts, Federal Reserve Banks pay the cost of shipping currency and coin to and from member banks. In all of these ways the System facilitates the free movement of money within and among regions and helps maintain money at a uniform value throughout the country.

The collection process requires the efforts of approximately one-third of the employees of the 12 Reserve Banks—the largest fraction engaged in any System function. If to this are added those employees engaged in the closely related work of handling currency and coin, the figure is raised to over two-fifths.

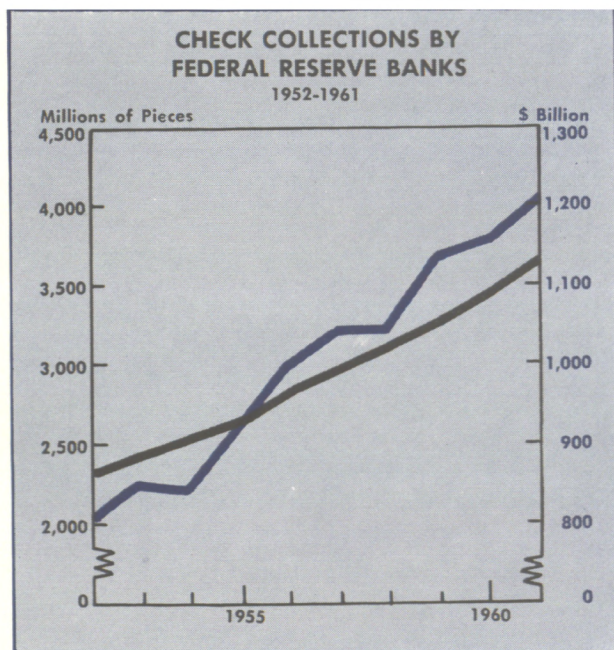
**Par and Nonpar Banks** The Reserve System collects only those checks drawn on par banks; that is, those banks which remit the full amount of checks drawn on them and presented by mail. Banks which deduct an exchange fee or charge are known as nonpar banks. All member banks must remit at par, and most nonmember banks do so voluntarily; therefore, checks drawn on them are permitted to clear

through Reserve Banks. Checks on nonpar banks must be collected outside the Federal Reserve System through correspondent banks.

For years the Federal Reserve System has encouraged all banks to clear at par. The policy is slowly succeeding, as evidenced by a drop in the number of nonpar banks from 2,629, or 18% of all banks, in 1939, to 1,636, or 12%, at the end of 1961. In 34 states all banks are on the par list. Nonpar banks are heavily concentrated in the upper midwestern and southeastern states. In general, they are small banks and checks on them account for only a very small proportion of all checks written. Nevertheless, exchange charges on these checks still amount to several millions of dollars every year.

**Federal Reserve Float** When a central bank operates a clearing system, float may affect its administration of monetary policy. When a Reserve Bank receives a check for collection, for example, it gives the sending bank either immediate or deferred credit, depending generally on the assumed time required to present the check to the drawee bank. In this country, deferred credit is granted according to a time schedule, with a maximum of two business days. On the average, it takes a little longer to collect the checks than the time schedule allows, and thus the sending bank receives credit before the drawee bank is charged. Thus, the sending bank, in effect, receives a loan or advance for a day or two on some fraction of the checks it sends to a Reserve Bank for collection. The amount of this advance credit is known as Federal Reserve float. It is credit extended by the Reserve Bank and is added to member bank reserves, which affects the capacity of the banking system to expand earning assets.

The amount of Federal Reserve float usually varies between \$1 billion and \$2 billion and is affected by such things as the number and amount of checks written, the interregional movements of goods and services, and, especially, the speed and efficiency of the transportation system. It rises regularly with seasonal increases in business and may shoot up sharply when a strike or a severe storm interrupts transportation. In the latter case the central bank may find that bank reserves are increased overnight by several hundred million dollars, making it necessary to move quickly to prevent an overabundance of reserves. Conversely, it may have to act as quickly in the opposite direction to prevent a crippling stringency of reserves when transportation difficulties are removed.





# Fiscal Agency Function

Like business corporations and individuals, governments need banking services. Modern governments engage in a tremendous volume of financial transactions. These require many varied banking services, often far exceeding those needed by private economic units. Usually only central banks, with their great size, countrywide facilities, numerous contacts with the financial world, expert techniques, large research staffs, and accumulated experience, can adequately provide such services. While most of these services are routine, some are closely related to monetary policy. The relationship becomes closer as the volume of government transactions increases and as fiscal and monetary policy are more closely integrated. Further, the relationship between government funds and bank reserves is very close, making it necessary for the central bank to keep closely in touch with both in order to manage monetary policy.

In addition to providing routine banking services, the central bank usually acts as agent for the national government in many fields and is usually the government's top adviser on financial affairs and policies.

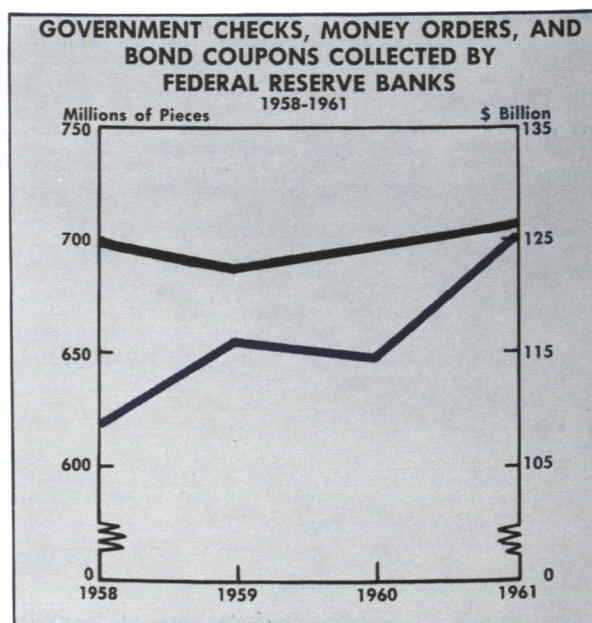
**Deposit Services** The most obvious and the most usual service performed under the fiscal agency function is the receiving, holding, and paying out of government funds. This means that the central bank accepts deposits, receives and collects checks payable to the government, holds and transfers funds, and charges government checks and bond coupons against the treasury account. The wire transfer service of the Federal Reserve System described earlier greatly facilitates the movement of Treasury funds to the points where they are needed.

In the United States, as the accompanying chart shows, the number of items paid by the Federal Reserve Banks for the Government, including Government checks, postal money orders, and bond coupons, increased from 697 million in 1958 to 706 million in 1961. Their value rose from \$109 billion to \$125 billion. Data for earlier years are not available on a comparable basis.

**Treasury Tax and Loan Accounts** While Reserve Banks hold virtually all the Government's checking account and do most of the work in transferring funds and other similar services, they by no means hold all United States Government deposits. In fact, they usually hold a small minority of such

deposits. The reason is quite simple. The United States Government frequently has very large receipts concentrated in a few days such as on tax payment dates or on payment dates for a large issue of bonds sold for cash. If all such amounts were paid directly into the Federal Reserve Banks, they would drastically reduce member bank reserve accounts and create an acute shortage of reserves. Conversely, as those balances were paid out through Government disbursements, they would soon build up an embarrassing surplus of bank reserves.

To avoid such a tremendous ebb and flow of bank reserves, the Treasury tries to keep from \$500 million to \$1 billion in its accounts at Reserve Banks and holds the remainder of its balances in Treasury Tax and Loan Accounts at commercial banks. A large majority of all commercial banks—over 11,000 of them—hold such accounts, secured by the pledge of proper collateral. From these "T T and L accounts" funds are transferred to the Reserve Banks periodically in relatively small amounts so as to avoid large changes in bank reserves. The small reductions in bank reserves caused by these "calls" are largely offset by the regular Government disbursements from Reserve Banks. Occasionally, if the Treasury accounts at the Reserve Banks become larger than desired, funds are transferred back to the T T and L accounts.





Wire transfer speeds the exchange of Government securities thus reducing the cost of transactions and creating a national market

One of the routine duties of the Reserve Banks as fiscal agents is to maintain a check to see that adequate collateral is pledged to secure the many T T and L accounts in commercial banks and to take steps to bring it up if it is inadequate.

**Servicing the Public Debt** National governments usually have large debts, and the task of servicing and refunding them is a huge one. National treasuries could do this clerical work, but usually it is more efficient to let the central bank do it.

The authority and the influence of central banks in shaping debt management policy vary from country to country, but apparently no bank has full power to manage the debt. The Bank of Canada and the Bank of England each has somewhat more extensive powers along this line than does the Federal Reserve System, but each is still subject to the final decision of the government of the day.

Usually, however, the central bank, as the chief financial adviser of the government, is consulted when the terms of any important new issue of securities are being determined. Once those terms have been set and the issue announced, the central bank usually

takes over and does most of the work from that point. Typically, the central bank disseminates information, receives subscriptions, notifies subscribers of allotments, issues the securities, and receives payment into the government account. It is also usual for the bank to make denominational exchanges of securities and to pay maturing interest coupons. When the securities mature or are called, the bank usually redeems them in cash or exchanges them for new ones if a refunding is made.

The extent of this work in the United States is indicated by the fact that in issuing, redeeming, and exchanging securities, the 12 Reserve Banks in 1952 handled 163 million pieces with a value of \$355 billion. By 1961 the number of pieces had risen to 192 million and their value to \$560 billion.

**Wire Transfer of Securities** A special service of the Reserve System is the transfer of Government securities by wire. Without this service, the sale of securities between distant points would involve some delay, risk, and considerable expense. But now each Reserve Bank and branch maintains a stock of unissued securities. If a security dealer in New



York sells a million dollar Treasury bill to a buyer in Richmond, the dealer can deliver the bill to the New York Reserve Bank, which "retires" the bill and wires the Richmond Reserve Bank to issue a new one of the same denomination to the buyer when he pays for it. Such a transaction could be completed within an hour. This service affords substantial savings of time and money and thus greatly facilitates the operation of the Government securities market and assures the Treasury of an effective national market for its securities.

**Loans to Government** A major banking function is the granting of loans to customers. As part of the fiscal agency function, central banks make loans to their governments. Often governments have legitimate need for short-term advances which only central banks may be able to meet. On the other hand, the most common abuse of central banks and the usual source of any major inflation is overborrowing by governments from central banks. To control such borrowing, provisions have at times been inserted into central bank charters limiting direct advances to governments. The great weakness of such method of limitation is that it may be changed or eliminated at the will of the borrower.

If there is a well-developed money market and if treasury operations are properly organized, governments can usually accomplish the necessary borrowing without resort to the central bank. It is necessary and proper, however, to have such borrowing available in case of need. In the United States, the 12 Reserve Banks as a group may not hold at any one time more than \$5 billion of United States securities purchased directly from the Treasury. Such securities have been held on only two days since March 1954 and then for only small amounts.

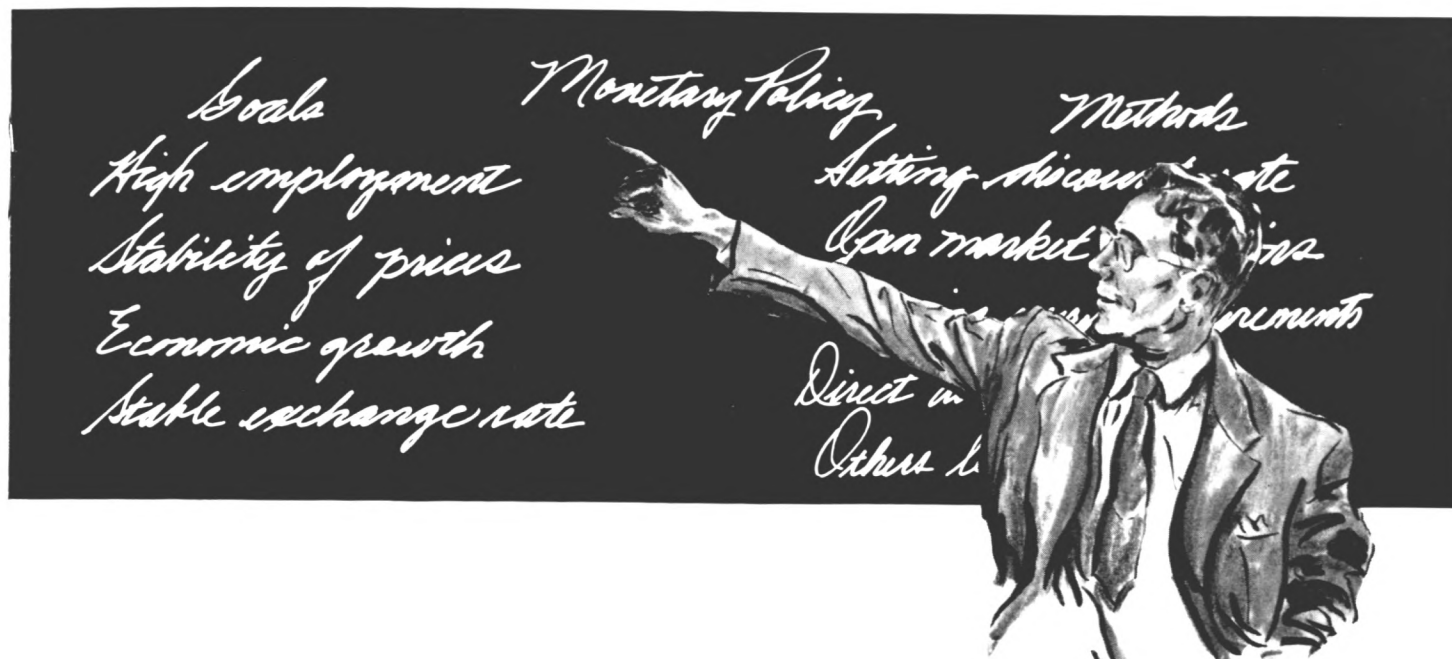
Central banks may and do, through open market operations, affect the terms on which governments borrow and can, in effect, make indirect loans to them. Such operations constitute the most important tool used in the administration of monetary policy and cannot feasibly be limited or restricted to prevent their abuse in government borrowing. In any event, it should be recognized that in time of war or other major emergency any central bank will often have to provide special facilities for government borrowing, over and beyond what might be justified by sound monetary policy.

**Other Services** In addition to the above, central banks perform many other fiscal agency functions for governments and governmental agencies. These in-

clude such activities as the acquisition and management of foreign exchange needed for expenditures abroad, operations in the foreign exchange market for stabilization funds or the complete management of such funds, the purchase and sale of securities for government trust funds, and the safekeeping of securities and earmarked gold. In the United States, two examples of routine Federal Reserve activities along these lines are the verification and destruction of currency for the Treasury Department and, more recently, the retirement and destruction of food stamps for the Department of Agriculture. In addition, the Reserve Banks devote much effort to facilitating and servicing the Savings Bond Program. Somewhat more specialized is the activity in guaranteeing V-loans. During World War II and on a much reduced scale since then, the Reserve Banks have acted as fiscal agent for several departments and agencies of the Federal Government in guaranteeing loans made by commercial banks and other private financing institutions to industrial firms which have the capacity to produce goods important to national defense but which are in a financial condition which does not permit them to borrow on satisfactory terms.

As an example of another specialized service, the Federal Reserve Bank of Richmond acts as fiscal agent for the Housing and Home Finance Agency of the Federal Government. When the Agency makes a loan, the Richmond Bank receives the bonds given by the borrower and maintains a record of them. As interest coupons or the securities themselves mature, the Bank collects the funds and deposits them to the Agency's account. When loans are made in another Federal Reserve district, the Reserve Bank of that district acts as subagent of the Richmond Bank, receiving and holding the bonds, making collections, and reporting transactions to the Richmond Bank.

In terms of manpower, the fiscal agency function is one of the major functions of the Reserve Banks, accounting for the work of more than 2,000 employees, or about 11% of total employment. For most of this work the Banks are reimbursed by the Treasury and other agencies, the total reimbursement in 1961 amounting to nearly \$20 million. In addition to salaries, reimbursement covers rent of space and equipment, printing, postage, telephone and telegraph charges, and numerous other items. Under present conditions, however, reimbursement is merely an accounting transaction of little significance since it adds an approximately similar amount to the payment which the Banks make to the Treasury as interest on Federal Reserve notes.



## The Monetary Policy Function

"Central banking is a subject that does not lend itself to precise definition and universal rules. Its essence is discretionary control of the banking system, but if we try to elaborate this we shall soon find ourselves at variance with what has been done or is being done by some central bank or other." Thus Mr. R. S. Sayers, the eminent British economist, points out the central characteristics of central banks and notes their changing, evolving techniques.

Previous sections have described the characteristics of central banks and discussed their major service functions. This section discusses the most essential function of central banks—that of formulating and administering monetary policy.

In making and administering monetary policy, central banks aim at certain definite goals. Their methods and techniques vary because of institutional differences among countries, but all policy actions are aimed at the realization of one or more of those

goals. A brief but broader look at the rationale or strategy of monetary policy will afford some perspective which will be helpful in the more detailed discussion which follows.

**Goals** Generally the goals of central banks are the same in all countries of the free world today. Briefly, they are to provide monetary and credit conditions favorable to the realization of: (1) a high level of employment; (2) relative stability in the general price level; (3) economic growth; and (4) stability of the country's monetary unit in international markets. A more complete explanation and discussion of these goals, and of the methods and techniques mentioned below, can be found in a number of publications such as *The Federal Reserve at Work* published by this Bank and *The Federal Reserve System: Purposes and Functions* published by the Board of Governors.



**Methods and Techniques** To accomplish these broad goals central banks use various methods and techniques which have been developed over the past century, most of them during the last four decades. The more important ones are explained and discussed below, but perhaps it should be noted here that nearly all of them exert their effects through the reserves of commercial banks. In fact, a very large part of the work connected with monetary policy consists of creating, mobilizing, holding, and shifting reserves and setting reserve requirements. This is true because in modern banking systems the volume of bank credit and the size of the money supply are closely dependent on the amount of bank reserves and, to a lesser extent, on their distribution among banks which have different reserve requirements.

The manipulation of bank reserves and other monetary policy actions are, of course, not ends in themselves. Indeed, no monetary action is ever an end in itself, but rather the means to some more important economic purpose. What, then, is the relationship between the methods used to administer monetary policy and the goals of that policy? This question goes to the heart of monetary theory on which hundreds of volumes have been written. Here only a few sentences must suffice to summarize a very complex theory.

First, it is essential to note that money is not the driving force or the motive power which keeps the economy going. It is only the *medium* through which economic transactions are carried out. Or, to shift the analogy, it may be likened to the governor which regulates the speed of an engine by adjusting the flow of fuel to the engine to meet varying loads. In the economy it is the demand for goods and services which provides the motive for economic activity—for production. But a shortage of money or very high interest rates may slow production by delaying the start of new projects, forcing the liquidation of inventories, and other similar ways. Conversely, abnormally low interest rates and an overabundant money supply will cause inflation, encourage speculation, and stimulate a rate of economic activity which cannot be sustained. Central banks endeavor to provide an amount of bank reserves which will

allow the banking system to maintain a money supply, and the market to set interest rates, which will strike a happy medium between the two situations described above. Of course, there are many other factors which affect prices, production, and economic growth, and for that reason it is not possible to exercise any precise control over economic activity by monetary measures alone.

Certain conditions are essential if a central bank is to be effective in regulating money and credit. First, the central bank must have the necessary statutory powers and financial resources. Second, substantially all important commercial banks must be subject to the central bank's influence. Finally, willing and intelligent cooperation of the commercial banks will greatly facilitate the implementation of central bank policy. It follows that a central bank has a more difficult problem where there are many banks than where there are only a few. The problem is still further accentuated if any substantial number of the banks are not subject to the direct influence of the central bank or will not cooperate fully with its policies.

## Applying Monetary Policy

In the following sections various techniques of administering or applying monetary policy are discussed, roughly in the order in which they developed. Here attention is focused not on the detailed and precise way in which these techniques exert their effects but rather upon their broad and general characteristics and the ways in which they evolved. As noted above, most of these involve acting upon bank reserves. For that reason it may be well to look briefly at bank reserves before the advent of central banks.

**Bank Reserves Before Central Banks** In the absence of a central bank, private commercial banks must make their own arrangements for obtaining funds needed to meet cash demands of depositors. If a bank were completely independent and had no connection with other banks, it would have to hold in its own vaults enough legal tender to meet the

largest probable cash withdrawals. If the demands should exceed that amount and if the bank were unable to obtain cash by selling assets, it would be seriously embarrassed if not forced to close. In the distant past, reserves equal to 30% to 40% of deposits were sometimes carried.

Banks can, however, substantially reduce the needed reserves by voluntary joint action. They can, through correspondent relations, carry accounts with each other, and agree to rediscount paper for, or make loans to, each other in time of need. On the logical assumption that they will not all experience their peak demands at the same time, they can by these means safely reduce the total reserves carried. The principle is much the same as the one whereby a group of householders can profit by joint action in fire protection. If each household must keep enough water to provide adequate protection against fire, the total is very large. But if a hundred householders join together and build a water tank for the group, the total can be greatly reduced and still provide adequate protection. But in banking as in fire protection there is some risk of a general conflagration in which protection is needed everywhere at the same time. There is no complete protection against a monetary panic in which cash withdrawals would be excessive, but a strong central bank can provide much more protection than joint action by the banks themselves.

**Central Bank Discounting** As the early central banks developed it was natural for other banks to deposit a part of their reserves in such banks. In this way the central bank *mobilized* a large part of the bank reserves of the country at one point under one control. In the beginning the practice of placing reserves with the central bank was entirely voluntary, and it remains so in many countries today. The practice of *requiring* commercial banks to hold part or all of their reserves with the central bank was started with the establishment of the Federal Reserve System in 1913, but it has been adopted by many other countries since then.

One way in which central banks make available the mobilized reserves under their control is by discounting paper for, or making loans to, commercial

banks. This may be ordinary or routine discounting to meet seasonal needs or special needs which develop with certain individual banks or in certain areas. Or it may be emergency discounting to meet a condition of great stringency or near panic caused by a general lack of liquidity in the whole banking system. In the latter case the central bank acts as a *lender of last resort* since there is no other institution in the country capable of meeting the demands.

**How Central Banks Create Reserves** If the commercial banks presenting paper for rediscount should take the proceeds in gold, silver, or Government-issued paper money, the central bank could do no more than make available the mobilized reserves which had been deposited with it. But in practice most of the proceeds from rediscounting are taken in the form either of notes issued by the central bank or of deposits in that bank. This practice permits the central bank, within the limits set by law, to *create* reserves in these two forms, and thus to augment the total of reserves available. This is the principal source of the central bank's power to influence monetary and credit conditions.

In acting as lender of last resort, the central bank should have some reserve of unused lending power and also emergency power to suspend temporarily the ordinary limits of credit creation. Recognition of the central bank's responsibility as a lender of last resort began to develop more than a century ago and reached its full development in England in the 1870's. The underlying theory is that the only feasible way to meet a threatened money panic is for the central banks to grant accommodations freely but at a high, penalty rate. In that way urgent demands will be met but the high rate will force a contraction of total credit outstanding.

Until World War I, discounting was almost the only channel through which central bank funds were made available to the commercial banking system, although the Bank of England had started some elementary forms of open market operations by making occasional purchases of certain kinds of paper in the market. Such operations had not developed for two principal reasons. First, there were very few money markets in which they could be conducted. Second,

many central banks did not have the statutory authority to engage in them, in many cases because of the recognized danger in allowing central banks to buy Government obligations.

The more efficient use of reserves under well-developed central banking systems made it possible for a given amount of reserves to support more bank lending and investing. In this respect the establishment of the Federal Reserve System was especially opportune and dramatic because money and credit markets had been badly disorganized by the outbreak of war in Europe. In its first *Annual Report* the Federal Reserve Board made these comments on the new reserve requirements:

"The change in reserve requirements . . . released, not only in New York but throughout the country, a very considerable amount of funds which had previously had to be held idle by the banks in order to bring or keep themselves within the requirements of the law. . . . the release of actual cash was very large and . . . the increase of lending power on the part of member banks was correspondingly larger. Member banks were thereby enabled to extend loans to their customers very much more freely, with a commensurate decline of discount rates as a consequence."

\* \* \*

"The reduction of reserve requirements was only a part, however, of the beneficial effects of the new system. Appreciation of the fact that when the new lending power should all have been absorbed there would still remain the great credit potentialities of the Federal reserve banks, furnished a basic element of confidence which helped to lower the abnormally high rate of interest that had existed."

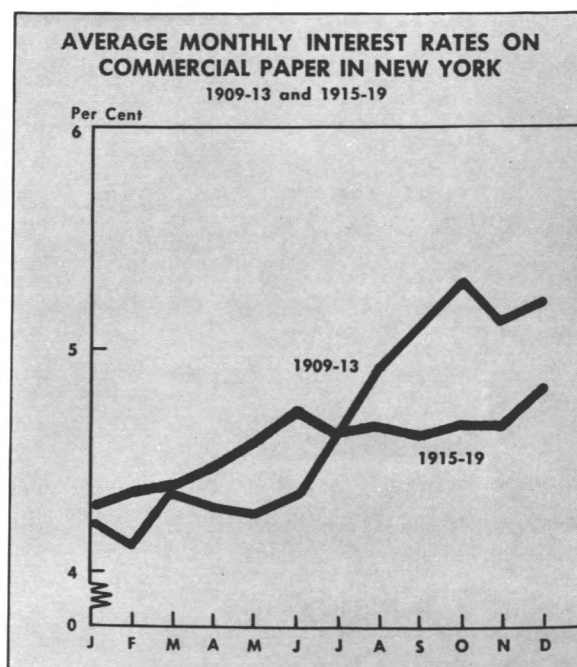
Another significant effect of the change was a reduction in the rather sharp seasonal fluctuations in interest rates. The accompanying chart shows that interest rates on commercial paper in New York fluctuated considerably less from month to month in the five years after the establishment of the Federal Reserve System than in the five years before that date.

The discounting mechanism is used as a medium for the implementation of monetary policy by moving the discount rate up and down. An increase in the rate may have both a direct and a psychological effect. The direct effect is that it makes borrowing from the

central bank more expensive and thus may cause banks to curtail their borrowing and reduce their willingness to lend. The psychological effect is that it is a signal to the business world that the central bank has embarked on a program of credit restraint and that further restraining moves may follow unless credit expansion slows down. A lowering of the discount rate has the opposite effects.

**Limitations of Discounting** Credit control through the discount rate represented a significant advance in banking theory and practice. In modern economies, however, situations frequently develop which require, on short notice, relatively large increases or decreases in bank reserves. The discount rate mechanism may not be able to provide such changes at the time and in the amounts needed. Discounting is undertaken at the initiative, not of the central bank, but of borrowing banks. Hence, the central bank may see a need for more reserves but be unable to take the initiative in supplying them. Further, many banks are reluctant to borrow heavily and may reduce their discounting while there is still need for more reserves.

In open market operations central banks developed a tool to offset the above shortcomings. Accordingly, such operations have become the major tool of credit

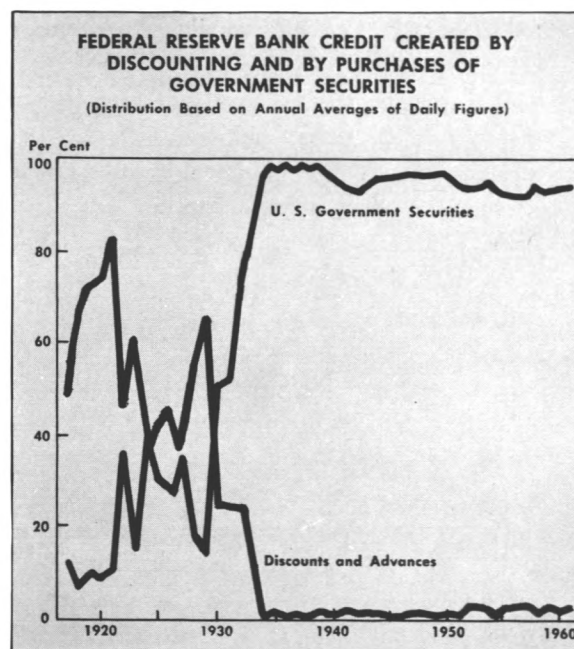


policy in most important financial nations. The accompanying chart shows how discounting and open market operations have changed in relative importance as the channels through which Reserve Bank credit is created in the United States. The discounting function declined in importance partly because central banks provided liquidity as needed through open market operations and partly because commercial banks have come to hold large amounts of short-term Government securities which can be sold when funds are needed.

**Open Market Operations** Open market operations consist of the purchase and sale of securities in the open market by the central bank. Almost always the securities are Government obligations and usually they are short-term. Such operations have been developed largely in the past 40 or 50 years. Originally they were regarded as supplementary to the discount rate and were used "to make the discount rate effective" by creating conditions which encouraged the banks to borrow more or less. Later, and especially in the 1930's, they became the principal method through which bank reserves were varied. Outside of the United States and the United Kingdom, open market operations have developed quite recently and still are used as a major tool in only a very few countries—probably not more than eight or ten.

Open market operations constitute a direct and comprehensive instrument of credit control with a number of advantages. They enable the central bank to take the initiative and to affect directly both the amount of bank credit and the volume of bank reserves. Further, open market operations are very flexible in two ways. They can be used to produce very small or very large changes in reserves. Also, the direction in which they are used can be reversed quickly if conditions warrant. Finally, they can be employed without overt publicity if that is desired. But if publicity is desired it can be obtained by a change in the discount rate or by means of a public announcement.

Several conditions are essential for the successful conduct of open market operations. Of course, the central bank must have the necessary statutory powers and the necessary financial resources. In addition, there must be a large volume of Government securities outstanding and a broad, active, and well-organized market in those securities. This is essential because at times the central bank must engage in very large operations amounting, in the United



States, to several hundreds of millions of dollars in one week. The market must be sufficiently large and active that such operations can be carried out without disrupting or upsetting the market and causing wide price changes. In practice, a large part of the outstanding securities must have short-term maturities because long-term securities are usually permanently placed in investment accounts and the trading in them is relatively "thin."

Since the above requirements are met in only a very few countries, open market operations are used as a major instrument in only a handful of nations. Other countries must continue to depend primarily on other means of control.

**Changes in Reserve Requirements** A comparatively new method of credit control is the changing of the reserve requirements of commercial banks. It was first authorized in the United States in the Banking Act of 1933, but since then has been copied by a number of central banks. An increase in requirements can wipe out existing excess reserves and even create a deficiency of reserves, forcing commercial banks to discount with the central bank or sell short-term liquid assets. This should exert a definite tightening influence on the volume of bank credit. A



reduction of requirements would ordinarily have the opposite effect.

This technique can be broad and sweeping, affecting immediately every bank to which the requirements apply. It has been looked upon as a blunt instrument and, until recently, has not been used for small, temporary reserve adjustments. Rather, it has been used chiefly to adjust to broad and apparently permanent changes in the total availability of reserves.

A variation of this technique is the system of "special deposits" used by a number of central banks. Under this system banks are required to lodge as special deposits with the central bank some specified percentage of the increase in their deposits over some time period chosen as a base. Used skillfully and firmly, this technique can remove much of the incentive of banks to extend credit and thus can be a powerful factor in stopping an inflationary growth of credit.

Still another related technique, much discussed but seldom used, is the power to require banks to maintain *secondary reserves*, usually in the form of Government securities, in addition to their primary reserves of cash and deposits in the central banks. Its purpose is to limit the amount of credit banks can extend to the private sector of the economy in the form of loans. One of its dangers is that it may create artificially favorable conditions and low interest rates in the Government securities market and thus encourage deficit financing by the Government.

**Other Methods of Credit Control** There are several other methods of controlling or influencing credit which are especially appropriate for smaller countries with relatively rudimentary money markets. One is *credit rationing*, in which the central bank sets a limit to the total amount of discounts it will accept or assigns quotas to particular banks or groups of banks. Another is *direct action*, in which the central bank acts to limit the interest rates, maturities, and purposes of the loans and investments which commercial banks may make. A substantial number of the central banks established in recent years have this power, usually stated in broad, loose terms. It has not been used extensively, but it may be influential in

making the banks pay more heed to the statements, suggestions, and policies of the central bank. Such powers do not exist in the United States except in one respect. In 1933, Federal Reserve Banks and the Board of Governors were empowered to deny discount privileges to any bank which has been excessive in financing speculation. Generally, central banks are averse to using control devices against particular banks or groups of banks because they are likely to cause friction and charges of discrimination.

*Moral suasion*, or "jaw-bone control" as it is sometimes called, is a device used occasionally by many central banks. It is the practice of "suggesting" policies which banks should follow. It may be used because the central bank finds it difficult or impossible to put together a combination of moves which will accomplish exactly the desired objectives or because it believes the end can be accomplished more smoothly by persuasion than by pressure. The effectiveness of such statements depends heavily on the prestige of the central bank and the extent to which the financial community believes that more powerful actions, if necessary, will follow the statements. They are likely to be relatively more effective in countries such as Canada and the United Kingdom in which a large part of the banking resources is concentrated in a few banks.

There is almost no limit to the areas or subjects which may be covered by moral suasion, but it must be used very carefully and very sparingly. Generally its effectiveness is likely to decline in direct proportion to the frequency of its use.

*Publicity* may be used as an adjunct to, or as a substitute for, moral suasion. In this case, the central bank endeavors to keep the banking system and the public fully informed about financial conditions and the general line of central bank policy. This is done in the hope that the banking system, from its analysis of conditions, will arrive at sound decisions as to the correct policy and will agree with the central bank's general position. If this should be true, then the banks would conclude that their own interests and the interests of the country as a whole would be best served by following the central bank's policy and would not require pressure to move them in that direction.

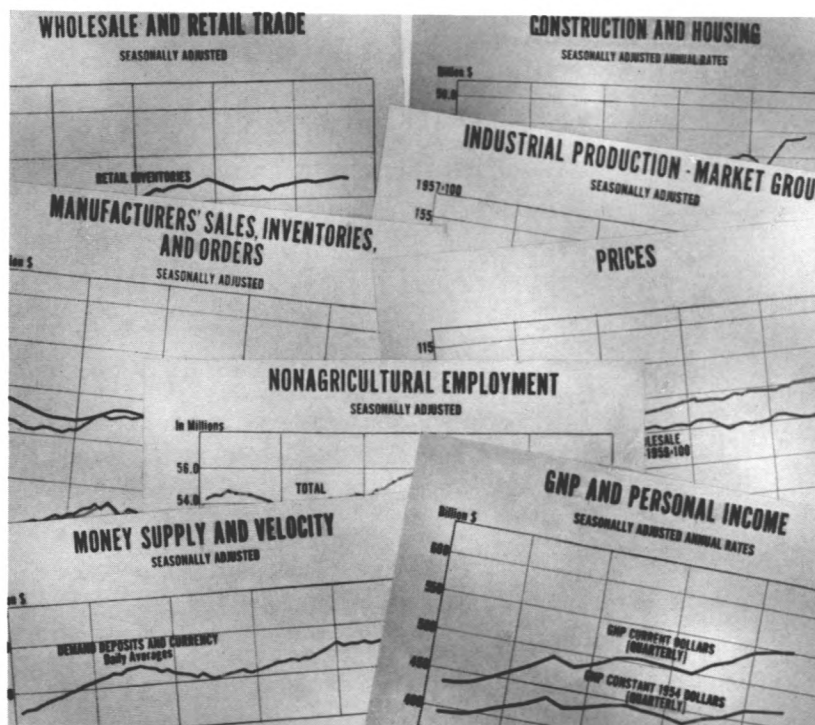
## Interest on Reserve Deposits

Quite often commercial banks which keep their reserves with a central bank express dissatisfaction because they do not receive interest on such deposits. One view is that the central bank makes large profits through the use of such deposits and the depositing banks should, in equity, receive a part of those earnings. This complaint goes back at least as far as the first year of the Federal Reserve System. Limitations of space prevent any full treatment of this topic but a few pertinent points may be noted.

This view rests on a misconception about the nature of commercial and central banking. A commercial banker knows that if he gains additional reserves he can use most of them to expand his earning assets and, since he is in business for profit, he normally keeps his earning assets about as high as his reserves permit. He does not create the reserves; they come to him from cash deposited by his customers or through the clearing house.

A central bank, on the other hand, is not operated primarily for profit, and it usually does not expand its earning assets to the full amount permitted by its reserves. Further, the central bank, in practice, is not dependent on the reserves deposited by commercial banks in the same way as commercial banks are dependent on their reserves. The central bank acquires assets—discounted paper or investments—by creating liabilities against itself, initially in the form of deposits. Those deposits must remain in the central bank unless they are withdrawn in currency, in which case the central bank will almost certainly substitute its notes for its deposit liabilities, since the notes are legal tender. Conversely, when a commercial bank builds up its reserves at the central bank it does so by depositing currency or deposits which are liabilities of the central bank. Obviously, its own liabilities cannot function as reserves for the central bank.

In the absence of a central bank the commercial banking system must hold certain nonearning assets—gold or legal tender currency—as reserves. As we have seen, the total of those reserves is greater



Many kinds of information are considered in shaping monetary policy

than the reserves needed under a central banking system. When a central bank is established and the commercial banks deposit their gold and currency reserves in the central bank, the commercial banks suffer no loss of interest since they merely exchange one nonearning asset for another. In fact, they gain because of the lower amount of reserves required. On the other hand, the central bank cannot increase its income when gold or legal tender is transferred to it. Indeed, it might experience a reduction of earnings. If the transfer were substantial, the central bank might have to sell earning assets in order to keep the bank reserves at the desired level.

The heart of the matter is that according to the principles under which central banks operate, their earning power is not increased by the deposits which commercial banks carry with them, regardless of the way in which those deposits are created. Rather, the great profitability of central banks is due to the fact that they exercise the sovereign power of governments to create money.



Central banks generally set their policies primarily to influence the level of domestic economic activity. Domestic objectives, however, cannot always be pursued without regard to a country's economic relations with the rest of the world. The level of economic activity at home is closely interrelated with a country's exports and imports of goods, services, and capital. Moreover, these exports and imports, as registered in the balance of payments, play a crucial role in determining the strength of a country's currency in foreign exchange markets. The latter consideration is of special significance to countries whose currencies function as "key currencies," that is, as substitutes for gold in the reserves of foreign central banks.

In the international payments system that has emerged since World War II, the major key currencies are the United States dollar and the United Kingdom's pound sterling. Accordingly, international considerations, while important for all central banks, are of special importance to the Federal Reserve System and to the Bank of England.

**Policy Goals** The ultimate goal of central bank policy in the international sphere is usually stated as the maintenance of international economic and financial equilibrium. The term "international equilibrium" denotes a condition in which there is no tendency for international economic and financial developments to disturb the smooth functioning of the domestic economy. In this perspective, the international functions of a central bank become a logical

extension of domestic programs designed to maintain high and stable levels of employment, reasonable price stability, and a maximum sustainable rate of economic expansion.

The connection between international and domestic objectives of central bank policy is obvious when one considers the clear implications of export and import trade for domestic levels of prices and employment and for the rate of expansion of the domestic economy. But this connection is a two-way avenue. Domestic developments themselves react strongly on the international economic situation. For example, changes in the domestic price level will almost certainly affect the volume of a country's exports and imports. Similarly, domestic interest rate movements influence the flow of capital between a country and the rest of the world. The effects of such price and interest rate movements on the international flow of goods, services, and capital in turn react on the domestic economy. Thus, the domestic and the international aspects of central bank policy objectives comprise a whole which cannot logically be separated.

**Policy Conflicts** Despite the obvious unity of international and domestic policy objectives, there may be a certain disharmony in actions directed at these objectives. For example, easy money and low interest rate policies encourage domestic business expansion and generally work to take up any existing slack in the rate of use of resources at home. On the other hand, the same policies tend to make domestic

commodity prices and investment yields less attractive relative to foreign markets. Thus, if a central bank is confronted simultaneously with a domestic business slowdown and a serious balance of payments deficit, it may be caught, so to speak, between the upper and the nether millstone. Easy money, low interest rate policies directed at promoting domestic recovery may also increase imports, reduce exports, and encourage some kinds of capital outflows, thus aggravating the balance of payments deficit and the international disequilibrium which it represents.

Since the advent of central banking institutions, attitudes respecting the relative importance of domestic and international objectives have undergone a rather pronounced evolution. In the early years of central banking, and especially in the period of the "old gold standard" (roughly 1870-1914), international objectives appeared to take precedence. Then in the interwar period (1920-1940) domestic considerations predominated, with international objectives relegated to a subordinate position. Since World War II, and especially over the past few years, central banks have increasingly tended to give equal weight to the two sets of objectives and to seek an acceptable balance in the simultaneous promotion of domestic and international equilibrium.

## The Gold Standard Era

Under the old gold standard, central banks were concerned more with international than with domestic developments. A primary objective was to maintain public confidence in convertibility, that is, in the general exchangeability of currency into gold on demand. This was of prime importance in that period, since a crisis in confidence could be expected to lead to wholesale redemptions of bank notes for gold specie, with corresponding reductions in the money supply, bank credit, and domestic and foreign commerce. Frequently, threats to convertibility were initiated by external drains of gold which resulted from balance of payments deficits. Such drains diminished the banking system's reserves and, if prolonged, damaged public confidence in the ability of banks to continue redeeming their notes. Because of this, central banks generally tried to halt adverse gold flows with reasonable speed.

**Gold Standard Features** The gold standard embodies certain features which automatically make for stability in certain important aspects of international economic relationships. When most countries were on a gold standard, the important currencies of the world were defined in terms of gold, and the various monetary authorities stood ready at all times to buy and sell gold at prices corresponding to the gold content of their respective currencies.

These conditions resulted in relatively fixed exchange rates, or value relationships between currencies. Exchange rates could vary only within narrow limits set by the cost of shipping gold.

**Automatic Equilibrium** The relative fixity of exchange rates under the gold standard worked to maintain international equilibrium of a sort, but tended to generate episodic disturbances domestically. A balance of payments deficit for a given country increased the supply of that country's currency held by foreigners and diminished the foreign currency holdings of the deficit country's residents. This tended to drive up the exchange rates on foreign currencies. If the deficit persisted, the cost of foreign currencies tended to rise to a point at which payments abroad could be made cheaper by buying and shipping gold. Under such circumstances the deficit country experienced gold losses. This tightened money and credit conditions, tending to depress domestic prices and incomes and to push up interest rates. At the same time, the foreign countries receiving the gold experienced monetary expansion, which exerted upward pressure on prices and incomes and downward pressure on interest yields.

As a result of these developments, capital was attracted to the deficit country to take advantage of the higher yields. Moreover, the price and income changes tended to increase the deficit country's exports and to reduce its imports. In this fashion, the forces automatically set in motion under the international gold standard tended to eliminate deficits and to restore international equilibrium.

But it should be noted that this automatic equilibrating process was not without hazard, especially to the deficit country. Reduced prices and incomes there could well be accompanied by business failures and unemployment. Moreover, the gold losses could touch off serious banking disturbances that might lead to temporary business paralysis. In the countries receiving the gold, inflation became a danger. These possibilities made balance of payments developments a matter of prime concern to central banks.



**The Rules of the Game** In the gold standard period, the general prescription for dealing with international disequilibrium called for central bank action to support the forces automatically set in motion by the gold movements. In a deficit country, the central bank was supposed to reinforce the deflationary effects of its gold losses by raising the discount rate or selling securities in the open market. Opposite action was called for by the central bank of a country experiencing gold and capital inflows. This prescription, which really amounted to helping nature take its course, came to be known as following "the rules of the game."

It is sometimes assumed that the period of the gold standard was an idyllic age in which central banks faithfully supplemented the automatic equilibrating forces inherent in the monetary system. In practice, however, central banks often hesitated to deflate further the domestic economy when a balance of payments deficit coincided with a domestic recession. Conversely, they were often reluctant to inflate the domestic economy deliberately in opposite circumstances. In such situations, therefore, central banks sometimes did nothing or even adopted policies which offset the effects of market developments. It must be said, however, that convertibility and international equilibrium were regarded as the principal goals during the gold standard period. Consequently, central banks rarely, if ever, took action to offset completely the effects of international gold movements.

**Abandonment of the Gold Standard** The gold standard era came to an end with the outbreak of World War I when one country after another resorted to inconvertible paper standards. Most nations regarded the suspension as temporary, but in the economic confusion that followed the end of hostilities, restoration of the gold standard in its prewar form proved impossible. Only the United States, among the major nations, was able to return promptly to prewar arrangements. England, long the world's financial center, was not able to reinstate gold until 1925, and then in a form somewhat different from its prewar system.

Most other nations, eager to maintain some connection with the gold standard despite their meager gold holdings, adopted the gold exchange standard. Under this system a country's central bank held part of its reserves in currencies which were convertible into gold at fixed prices. These convertible currencies became "key currencies" in the sense that

they supported the monetary and credit systems of other nations. Therefore, the gold stock of the gold-rich countries performed double duty, supporting the domestic currencies and also providing a base on which a huge inverted pyramid of international liquidity rested.

**Gold Exchange Features** Under the gold exchange standard, relatively large claims on key currency countries are held abroad. When a key currency country experiences a balance of payments deficit, these foreign claims grow. As foreign central banks accumulate the key currency beyond their reserve needs they are likely to convert it into gold and the key currency country experiences gold losses. Continued gold losses may eventually impair confidence in the key currency to the point that foreigners begin wholesale conversions into gold. Indeed, such conversions might be touched off, independently of a balance of payments deficit, by any of a variety of developments, economic or political, which might affect world confidence in the currency.

The collapse of a key currency is likely to be accompanied by serious worldwide dislocations. The monetary systems of numerous countries would be affected and the value relationship among the world's currencies, that is, the exchange rate structure, would be seriously disturbed. Inevitably, sharp curtailments in the volume of international trade and investment would follow.

## The Interwar Period

The rules of the game apply in general in the gold exchange as well as in the old gold standard. But under the gold exchange standard of the interwar period the major countries of the world were little disposed to follow those rules. Nor were they prepared to engage in the kind of cooperation that is necessary for the continued success of a gold exchange system. Rather, each country was preoccupied with domestic problems of unemployment and with the thorny reparations issue, both a legacy of World War I. International equilibrium in this period was sacrificed to these preoccupations.



The gold exchange system of this period collapsed in 1931 with a run on the British pound, the principal key currency of that time. In that year, Britain was forced off the gold standard, with disastrous effects upon the monetary systems of most other countries. The ensuing curtailment of international trade and investment was a major factor in the severity and persistence of the Great Depression.

**Exchange Stabilization Funds** Other countries soon followed Britain in abandoning gold. As a result, rates were torn loose from their gold moorings and began to fluctuate widely. Moreover, the world tended to divide itself into currency blocs—the sterling area, the exchange control group, and the “gold bloc.” In that environment, central banks acquired additional functions and revised their views of their immediate policy responsibilities.

Widely fluctuating exchange rates introduced added risks and complications in making international payments and discouraged world trade and investment. Accordingly, one of the first problems confronting the monetary authorities of the various countries was that of restoring some order in the exchange rate structure. To this end some countries set up exchange stabilization funds to buy and sell foreign currencies with a view to limiting exchange rate fluctuations. For the most part those exchange stabilization funds were managed by central banks. Thus central banks were called on to perform a func-

tion which was discharged automatically under the old gold standard.

**A New Orientation** From 1931 to the outbreak of World War II central banks, following the lead of their governments, concerned themselves primarily with promoting recovery from the Great Depression. International economic relationships were evaluated primarily from the standpoint of their immediate impact on domestic employment. Most countries introduced close controls over international trade in order to insulate the domestic economy from adverse employment effects arising out of foreign trade. Gone were the days when central banks permitted balance of payments deficits to exert deflationary pressures on domestic business. Rather, the general practice was to pursue policies of active ease at home and to cushion the balance of payments effects of these policies through a comprehensive set of restrictions on foreign intercourse. Indeed, whenever it was possible to employ these restrictions to help domestic employment, even at the expense of another country, this practice was commonly followed.

**Exchange Controls** Among the various restrictions employed in this period were protective tariffs, import quotas, and exchange controls. The latter were perhaps the most important. Central banks played an important role in administering these because their effective employment required the cooperation of the commercial banking system.

In essence, exchange controls involved the mobilization of the foreign exchange earned by residents and the allocation of this exchange among importers and others wishing to make payments abroad. The execution of exchange control policy was by no means simple. The exchange control authority had to decide such things as how much to allocate for specific imports and for other purposes, what countries to favor, what domestic industries to encourage, and so forth. These decisions affected not only the external relations of the country but also the structure and performance of the domestic economy. Hence, exchange controls involved much more than mere financial manipulation.

Exchange controls, exchange rate manipulation, and the various other restrictions adopted in the period proved an effective set of tools in subordinating international economic relations to the requirements of domestic programs to restore full employment. The extremes to which they were carried in the 1930's lead many economic historians to characterize this period as one of monetary nationalism. While the restrictions may have made short-run contributions to the solution of unemployment problems, they suffered from one serious shortcoming. All countries could employ them, in beggar-thy-neighbor fashion, to help themselves at the expense of other countries. In practice they degenerated into vicious instruments of foreign policy and became an important factor contributing to the embittered international relations that preceded World War II. Their net economic effect was to reduce the volume of foreign trade and investment and to divert the resources of the world to less efficient uses.

## Postwar Developments

World War II further disrupted the pattern of world trade and investment, and restrictive practices were much tighter at the end than at the beginning. Monetary authorities the world over, however, felt keenly the need for a revitalized system of international payments under which multilateral trade could flourish.

**The International Monetary Fund** The establishment of the International Monetary Fund (IMF) in 1944 was a first step in the creation of a new and more wholesome environment of international economic relations. This institution aimed at abolition of exchange controls, restoration of exchange rate stability, and the institution of a system of international payments under which national governments could pursue full employment objectives while at the same time enjoying all the advantages of relatively free international trade and investment.

Basically, the IMF agreement envisaged a world payments system which had the advantages of the gold standard without its more significant disadvantages. By requiring all member nations to establish fixed, or par, values for their currencies in terms of either gold or United States dollars and to limit exchange rate fluctuations within 1% of the par value, the IMF set up an exchange rate structure similar to that under the gold standard. In the chaotic economic conditions following World War II, it was





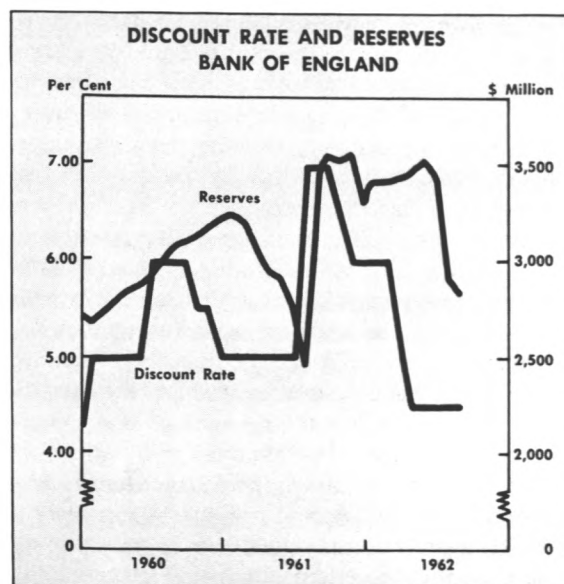
recognized that the aims of the new organization could not be achieved at short range. Therefore, special provisions were made to allow countries to move gradually over to the new system without prejudice to their programs for promoting reconstruction and recovery from the dislocations of the war. For example, member countries were allowed to maintain exchange controls and other restrictions, but with the understanding that these would be abolished as soon as recovery allowed.

Very relevant for monetary policy was the creation of a currency pool on which members could draw in the event of temporary deficits. This pool, managed by the Fund, made available a supply of supplemental reserves which could be drawn upon in time of need. These reserves allowed member countries to weather temporary deficits without deflating their domestic economies or devaluing their currencies.

In addition, member nations were allowed to change the par value of their currencies by 10% on their own authority or by any amount with the approval of the Fund if they could show this was necessary to correct a basic disequilibrium. The latter arrangement provided a means for correcting balance of payments deficits without domestic deflation, for lower exchange rates encouraged a country's exports and discouraged its imports.

As the Fund has developed, it has also become an important forum through which the world's major central banks work to coordinate their activities to maintain international equilibrium as well as domestic full employment. Other agencies which supplement this function include the Bank for International Settlements and the recently established Organization for Economic Cooperation and Development.

**The New Gold Exchange Standard** The painstaking efforts of international organizations like the IMF and the cooperation of the countries of the Free World led to the emergence by the late 1950's of a distinctly new international payments system. In form, the new system is a gold exchange standard, bearing a close resemblance to that of the 1925-31 period. In several important respects, however, the present system differs from its earlier counterpart. First, the major countries of the world regard it as a permanent, workable system, not as a temporary expedient. Also currencies may be defined in terms of either gold or the United States dollar. Thus, the United States dollar, rather than the British pound, has become the prime key currency, although the pound is the second major such currency.



In the present system, pyramiding on the world's gold base has been carried somewhat further than in the 1920's. In other words, a larger proportion of the world's international reserves is in the form of foreign exchange holdings, which means that the gold stock available to the Free World has to support a relatively larger volume of outstanding claims against it.

The greater degree of pyramiding, however, by no means implies greater instability. While pyramiding involves problems, it also serves a very useful purpose in economizing gold and making possible a sizable increase in international liquidity to accommodate the expanding volume of international transactions. Fundamentally, the stability of the system rests on continued cooperation among the world's several monetary authorities, and this appears to be forthcoming today to a much greater extent than in the 1920's. More specifically, the system's workability depends on continuing confidence of the rest of the world in the key currencies, and this places great responsibility on the key currency country to manage its external affairs, as well as its internal finances, with prudence. The situation is analogous to that of the banker whose deposit liabilities are far in excess of his reserves. So long as his customers' confidence is maintained, he can continue to provide his community with a satisfactory payments system. But public confidence rests ultimately on demonstrated prudence in the management of his affairs.

Balance of payments developments become of acute significance to the central bank of a key currency country. A balance of payments surplus, for example, will deprive other countries of their reserves and generate problems for them. On the other hand, persistent deficits, by placing increasing amounts of the key currency in the hands of foreign central banks, create the danger of large-scale conversions into gold. Disequilibrating balance of payments developments may be associated with international trade in goods and services or with international capital movements. The latter, especially those of a speculative nature, can be particularly hazardous. For that reason, the central bank of a key currency country must pay close attention to a variety of factors bearing on foreign trade and foreign capital movements. In particular it must be acutely alive to exchange rate movements, in both spot and forward markets, to international price differentials, and especially to international interest rate differentials and other factors that affect capital flows.

**The Federal Reserve and the New System** The key position of the United States in the present world payments system represents a new role for this country. Traditionally, economic activity in this country has had a predominantly domestic orientation, and foreign trade and investment have been of less relative importance than in the major trading countries of Europe and Asia. Moreover, the United States in the first half of the twentieth century had no experience with serious disequilibrium in its balance of payments. Consequently, interest in balance of payments developments has not been as great in this country as elsewhere.

After 1950, however, balance of payments deficits began to develop. The deficits between 1950 and 1958 were persistent but relatively small, in a magnitude of about \$1 billion per year. In these years foreign private interests were quite willing to hold dollars, and foreign central banks were willing to hold most of the dollars presented to them in exchange for local currencies. Since 1958 the deficits have been much larger, averaging \$3.4 billion per year. These deficits have added some \$15 billion to the dollar holdings of foreigners, a large part of which has accrued to foreign central banks. Increasingly, these foreign central banks have shown a tendency to convert their additional dollar holdings to gold, and about \$7 billion has been so converted over the past five years. The threat to the dollar's world position which has been posed by these gold losses was dramatized in the fall of 1960 by the sharp rise in the price

of gold on the London gold market and by the shifting of short-term funds to Europe.

These short-term capital movements involved large-scale conversions of dollars into local currencies by foreigners and placed large amounts of additional dollar balances in the hands of foreign central banks, many of which already held more dollars than they customarily held for their reserve needs. Such movements, if continued over any extended period, could result in foreign demands on the United States gold stock of dangerously large proportions.

In these circumstances, the Treasury's Exchange Stabilization Fund began more vigorous operations in the foreign exchange market in order to absorb excess dollars in foreign markets through purchases of dollars with foreign currencies and thus to reduce the purchase of gold by foreign central banks. In addition, it aimed to influence both spot and forward prices of dollars in terms of foreign currencies in order to reduce the underlying incentive for speculative movements of capital out of this country.

To help the Treasury achieve its goal, which was also vital to the System, the Federal Reserve System began foreign exchange operations early in 1962. Operations for both the Treasury and the Federal Reserve are conducted by the Federal Reserve Bank of New York, and frequent telephone conversations between the Treasury, the New York Bank, the Board, and other Reserve Banks insure coordination in the use of both funds.

The Treasury and Federal Reserve have also cooperated to maintain short-term interest rates competitive with those abroad. To help keep short rates up, the Treasury has added significantly to the supply of short-term debt outstanding. For its part, the Federal Reserve now conducts its open market operations throughout the list of Treasury issues with a view to minimizing downward pressure on short-term yields. When, for example, the Federal Reserve needs to supply reserves to the commercial banking system, it can do so with a minimum of downward pressure on short rates by purchasing intermediate- or long-term securities.

Through interest rate policy and foreign exchange operations, the Treasury and Federal Reserve System have thus far been able to moderate foreign pressure on the dollar and the United States gold stock.

**Inter-Central Bank Cooperation** In its new operations in the arena of international finance, the Federal Reserve has received the wholehearted cooperation of foreign central banks and monetary authorities. This cooperation has been forthcoming in large

measure from a realization that self-interest requires it. The important trading countries have a vital stake in the new gold exchange system and can ill-afford to risk its destruction. But cooperation is not a one-way street. The U. S. Treasury and the System have acted on a number of occasions to ease the problems of other countries.

Cooperation has manifested itself in a number of ways. In the first place, the foreign currency resources required for the Federal Reserve's new operations have been acquired as a result of "swap" arrangements with foreign monetary authorities. These involve granting dollar credits to these authorities in exchange for foreign currency credits, under agreements that the dollars thus acquired will not be converted into gold but rather retired by the Federal Reserve with foreign currencies purchased when the markets are more favorable. Most of these "swap" agreements have been on a stand-by basis to be implemented in time of need.

A notable example of cooperation occurred in the last half of 1960 when several of the European countries most directly involved took appropriate action to prevent flights of short-term capital from the United States and to restore confidence in the dollar. Monetary authorities of Germany and England adopted policies of greater credit ease, and the Bank of Switzerland sought to discourage the inflow of foreign capital by changing the regulations governing time deposits and the flotation of bond and stock issues on the Swiss market.

Another example occurred in March of 1961 when the pound sterling came under pressure as a result

of large-scale short-term capital flights to Germany and the Netherlands touched off by revaluations of the currencies of those two continental countries. To protect English reserves, the central banks of Europe agreed to hold sterling balances instead of converting them into gold. They also issued a joint announcement to the effect that the central banks were co-operating closely to prevent speculative capital movements. The most recent and perhaps most dramatic evidence of international cooperation occurred in June 1962, when the International Monetary Fund, the Export-Import Bank, the Federal Reserve System, and the Bank of England extended to Canada over \$1 billion in short-term credit.

**Conclusion** In recent years the international payments mechanism has been the subject of much controversy. Some argue that the existing system is obsolete and should be replaced by an international central bank which would perform for the entire world a function similar to that performed by a central bank for an individual country. On the other extreme, some advocate returning to the gold coin standard of pre-World War I days.

The countries of the Free World have rejected these extremes. All nations feel keenly the need of a satisfactory system of international payments, but they are also interested in preserving existing institutions. Consequently, their monetary authorities are cooperating to meet problems as they occur. They appear determined to make the gold exchange standard a workable, efficient system of international payments.



# Summary of Operations

In its forty-eighth year of operation, the number of checks cleared by the Bank passed the 300 million mark. This was 15 million more than in 1961 and 97 million greater than the 209 million handled just ten years earlier.

During the year the amount of currency handled was close to \$5.5 billion, surpassing 1961 by about 5 per cent. Coin received and paid out topped \$161 million, up \$10 million from the previous year. Transfers of funds showed a significant increase with a 1962 figure of \$119 billion, 14 per cent above the 1961 level.

The volume of bank borrowing at the discount window has not been large in recent years as a result of the easy money policy pursued by the Federal Reserve System since mid-1960 and the increasing popularity of the Federal Funds Market as a source of short term credit. Although small in relation to earlier years, the 1962 borrowings of nearly \$2.4 billion were higher than the \$1.8 billion of 1961 when the level of borrowings reached their lowest point of the last ten years.

Our net earnings before payments to the United States Treasury increased by over \$7 million, totaling \$55,456,864.51. Member banks received statutory dividends of \$1,272,977.39 during the year. The Bank's surplus account was increased \$3,960,900.00 (surplus is twice paid in capital), and the remaining net earnings of \$50,222,987.12 were paid to the U. S. Treasury as interest on Federal Reserve notes.

Capital stock increased by \$1,980,450.00, reflecting the increase in the capital and surplus of member banks.

Publications and statistical reports of the Bank were widely distributed during the year. Over 138,000 copies of our *Monthly Review* were sent to bankers, businessmen, educators, students, and other interested individuals, and more than 228,000 copies

of other publications were distributed by our Bank.

In addition to the annual college survey, in which suitable publications are offered for classroom use to professors of economics and related subjects, the Bank conducted a similar high school survey to encourage the teaching of economics at that level. Requests for publications were received from approximately 750 Fifth District high schools. Our money displays which are made available to District member banks for one-week periods were in great demand throughout the year.

The annual Young Bankers Seminar was held in April of 1962. The Seminar was attended by 176 bankers, representing 97 District member banks and branches. A similar two-day session is planned for the spring of 1963.

## Emergency Preparedness

Arrangements were completed this year with selected member banks located strategically throughout the District to serve as cash agents. Details of the Cash Agent Plan are contained in Emergency Circulars 6 and 7, distributed to all banks in the District on March 30, 1962. At year end a General Emergency Circular was distributed, which describes the plans made by this Bank for operations essential to the continuity of banking during an emergency.

Preparation and stocking of fallout shelters to meet Civil Defense standards was completed for each of our three offices in 1962.

Some progress was made this year by commercial banks in the field of emergency preparedness but much remains to be done.



## Electronics

In 1961 the decision was made to install high-speed electronic equipment for both check handling and internal data processing requirements.

An International Business Machine 1401 RAMAC data processing system was installed at the Richmond office in late June, 1962, and by year end approximately 75 per cent of the accounting and statistical operations previously handled on tabulating equipment had been transferred to computer processing. The system consists of a central processor, a card read punch, a printer, a disk storage unit, and a console inquiry station.

On October 26 a Burroughs B 270 electronic check processing system was delivered to the Richmond office. This system consists of the central processor, a sorter-reader, card reader, card punch, and a multiple tape lister. The sorter-reader is capable of reading and sorting documents encoded with magnetic ink at speeds up to 1,560 items per minute, and the multiple tape lister prints on two tapes simultaneously at speeds up to 1,600 lines per minute.

Within two weeks after installation checks were being processed on the equipment, and by the end of the year upwards of 50,000 checks per day were being processed.

For high-speed handling, checks must have the routing symbol-transit number and the amount properly encoded in magnetic ink. More than two-thirds of the checks clearing through the Richmond office now have the routing symbol-transit number encoded on them in magnetic ink. An increasing number received from other Federal Reserve Banks as well as from member banks are amount encoded. Our night Transit force is presently amount encoding most of the checks that are processed on the high-speed system, but this situation is expected to change rather rapidly as more and more member banks install electronic check processing equipment.

IBM high-speed check processing systems will be installed in the Baltimore and Charlotte Branches early in 1963.

## New Member Banks

Six newly formed Fifth District banks entered the Reserve System during the year, and two former nonmember banks converted to System membership. Member banks opening for the first time during 1962 were: the First National Bank of Vienna, Vienna, Virginia, February 23; the First National Bank of Lancaster, Lancaster, South Carolina, April 16; the Metropolitan National Bank, Wheaton, Maryland, June 18; the Peoples National Bank of Gloucester, Gloucester, Virginia, August 31; the District of Columbia National Bank, Washington, D. C., October 3; and the First National Bank of St. George, St. George, South Carolina, November 15.

The Bank of Commerce, Charlotte, North Carolina, joined the System as a state member on November 19; and Richmond National Bank and Trust Company, formerly Richmond Bank and Trust Company, became the 424th Fifth District member on December 1.

## Changes in Official Staff

The year 1962 brought about several changes in the Bank's official staff. The many friends of Vice President James M. Slay were saddened by his death on May 10. In June B. U. Ratchford was named vice president and senior adviser.

Robert P. Black and Raymond E. Sanders, Jr., formerly assistant vice presidents, were elected vice presidents in June and July, respectively.

Appointed to the official staff at the Richmond office were James Parthemos, J. Lander Allin, Jr., and Arthur V. Myers, Jr. Mr. Parthemos was named assistant vice president in Research; Messrs. Allin and Myers were elected assistant cashiers in Accounting and Bank and Public Relations, respectively. Winfred W. Keller was named assistant cashier at our Charlotte office in September.

Robert R. Fentress and William H. Gentry, Jr., resigned to accept positions with commercial banks of the District.

# Comparative Statement of Condition

<b><u>ASSETS:</u></b>	DECEMBER 31, 1962	DECEMBER 31, 1961
Gold certificate account .....	\$ 894,629,406.31	\$1,087,526,464.63
Redemption fund for Federal Reserve notes .....	100,516,830.00	95,166,005.00
TOTAL GOLD CERTIFICATE RESERVES .....	995,146,236.31	1,182,692,469.63
Federal Reserve notes of other banks .....	36,860,300.00	40,868,860.00
Other cash .....	25,644,066.01	21,451,866.15
Discounts and advances .....	995,000.00	1,165,000.00
U. S. Government securities:		
Bills .....	165,733,000.00	206,976,000.00
Certificates .....	894,553,000.00	110,158,000.00
Notes .....	727,296,000.00	1,295,353,000.00
Bonds .....	280,729,000.00	249,280,000.00
TOTAL U. S. GOVERNMENT SECURITIES .....	2,068,311,000.00	1,861,767,000.00
TOTAL LOANS AND SECURITIES .....	2,069,306,000.00	1,862,932,000.00
Cash items in process of collection .....	572,259,096.25	514,301,381.09
Bank premises .....	5,116,166.03	5,589,901.25
Other assets .....	22,311,118.99	15,487,701.03
TOTAL ASSETS .....	<u>\$3,726,642,983.59</u>	<u>\$3,643,324,179.15</u>
<b><u>LIABILITIES:</u></b>		
Federal Reserve notes .....	\$2,525,031,750.00	\$2,380,497,515.00
Deposits:		
Member bank—reserve accounts .....	761,009,058.90	759,969,411.63
U. S. Treasurer—general account .....	27,944,548.68	49,871,083.28
Foreign .....	11,700,000.00	12,190,000.00
Other .....	10,181,264.10	6,032,204.32
TOTAL DEPOSITS .....	810,834,871.68	828,062,699.23
Deferred availability cash items .....	320,368,007.44	370,799,639.99
Other liabilities .....	4,254,904.47	3,752,224.93
TOTAL LIABILITIES .....	3,660,489,533.59	3,583,112,079.15
<b><u>CAPITAL ACCOUNTS:</u></b>		
Capital paid in .....	22,051,150.00	20,070,700.00
Surplus .....	44,102,300.00	40,141,400.00
TOTAL LIABILITIES AND CAPITAL ACCOUNTS .....	<u>\$3,726,642,983.59</u>	<u>\$3,643,324,179.15</u>
Contingent liability on acceptances purchased for foreign correspondents	\$ 3,784,500.00	\$ 5,750,000.00

# Comparative Statement of Earnings and Expenses

EARNINGS:	1962	1961
Discounts and advances .....	\$ 238,006.42	\$ 152,702.60
Interest on U. S. Government securities .....	67,479,037.72	59,258,665.26
Foreign currencies .....	157,607.00	—
Other earnings .....	13,387.64	17,151.11
<b>TOTAL CURRENT EARNINGS</b> .....	<b>67,888,038.78</b>	<b>59,428,518.97</b>
 <b>EXPENSES:</b>		
Operating expenses (including depreciation on bank premises) after deducting reimbursements received for certain Fiscal Agency and other expenses .....	11,541,987.12	10,581,541.90
Assessments for expenses of Board of Governors .....	301,900.00	287,400.00
Cost of Federal Reserve currency .....	684,468.53	697,278.71
<b>NET EXPENSES</b> .....	<b>12,528,355.65</b>	<b>11,566,220.61</b>
<b>CURRENT NET EARNINGS</b> .....	<b>55,359,683.13</b>	<b>47,862,298.36</b>
 <b>ADDITIONS TO CURRENT NET EARNINGS:</b>		
Profit on sales of U. S. Government securities (net) .....	130,618.22	219,353.67
All other .....	33,988.44	515.24
<b>TOTAL ADDITIONS</b> .....	<b>164,606.66</b>	<b>219,868.91</b>
<b>DEDUCTIONS FROM CURRENT NET EARNINGS</b> .....	<b>67,425.28</b>	<b>3,594.91</b>
<b>Net additions</b> .....	<b>97,181.38</b>	<b>216,274.00</b>
<b>NET EARNINGS BEFORE PAYMENTS TO U. S. TREASURY</b> ..	<b>\$55,456,864.51</b>	<b>\$48,078,572.36</b>
Dividends paid .....	\$ 1,272,977.39	\$ 1,168,329.36
Paid U. S. Treasury (interest on Federal Reserve notes) .....	50,222,987.12	44,327,343.00
Transferred to surplus .....	3,960,900.00	2,582,900.00
<b>TOTAL</b> .....	<b>\$55,456,864.51</b>	<b>\$48,078,572.36</b>
 <b>SURPLUS ACCOUNT</b>		
Balance at close of previous year .....	\$40,141,400.00	\$37,558,500.00
Addition account of profits for year .....	3,960,900.00	2,582,900.00
<b>BALANCE AT CLOSE OF CURRENT YEAR</b> .....	<b>\$44,102,300.00</b>	<b>\$40,141,400.00</b>
 <b>CAPITAL STOCK ACCOUNT</b>		
(Representing amount paid in, which is 50% of amount subscribed)		
Balance at close of previous year .....	\$20,070,700.00	\$18,779,250.00
Issued during the year .....	2,049,450.00	1,318,050.00
Cancelled during the year .....	22,120,150.00	20,097,300.00
<b>BALANCE AT CLOSE OF CURRENT YEAR</b> .....	<b>\$22,051,150.00</b>	<b>\$20,070,700.00</b>

# Federal Reserve Bank of Richmond

## Directors (December 31, 1962)

Alonzo G. Decker, Jr. Chairman of the Board and Federal Reserve Agent  
Succeeded by: Edwin Hyde

Edwin Hyde Deputy Chairman of the Board  
Succeeded by: William H. Grier

### CLASS A

H. H. Cooley President, The Round Hill National Bank  
Round Hill, Virginia (Term expires December 31, 1962)  
Succeeded by: David K. Cushwa, Jr., President  
The Washington County National Savings  
Bank  
Williamsport, Maryland  
(Term expires December 31, 1965)

Addison H. Reese President, North Carolina National Bank  
Charlotte, North Carolina (Term expires December 31, 1963)

J. McKenny Willis, Jr. Director, Maryland National Bank  
Easton, Maryland (Term expires December 31, 1964)

### CLASS B

Robert Richardson Coker President, Coker's Pedigreed Seed Company  
Hartsville, South Carolina (Term expires December 31, 1964)

Robert E. L. Johnson Chairman of the Board, Woodward & Lothrop, Inc.  
Washington, D. C. (Term expires December 31, 1963)

Raymond E. Salvati Chairman of the Board, Island Creek Coal Company  
Huntington, West Virginia (Term expires December 31, 1965)

### CLASS C

Alonzo G. Decker, Jr. President, The Black & Decker Manufacturing Company  
Towson, Maryland (Term expires December 31, 1962)  
Succeeded by: Wilson H. Elkins, President  
University of Maryland  
College Park, Maryland  
(Term expires December 31, 1965)

William H. Grier President, Rock Hill Printing & Finishing Company  
Rock Hill, South Carolina (Term expires December 31, 1963)

Edwin Hyde President, Miller & Rhoads, Inc.  
Richmond, Virginia (Term expires December 31, 1964)

### MEMBER FEDERAL ADVISORY COUNCIL

Robert B. Hobbs Chairman of the Board, First National Bank of Maryland  
Baltimore, Maryland (Term expires December 31, 1963)



# Federal Reserve Bank of Richmond

## Officers

Edward A. Wayne  
*President*

Aubrey N. Heflin  
*First Vice President*

Robert P. Black  
*Vice President*

J. Gordon Dickerson, Jr.  
*Vice President*

Welford S. Farmer  
*General Counsel*

Donald F. Hagner  
*Vice President*

Edmund F. Mac Donald  
*Vice President*

Upton S. Martin  
*Vice President*

John L. Nosker  
*Vice President*

Joseph M. Nowlan  
*Vice President and Cashier*

B. U. Ratchford  
*Vice President and  
Senior Adviser*

Raymond E. Sanders, Jr.  
*Vice President*

John G. Deitrick  
*Assistant Vice President*

Stuart P. Fishburne  
*Assistant Vice President*

H. Ernest Ford  
*Assistant Vice President*

William B. Harrison, III  
*Assistant Vice President*

James Parthemos  
*Assistant Vice President*

Victor E. Pregeant, III  
*Assistant Vice President  
and Secretary*

Joseph F. Viverette  
*Assistant Vice President*

J. Lander Allin, Jr.  
*Assistant Cashier*

Clifford B. Beavers  
*Assistant Cashier*

John E. Friend  
*Assistant Cashier*

John C. Horigan  
*Chief Examiner*

Robert L. Miller  
*Assistant Cashier*

Arthur V. Myers, Jr.  
*Assistant Cashier*

Wythe B. Wakeham  
*Assistant Cashier*

G. Harold Snead  
*General Auditor*

Roger P. Schad  
*Assistant General Auditor*

## Baltimore Branch

Donald F. Hagner  
*Vice President*

A. A. Stewart, Jr.  
*Cashier*

B. F. Armstrong  
*Assistant Cashier*

E. Riggs Jones, Jr.  
*Assistant Cashier*

A. C. Wienert  
*Assistant Cashier*

## Charlotte Branch

Edmund F. Mac Donald  
*Vice President*

Stanhope A. Ligon  
*Cashier*

Winfred W. Keller  
*Assistant Cashier*

Fred C. Krueger, Jr.  
*Assistant Cashier*

E. Clinton Mondy  
*Assistant Cashier*

# Baltimore Branch

## Directors (December 31, 1962)

Gordon M. Cairns	Dean of Agriculture, University of Maryland College Park, Maryland (Term expires December 31, 1962) Succeeded by: E. Wayne Corrin, President Hope Natural Gas Company Clarksburg, West Virginia (Term expires December 31, 1965)
Leonard C. Crewe, Jr.	President and Treasurer Maryland Fine and Specialty Wire Company, Inc. Cockeysville, Maryland (Term expires December 31, 1964)
Harry B. Cummings	Vice President and General Manager Metal Products Division, Koppers Company, Inc. Baltimore, Maryland (Term expires December 31, 1963)
Harvey E. Emmart	Senior Vice President and Cashier Maryland National Bank Baltimore, Maryland (Term expires December 31, 1964)
James W. McElroy	Director, First National Bank of Maryland Baltimore, Maryland (Term expires December 31, 1962) Succeeded by: Joseph B. Browne, President Union Trust Company of Maryland Baltimore, Maryland (Term expires December 31, 1965)
Martin Piribek	Executive Vice President The First National Bank of Morgantown Morgantown, West Virginia (Term expires December 31, 1964)
J. N. Shumate	President, The Farmers National Bank of Annapolis Annapolis, Maryland (Term expires December 31, 1963)

# Charlotte Branch

## Directors (December 31, 1962)

George H. Aull	Agricultural Economist, Clemson College Clemson, South Carolina (Term expires December 31, 1963)
Wallace W. Brawley	President, The Commercial National Bank of Spartanburg Spartanburg, South Carolina (Term expires December 31, 1964)
J. C. Cowan, Jr.	Vice Chairman of the Board, Burlington Industries, Inc. Greensboro, North Carolina (Term expires December 31, 1965)
W. W. McEachern	President, The South Carolina National Bank Greenville, South Carolina (Term expires December 31, 1963)
G. Harold Myrick	Executive Vice President and Trust Officer First National Bank Lincolnton, North Carolina (Term expires December 31, 1965)
Joe H. Robinson	Senior Vice President, Wachovia Bank and Trust Company Charlotte, North Carolina (Term expires December 31, 1964)
Clarence P. Street	President, McDevitt and Street Company Charlotte, North Carolina (Term expires December 31, 1964)





The Afghanistan Bank • Banque de l'Etat Albanais • Banque de l'Algerie • Banco Central de la Republica Argentina • Reserve Bank of Australia • Oesterreichische  
 Banque Nationale de Belgique • Banco Central de Bolivia • Banco do Brasil • Banque Nationale de Bulgarie • Union Bank of Burma • Banque Nationale du Cambodge •  
 The Peoples Bank of China • Banco Nationale de Cuba • Státní Banka Československá • Danmarks Nationalbank • Banco Central de la Republica Dominicana • Ban  
 bank (West) • Deutsche Notenbank (East) • Bank of Ghana • Banque de Grece • Banco de Guatemala • Banque Nationale de la Republique d'Haiti • Banco Ce  
 Central Bank of Iraq • Central Bank of Ireland • Bank of Israel • Banca d'Italia • Bank of Jamaica • Bank of Japan • Bank of Korea • Banque Nationale du Lac  
 Zealand • Banco Nacional de Nicaragua • Central Bank of Nigeria • Norges Bank • State Bank of Pakistan • Banco Nacional de Panama • Banco Central del Para  
 Banque d'Etat de la Republique Populaire Roumaine • Bank of the Ryukyus • Banco Central de Reserva de El Salvador • Banca Nazionale Somala • South African Rese  
 Centrale de Tunisie • Banque Centrale de la Republique de Turquie • Banco de la Republica Oriental del Uruguay • The Federal Reserve System • State Bank