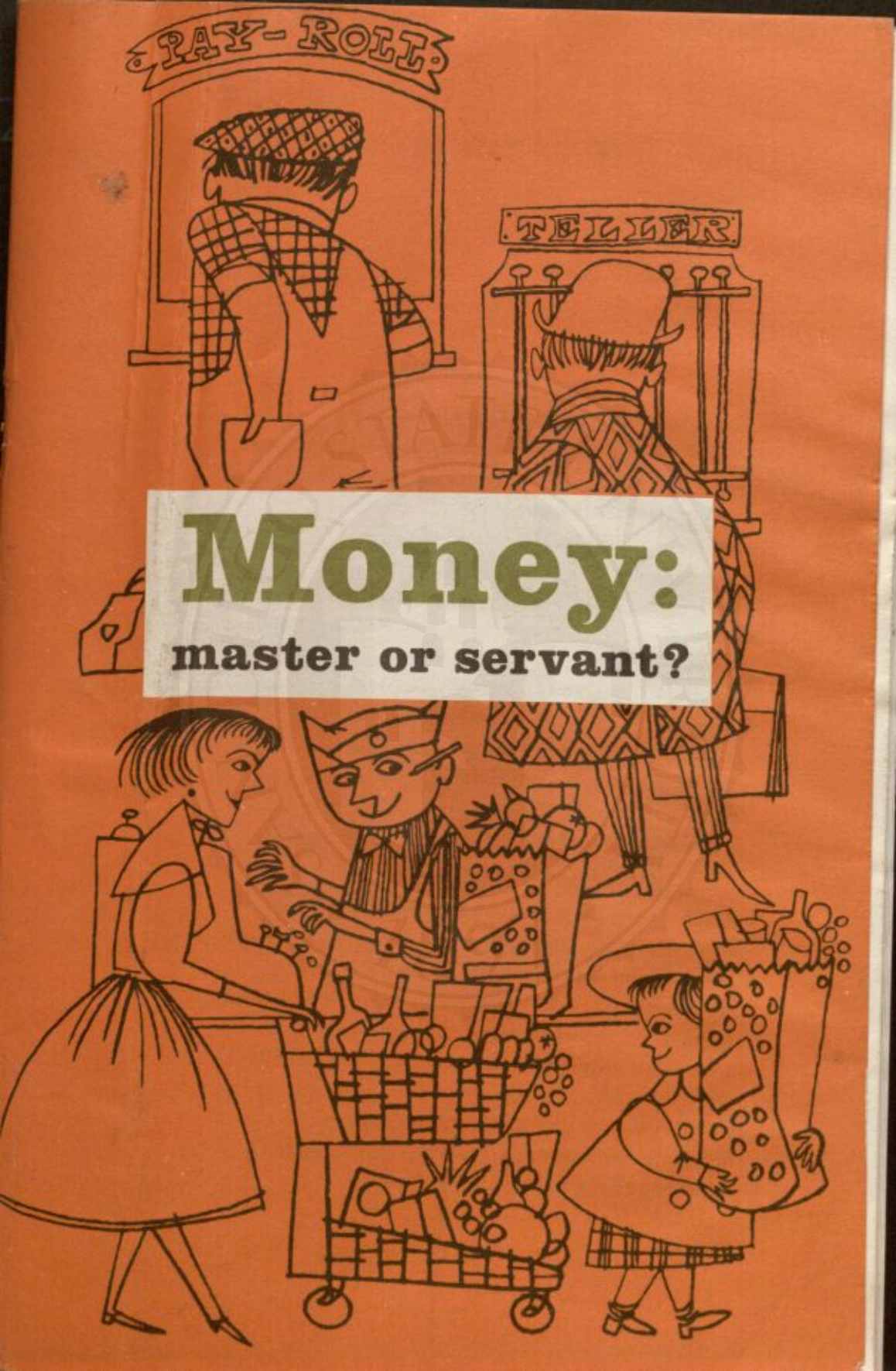

Money:
master or servant?

foreword

This explanation of the role of money and banking in our economy was produced at the request of the Joint Council on Economic Education, which has made it a part of the Teacher's Guide To Money and Banking. *The request was directed to the Federal Reserve System's Committee on Education and Publications, which designated one of its members, Thomas O. Waage of the Federal Reserve Bank of New York, to draft the explanation. The other members of the Committee read the draft and subsequent revisions, making many suggestions for improvement, as did members of the staff of the Joint Council and participants in an economic workshop at Riverdale, New York. The booklet was then published by the Federal Reserve Bank of New York as a public service.*

Another note: Since money enters into virtually all economic transactions in our society, it can be found at work in all areas of the economy. It has, therefore, been necessary to set arbitrary limits to how far this explanation should go, or the whole of the economy would have been under examination. Thus, fiscal policy and debt management have been given only the briefest consideration, despite their intimate relation to the role of money and monetary policy. In short, this cobbler has sought to stick to his last.

Money: master or servant?

contents

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Money: master or servant?

A long time ago someone pointed out that one of early man's most notable discoveries was the use of fire, which became a valuable servant in preparing food, maintaining warmth, making tools, and so on. The later history of industrial progress is largely one of developing more and more ways of using fire, in the kitchen stove, in the steam engine, and in the automobile, by burning wood or coal or petroleum. In all these ages man has sought to keep fire under control, for if he does not it becomes a demon that can hurt as much as it helps.

For most of these ages man has used money of one kind or another, always trying to find ways to make it help him more and to make sure that he can keep it under control, so that it does not do as much harm as it does good. It is easy to see when a fire gets out of control and is doing more than we want it to; it is not so easy to see when money is getting out of control and beginning to do more than we want it to. Fire does its work best when it is confined in a relatively fixed space; money, if it is to do its work well, must enter into every nook and cranny of our economy as it changes hands again and again. All of us are involved in making money do its work, whether well or ill; all of us therefore ought to know as much about it as possible, so that it works for us, and not against us.

To start with, we might ask: What is money, and why is it? The second half of the question might be answered by saying it is a convenience, an indispensable convenience in a highly organized economy like ours. Robinson Crusoe had no need for money when he was all alone on a deserted island; he provided his own food, clothing and shelter. Even a small colony on such an island might get along without money: one family that raised sheep could trade meat and wool, or even homespun cloth, for wheat or bread produced by another. This kind of trading we call barter: exchanging some items of food, clothing or shelter, or tools, for other items. But when some of us drive buses, or grow only soybeans, or install telephones, it becomes impossible to arrange all the necessary barter deals. Actually, that's putting the cart before the horse: if we hadn't developed money, we couldn't specialize in jobs as we do – and what is more important, we wouldn't have as high a standard of living as we do, since

stone slab African bronze ring wampum Alaskan bronze fishhooks

All these forms were once acceptable "money"

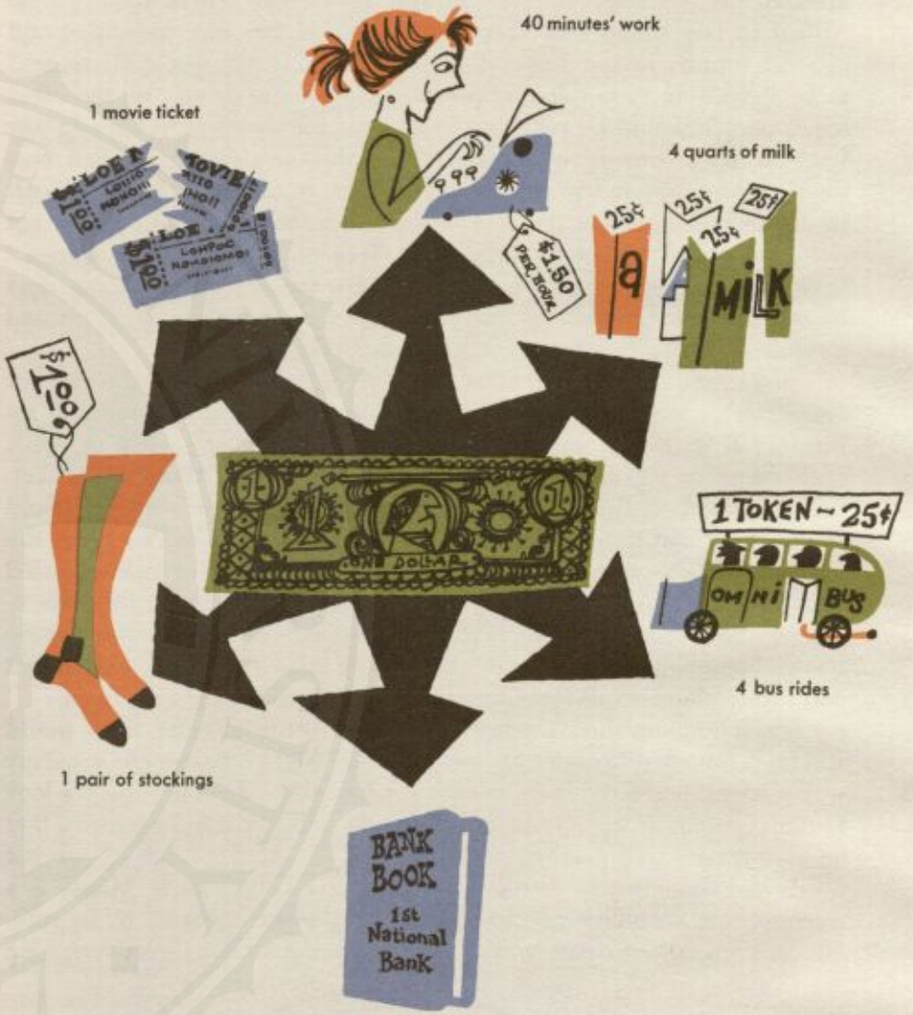
it is job specialization, plus a growing use of machinery and power in each job, that enables us to produce more and more. As a people, we cannot have more unless we produce more.

Money, therefore, was developed because it was more convenient for everybody to exchange his labor or product for money, rather than trying to find the somebody else who had what was wanted and also was willing to trade for what was offered. This is what economists mean when they say money is a medium of exchange. To do this job, money must be acceptable to all of us; we must be willing to take it as payment when others owe us for our work, or the products of our work; and we must be confident that others will accept it from us when we need what they have. Money does this job better when it is available in identical units, like dollars and cents, each one just like any other so far as its "money" quality is concerned. It then gains the further usefulness of serving as a way to express prices for all things and services; that is, money easily makes an hour of your work "convertible" into a certain amount of milk, or shoes, or rent. There are other advantages, too: since the money is in the form of identical units convertible into anything available in the market, you can arrange for payments or receipts in the future, or you can save some of the money you get today and spend it tomorrow or next year.

Looking at money in another way, we could say that it is a claim on goods and services. What's more, it is a claim that we can exercise immediately, by exchanging it with someone who has what we want, or we can put off exercising it until some future day, either the well known rainy day or the day when we choose to retire. If we defer the exercise of our claims, we turn them over to someone else who will exercise them and we expect to get paid for doing this. What we get paid may be called rent, or interest, or dividends. We may turn them over to the Government (by purchasing a Savings bond), or to an insurance company (by taking out a policy), or to a bank (which will turn it over to somebody else, paying us part of the interest and keeping part for itself to cover its cost of operation and its risk of loss).

Money's jobs

Money that is doing its job well is money that is acceptable to everyone for all these purposes that we have mentioned: as a medium of exchange (or claim), as a measure of values, as a "store" of values (for savings). If money were clearly declining in purchasing power (that is, if prices were going up), people would be reluctant to save money because the dollars they would be putting aside to spend later would not buy as much in the future as they did when they were saved. For the same reason, people would be reluctant to lend, for they would get paid back in dollars that would not buy as much as those they had lent originally. These



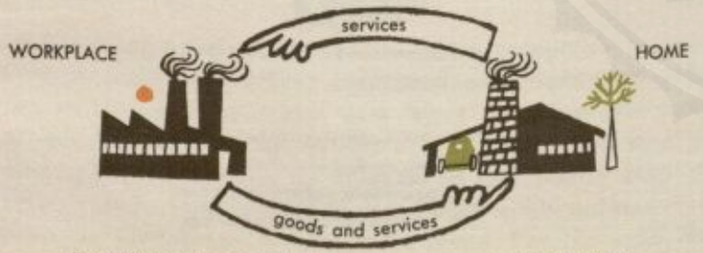
To do a good job money must be widely acceptable

1. as a medium of exchange
2. as a measure of values (in prices)
3. as a store of values (for savings)

results can be seen most clearly when a runaway inflation gets under way, as in Germany following World War I. Then people hurried to get rid of money each day by "converting" it into whatever goods were available. In this country, after the Korean War broke out in 1950, people rushed to buy things that they thought would be more expensive and in short supply; saving dropped almost to zero. If money clearly seemed to be increasing in purchasing power (prices going down), on the other hand, people would be reluctant to borrow, for they would have to pay back in more "expensive" dollars if they did, and those who had borrowed in the past and were now paying back would find it more difficult to do so. These are not the only difficulties caused by money that is not doing its work well (or so badly, as in Germany in 1923, that it causes a breakdown of the economy). But let us now try to see how money does its work in the production, distribution and consumption of goods and services. In short, how money works in our economy.

Since we shall be devoting most of our attention to the role of money as an economic servant, we should be especially careful to remember that money, by itself, cannot feed, clothe or shelter us. Only such things as wheat and wool and wood can satisfy these needs. Yet, because all of us use money, and because our kind of economy could not exist without it, many people sometimes forget that money is not the goal of our economic efforts, that it is not the reason we are organized as an economy: the purpose is to provide us with as much of the necessities of life – food, clothing, and shelter – and the luxuries – television sets and baseball gloves – as we can sensibly use. Since money is a present and future claim on all these things, it's easy to confuse it with them.

Even if money did its economic work perfectly, however, there would still be countless difficulties to face before we could consider our economy was working perfectly. We shall see some of these difficulties as we look at our economy in operation, and it will be well to remind ourselves that no matter how well money does its work it cannot, for example, prevent floods and droughts, or earthquakes, bugs and killing frosts. Money is a convenience, an indispensable one in our kind of economy to be sure, but an economy can exist without it if bartering, or the direct swapping



Many of us have a dual role in our economy — we perform one part as producers and distributors of a continuing flow of goods and services, and we also act as the consumers to whom the flow is directed.

of goods, satisfies all needs. By the same token, however, a barter economy falls far short of the productivity, and the high standard of living, of a money economy. When modern countries arrange barter agreements it is because they have not been able to make their money do its work properly, and their economies are not as successful in attaining better living standards as they might be.

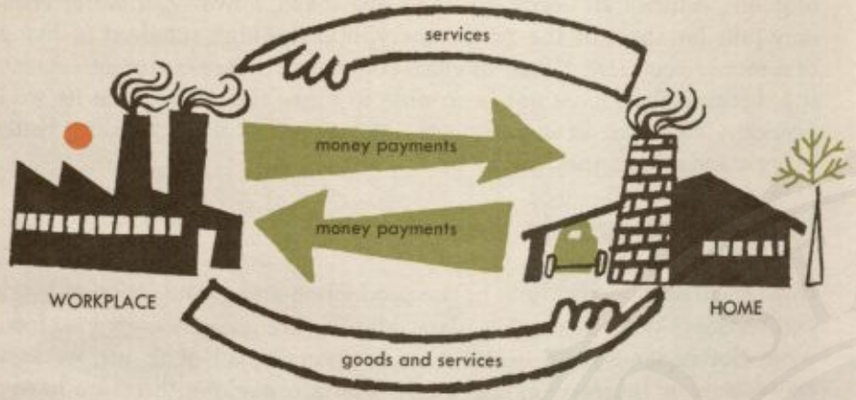
Money at work

How, then, does money help in the production and consumption of goods and services? Well, in the first place, all of us are consumers—we eat food, wear clothes, and sleep under a roof. Secondly, all of us are workers, ex-workers, or future workers. Those who are working therefore have a dual role in the economy; they are both consumers and producers. This distinction is not always a hard and fast one. For example, a schoolboy who is not normally considered a worker may mow a lawn and get paid for it. Even if he didn't get some spending money, he would be producing a valuable economic service, although we would not be concerned with it here since we're studying the role of money in our economy. So for the sake of simplicity in analyzing our economy we can put in the "working" category all those who are paid wages and salaries, or who draw profits from their businesses or professions, or who get paid for investments they have made. Then we might see our economy as something like this:

There is a stream of money payments as we get paid for our work and use the pay to buy what we want.

There is a constant flow of our abilities and skills to the places of production and distribution and a resulting flow back to us of the things we want. The farmer pays his hand for working in the fields, the factory owner pays the mechanic, the railroad pays the brakeman, and so on. And all of us, getting paid for our work, pay the power company for the electricity, the shopkeeper for bacon, the doctor for treating us, and the city for police protection. There are, therefore, two continuing flows through our economy in opposite directions. One is the stream of goods and services that result from the efforts of people to produce and distribute what people want, while the other is the stream of money payments as people get paid for their efforts and then pay others for their work. The factory mechanic is paid for his work, pays the grocer for food, and the grocer pays the factory to get more breakfast cereal to sell to the mechanic and his neighbor.

If these two flows continued at high and stable levels for a period of time, both expanding as the working population or the output of goods and services grew, we would say that our economy was operating satis-



If the money flow increases, and the goods flow does not, we have inflation.
If the money flow decreases, and the goods flow does not, we have deflation.

factorily. They would be, in a sense, in balance with each other; there would be no great change in the prices of things we buy, there would be – aside from a desirable healthy growth – no great change in the totals of employment, or income, or production and sales. If the flow of money payments increased in a period when we could not increase the flow of goods and services, we would see the symptoms of inflation, of "too much" money chasing "too few" goods. On the other hand, if the flow of money payments did not keep pace with the production and distribution of goods and services, we would see the symptoms of deflation, perhaps a business slump with falling prices, rising unemployment, smaller national income, and a lower volume of sales and production. It is important, therefore, to keep a balance between the two flows so that there is enough money to enable us to turn out more goods and services and so that we do not have to worry that there will not be enough money to take them off the market and into the consumers' hands.

Problems of balance

There are many problems involved in keeping the two streams in balance, however. The flow of goods and services is always changing, both in size and in composition. Almost all the cotton produced is harvested at about the same time of year, but the cloth is sold over the whole year. Sales of bathing suits are concentrated in a few months, but their manufacture is spread over most of the year. Besides these seasonal shifts, which obviously affect both the flow of goods and services and the money payments for them, there are also long-term changes, such as from buggies to autos, and unpredictable changes, such as those caused by droughts and floods, or strikes and international troubles. Wars and

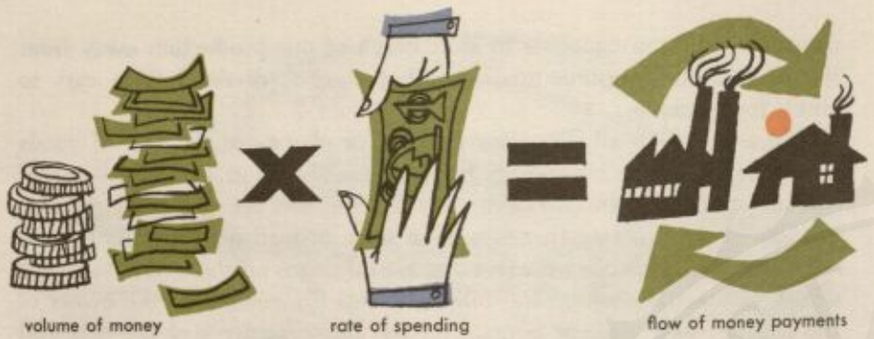
threats of war can cause us to shift much of our production away from the normal consumption goals, so that steel is diverted from cars to tanks, for example.

In addition to all these possibilities for change in our flow of goods and services, we as consumers have a free choice in spending some of our incomes. We can choose to buy a television set and not go to the movies, or we can buy frozen orange juice instead of fresh oranges. As we make these choices we exert a great influence on the decisions of the owner of the store where the television sets are sold or on the owner of the theater, and also, of course, on the manufacturers of the sets and on the Hollywood film companies. Besides this freedom of choice, our economy also rewards those who can invent new and better ways of making the things we want, as well as new and better things that we may want if they're made available, such as color television, or no-iron fabrics, or electric toothbrushes, or non-stick pots and pans.

All of these things, therefore – natural and man-made troubles, free choice of consumers, and technological changes – are constantly causing changes in the flow of goods and services, and in methods of production and distribution. Money that is to do a good job, economically speaking, must be able to adjust to all these changes, must be able to help the economy operate satisfactorily while the changes are taking place, or even help the changes to be made.

The importance of the job money has to do in our economy, and the desirability of money that is flexible enough to change with the changing needs of production, distribution and consumption, were recognized by Congress in 1913 when it passed the Federal Reserve Act. One of the major reasons for the law, Congress said, was "to furnish an elastic currency," one that would expand as our economy and population grew, and would also expand and contract temporarily to take care of such seasonal economic needs as harvesting of crops and Christmas shopping. Before 1913, our money supply was relatively inflexible and had helped to cause several financial panics and business slumps.

The volume of the flow of money payments (the size of the money stream in our economy) depends on two things: first, the supply of money (that is, the number of dollars) and, second, the rate at which it is used (that is, the number of times it is spent over a period of days or months). If the money supply is a million dollars, and the average dollar is spent twenty times in a year for wages, and to buy foods, and to pay taxes, and to build schools, and so on, then the flow of money payments in that year will total twenty million dollars. This is only another way, of course, to say that all the goods and services paid for that year were "worth" twenty million dollars. But if the money supply were doubled the next year, and spent at the same rate, while the goods and services did not change, then forty million dollars would be spent . . . in a price



volume of money rate of spending flow of money payments

inflation that would double the cost of what we buy. (And this kind of experience, by the way, would teach us that mere money changes will not necessarily solve economic problems. It is only when changes in money encourage or enable a growth in both production and consumption that money can be an effective servant of the economy.)

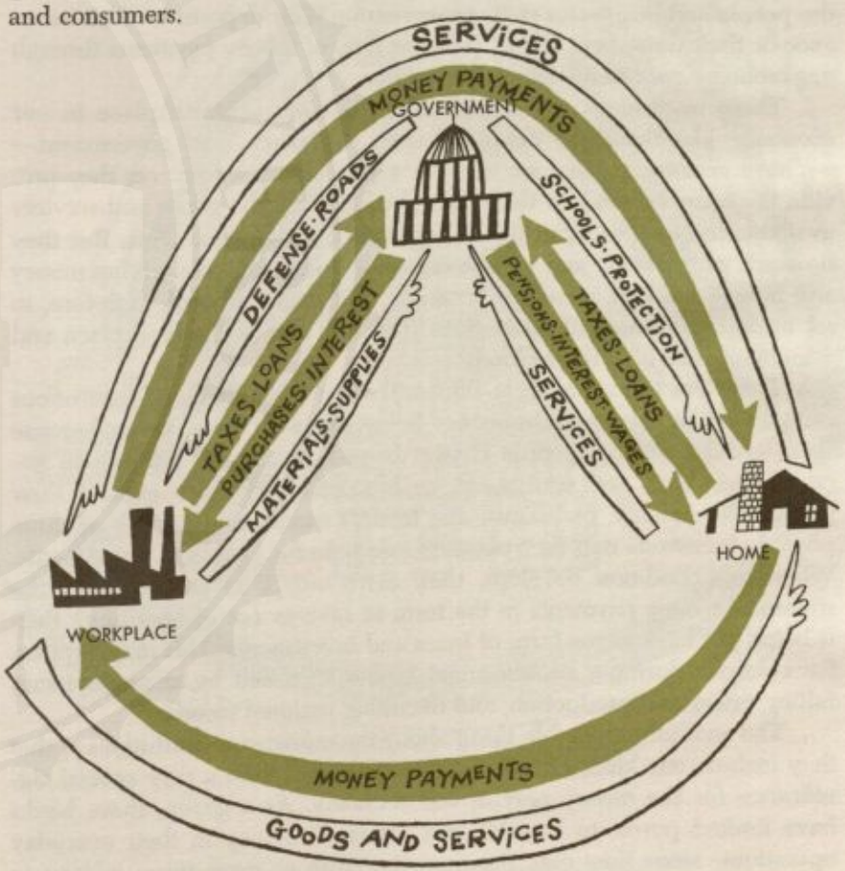
If money is to do its job well, if the flow of money payments through our economy is to be maintained in approximate balance with the flow of goods and services, we should try to achieve at least some control over either the money supply or the rate at which it is used. At the same time, of course, we do not wish to give up our free choice as consumers or the rewards to inventors that bring us new and better things to buy.

The polling place

To this picture of our economy, with its two opposing flows of money payments and of goods and services between the home and the workplace, we should now add a third place in our cycle – government. The Federal, State, and local governments play an important part in our economy, accounting for about a fifth of the nation's total economic activity in recent years. In the last analysis, the voters in our country control how much these governments will spend and therefore how much they will have to tax us. They build schools and sewer systems, buy airplanes and ships, repair roads and fight fires; to do these things, we as voters authorize them to divert in taxes some of the money payments we would receive. To put it another way, we tell our governments to spend some of our money for us on community projects like traffic lights or national projects like defense. The tax money taken out of the stream of money payments, we cannot of course have for spending ourselves. (Governments also have income from such things as selling stamps or electric power, as well as from taxes.)

But as the governments spend the money they get, the money goes into the hands of mailmen and soldiers, or manufacturers and farmers.

If the amount of money received by government is balanced by the amount of money spent then the flow of money payments continues in our economic cycle in the same volume it would if there were no government. Of course, the routes followed by the flow of money payments can be changed by altering the kinds and amounts of taxes that are levied, and by changes in what the tax money is spent for. Probably more important, however, is the fact that governments sometimes spend more than they receive; when they do, they borrow and may increase the stream of money payments in the economy. Sometimes they spend less than they receive; then they may reduce the total flow of money payments in the economy. These imbalances are not either good or bad in themselves; if governments spend less than they receive at a time when producers and consumers are borrowing in order to spend more than they receive, the governments will tend to offset the inflationary influence of the producers and consumers.



The flow of government income and expenses affects the flow of money in our economy.

A fourth place?

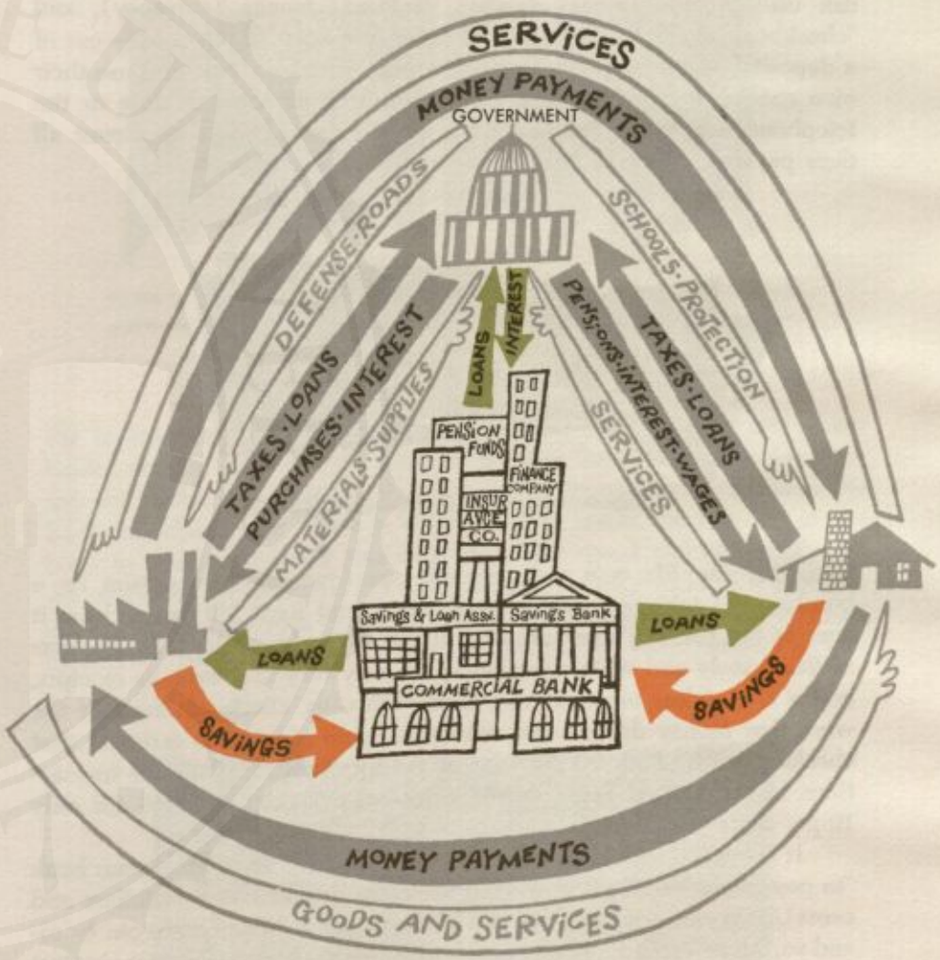
And now let us take a look at banks and other financial institutions that work with money, rather than directly with wheat or wool or wood. These organizations – banks, insurance companies, pension funds, and similar institutions – receive dollars out of the stream of money payments, dollars that are not "spent" on goods and services, but are saved in bank deposits or insurance policies. To the extent that this money is diverted to them from the flow of payments, there is less money available to help consume what is being produced and distributed. But they also put money back into the stream, by making loans and investments. They lend money to farmers and homeowners, to automobile buyers and corporations, to electric companies and to governments. If the amount of money they lend is equalled by the amount of money they receive from the people and businesses that are increasing their deposits or their insurance or their retirement funds, then the flow of money payments through our economy goes on unchanged in volume.

These institutions are not, strictly speaking, a fourth place in our economy, like the three others – home, workplace, and government – we have examined. They are, in fact, a part of the workplace; they provide the financial services that are a portion of all the goods and services available to business, agriculture, consumers, and governments. But they do work with money, and we are especially interested in studying money and how it can best serve our economy. We might do well, therefore, to set aside these financial institutions from the rest of the workplace and examine them a little more closely.

There are times (happily seldom) when these financial institutions cannot lend or invest all the money being left with them, either because there are not enough people buying houses, or farmers wishing to improve their land and equipment, or businesses trying to expand their productive capacity, or because the lenders cannot find enough of these possible borrowers that they consider safe risks for loans and investments. When this condition develops, then more money is going out of the stream of money payments in the form of savings (or of hoarding) than is being put back in the form of loans and investments. This may happen, for example, during a deflation and be accompanied by unemployment, falling prices and production, and declining national income.

The second remarkable thing about these financial institutions is that they include one kind, 13,800 commercial banks, with a very special significance for the money part of our economy. As a group, these banks have limited power to "create" and "destroy" money in their everyday operations; since they can, they are therefore at some times adding to the volume of the money stream, and at other times reducing it. Although this idea that anyone can "create" and "destroy" money seems strange at

first glance to most people, we shall soon see how this can be done and why it is desirable that it should be. But let us remember that, among these financial institutions, only the commercial banks – those that provide their customers, or depositors, with checking accounts – can "create" or "destroy" money.



The ability and readiness of financial institutions to extend credit affects the flow of money in our economy.

What money is

We began to examine the problem of how money can work more effectively for us in our economy by asking what money is, and by deciding that it is anything that is widely and readily acceptable in payment, whether the payments are due because we have bought a pair of shoes, or hired someone to work for us, or borrowed to buy a car. If we now think of the way in which people make these payments, we see immediately that they can use "jingling" money (coins), "folding" money (currency), and "checkbook" money (a check is an order to a bank to pay money out of a deposit). Many people get paid for their work by check, and use their own checks to pay for a charge account at a department store or the telephone bills, while business firms of course use checks for almost all their payments. Checks are "widely and readily acceptable."

Checkbook money is our most important kind of money.

They can also, like coin and currency, pass from person to person, for a butcher who takes a check in payment of your meat bill can endorse it over to the packing company that produces the bacon he sells. Because of their ready and wide acceptance, the way they can serve as receipts, and a risk of loss much smaller than with cash, checks do most of the work that money does in our economy. Some economists estimate that checks pay for about 90 per cent of the total dollar volume of transactions in the United States, while coin and currency are used for only 10 per cent.

It is important to note that, while your check is an order to your bank "to pay to the order of" so-and-so a certain sum of money (dollars and cents), it is not necessary for the bank to pay currency and coin to so-and-so. More often than not, the bank simply charges the sum against your bank account and credits it to another account. When you pay your monthly bill, for example, the telephone company deposits your check in its bank along with the others it gets. The bank adds the amount to the telephone company's account, and your bank deducts it from yours. The telephone company then draws checks to pay for the wire it buys

or the people who work for it. The wire company and the telephone employees may deposit their checks in their banks and the whole process of drawing checks continues. Even when a check drawn on one bank is deposited in another, there is rarely any payment of cash from one bank to the other. The banks usually settle between themselves through their own accounts at a Federal Reserve Bank. These "reserve" accounts of

At the same time, your bank is charging your account for the amount of the check, and the telephone company's bank is crediting the amount to the company's account.

the commercial banks are, in a real sense, the checking accounts of the banks, and in that sense the Federal Reserve Banks are banks for commercial banks. It is possible, therefore, for a Reserve Bank to charge the bank on which your check is drawn and to credit the account of the bank in which the check was deposited. The speed and efficiency with which checks are collected has increased enormously within the last generation, so that a check drawn on a bank in San Francisco but deposited in another bank in New York now is paid in two days, compared with

It is possible for a Federal Reserve Bank to charge the account of your bank for your check, and to credit the bank in which your check was deposited.

the two weeks it might have taken some years ago. There are now more than 65 million checking accounts in the United States on which about 16 billion checks worth almost six trillion dollars ($6,000,000,000,000) are written each year.

Since checks are so important in our economy, we must certainly include checking accounts in our definition of money. Is there anything else that should be included? Savings accounts? Let's leave them out, because you cannot pay someone by giving him a withdrawal slip on your thrift account at your bank. You can go to the bank yourself, with your passbook, and withdraw some money, asking the bank to give it to you in the form of cash or in a check. But, as you can see, what you have done then is to "convert" your savings deposit into money of the kind we have been talking about, just as you originally "converted" your money into a savings deposit. The same distinction should be made with savings bonds and other securities, shares in a savings and loan association, or the "cash surrender value" of an insurance policy. Our money supply, then, consists of coin, currency, and the checking account balances of people, business firms, and state, local and foreign governments. (We should also exclude the commercial bank deposits of the Federal Government, and those that banks have in other banks; in any case, they are not normally used to make money payments. The U. S. Treasury, for example, uses its account at the Federal Reserve Banks when it makes money payments, and not those at commercial banks, which are called Treasury Tax and Loan Accounts.)

How much of our money supply is coin and currency and how much is checking account balances? In recent years, about $35 billion has been pocket money and about $130 billion has been checkbook money; forty years ago, pocket money amounted to less than $4 billion and checkbook money to about $20 billion. Of the coin and currency in the hands of the public today, about $31 billion consists of Federal Reserve notes, while only about $3 billion is in coin, and about $1 billion in small-denomination silver certificates and United States notes. Coins, silver certificates and United States notes are issued by the Treasury. The amount of United States notes that the Treasury can issue is limited by law and has not changed since 1878; the amount of silver certificates is limited by the silver the Treasury holds. Coins are produced by the Mint (a bureau of the Treasury) in response to the needs of the public for change.

Federal Reserve notes, as their name indicates, are issued by the Federal Reserve Banks. They are backed 100 per cent by Reserve Bank assets, chiefly U.S. Government securities and gold, or speaking more strictly, gold certificates (or gold certificate credits). The gold portion of the backing for Federal Reserve notes must, by law, amount to at least 25 per cent.

Creating money

We decided before that we would have to achieve some control over either the money supply or the rate at which it is spent if we were to influence the flow of money payments in our economy in order to help it to adjust to the changes in the flow of goods and services. The money supply consists of pocket money and of checkbook money; pocket money increases when people go to their banks and "convert" some of their deposits (checkbook money or savings accounts) into coins and currency. If there were some control over, or influence on, the amount of checkbook money in our economy, there would also be an influence exerted on the amount of coin and currency.

Let's find out something about this checkbook money, therefore. First of all, where does it come from, how does it get into banks as what bankers call demand deposits? Some of it obviously is the result of "conversion" from coin and currency. Just as we can push a ten-dollar bill across a bank teller's window and convert it into a deposit in our savings account, just so we can push the bill across the window and convert it into a demand deposit, or checking account balance. But that has not been the source of much of these demand deposits; in fact, the reverse has more often been true, that is, that demand deposits have been "converted" into currency. That process is largely the story of how the pocket money part of our money supply grew from $4 billion to $35 billion in the last 40 years.

Where did these demand deposits, this checkbook money, come from, then? You remember that we said before that commercial banks can create and destroy money. The answer to our question is that commercial banks created the demand deposits, by making loans and investments. If we study one of these loans being made, we can see how this deposit creation takes place.

In observing the effects on our economy of new inventions and new industries, we agreed that these developments could exert great influence on both sellers and producers of new products and also of old products that they replaced or competed with. Let us now see how the introduction of frozen orange juice might affect a storekeeper. He might, let us say, decide that he ought to carry a stock of frozen juice, and therefore he would have to get a freezer showcase. He might then go to his bank and ask for a loan of $7,000 in order to buy the juice and the showcase to hold and display it. The bank, in making the loan, would not give him 700 ten-dollar bills but would credit his checking account with the amount, and the storekeeper could then draw checks to pay for the showcase and the juice. This "credit" to the checking account is a "deposit" in the bank, just as much a deposit as one you or I might make by pushing a ten-dollar bill across the teller's window and converting that money

into a deposit. The bank holds itself liable to pay out our ten-dollar deposit, if we draw a check against it, just exactly as it holds itself liable to pay out the storekeeper's "deposit" if he should draw a check against it. And from looking at our check and the storeowner's check, we cannot tell the origin of the deposit. Both checks can be used in our economy to buy goods and services; they become a part of the stream of money payments.

FIRST NATIONAL BANK

ASSETS		LIABILITIES	
Cash	—	Accounts Payable	—
Deposits in Other Banks	—	Capital	—
Securities	—	Surplus	—
Loans	—	Deposits	—
Storekeeper's Loan $7000		Storekeeper's Deposit $7,000	

Normally, in making a loan, a bank adds the borrower's promise to pay to its loan assets and it adds the amount of the loan to its deposit liabilities; its balance sheet now balances at the higher level.

Yet what we did with a ten-dollar bill was to convert money from one form (currency) to another (checking deposit), while the storekeeper obtained credit to his account for money that did not exist before, that was not money until the bank entered a "deposit" in his checking account. Perhaps we can understand this difference better if we stop to think of what credit is. When the XYZ department store says that we may have a charge account, or when the ABC gasoline station says we may pay our bill for gas and oil at the end of the month, both are giving us credit. We cannot use this credit to pay any other debts we may have, or to buy anything except at the XYZ department store or the ABC gas station. Our credit standing, or creditworthiness, at the bank is like our creditworthiness at the XYZ department store or the ABC gasoline station. It is a result of the fact that the bank thinks we are an excellent probability to repay the amount borrowed, plus interest, just as the willingness of the gas station owner to let us have gas and oil without immediate payment is a result of the belief that we will pay him at the end of the month. What the bank does that is completely different from the action of the department store or the gas station, however, is to allow us to use the bank's credit standing as our own — up to the amount of the loan. The bank, in effect, gives us its creditworthiness in exchange for our promise to pay.

The bank gives us its credit (promise to pay anybody) in exchange for our credit (promise to pay the bank). The bank's credit is so widely and readily acceptable that it is a form of money in our economy.

When a bank gives us credit, however, we can use it at a great many places for a great many purposes, because the bank's credit is widely and readily acceptable. Indeed, as we have seen, when it is used (as it usually is) in the form of checks, it is money. Commercial banks, in short, normally extend credit to borrowers in the form of "deposits" in the borrowers' checking accounts, and these deposits become additions to the money supply in our economy. Bank credit is thus a special kind of credit, unlike any other kind.

But bank credit is not a one-way street. When it is granted, it adds to our money supply, to be sure. However, when the borrower uses it, he does so because he — and the bank — think he can make profitable use of it and repay it within a definite period. Our storekeeper, for example, will get the money to repay the loan when he sells enough frozen orange juice. What happens then is that the storekeeper, as he sells food, deposits

When borrowers repay their loans at a bank, they use the money in their checking accounts to make payment. Thus banks destroy the money they created, when the economic need for it no longer exists.

FIRST NATIONAL BANK

ASSETS		LIABILITIES	
Cash	—	Accounts Payable	—
Deposits in Other Banks	—	Capital	—
Securities	—	Surplus	—
Loans	—	Deposits	—
Storekeeper's Loan $7000		Storekeeper's Deposit $7,000	

the dollars he gets in his checking account at the bank. When he has enough he pays off the loan. Just as the bank's deposits went up when it made the loan, now the bank's deposits and the bank's loans go down together. So, we can see that banks "destroy" or "extinguish" money as well as "create" it.

When commercial banks make loans, they are really converting into present money the future work of creditworthy people. The banks cannot, of course, do this without cost or risk. They incur expenses in analyzing a borrower's financial condition and the likelihood of his being able to repay the loan; they have to pay tellers, bookkeepers and others to keep records of payments and receipts for depositors; and they take the chance of not being repaid.

Now, there is nothing wrong about having commercial banks that can and do create money, or extinguish it. That is what they're supposed to do in our economy. Our banking laws, Federal and State, provide that they can; our economy demands that they should. It was bank credit, for example, that made it possible for the storekeeper to provide us with frozen orange juice. Considering all the adjustments our economy has to make to droughts, floods, war, peace, new inventions, shifting consumer tastes, and many other changes, as well as to our expanding needs and desires, we might almost say that commercial banks are the shock absorbers, or that without the "stretch" they provide, our economy could not function effectively or smoothly.

Dollars–deposit and reserve

Now, just to review briefly, we have found that we would like our money to be adjustable to the economic need for money, and to do that we must exert some influence on either the money supply or the rate at which it is used. We also found that checkbook money, some of which may be converted into coin and currency, can be expanded if banks expand their loans and security investments, and can be contracted if loans and investments are paid off. (The investments of commercial banks consist almost entirely of the obligations of Federal, State, and local governments, or, in other words, the securities the governments issue as evidence of their debt to those who lend them money. These securities, unlike the promissory notes of most other borrowers, are readily bought and sold in financial markets.) We might now ask this question: Can some influence be exerted on the expansion and contraction of checkbook money, on the rise and fall in banks' loans and investments?

Yes, it can be – largely because banks are required to have reserves equal to a certain fraction of their deposits. This fractional reserve requirement enables our banking system to expand the supply of money by making loans and investments. The legal reserve requirement is essential

if we are to influence the amount of expansion or contraction of the money supply. Banks that are members of the Federal Reserve System are required by law to have these reserves in the form of cash in their own vaults or on deposit with a Federal Reserve Bank; these member banks have about 85 per cent of all the checkbook money in our economy, so we might profitably study how this reserve requirement works with them. Taking all these member commercial banks together, we find (in 1966) that their required reserve percentages average over 14 per cent of their demand deposits, although for some it may be only 12 and for others as much as 16½ per cent, depending on their location. On the average, therefore, these banks must have $14 in cash reserves for every $100 in checkbook money of their depositors, or approximately one reserve dollar for each seven deposit dollars.

These reserve dollars are a special kind of money in our economy, as we shall see. But first of all, we might note that each of them can support seven deposit dollars that banks hold in checkbook money. To put it another way, a bank is not permitted to owe seven deposit dollars unless it owns one reserve dollar. It is for this reason that some people call reserve dollars "high-powered money."

Every seven dollars of checkbook money (a liability of the bank) must be backed up, or supported, by one reserve dollar (an asset of the bank).

Originally, more than a hundred years ago when cash reserves were first made a legal requirement, the purpose was to make sure that when banknotes were presented to the bank that issued them, the bank would be able to redeem them in legal tender. But today the chief purpose of the reserve requirement is to provide a means for the Federal Reserve to influence the money supply and the use of bank credit. This the Federal Reserve can do because it is by far the most important source of these high-powered reserve dollars, and can even offset the effect of reserve dollars "gained" or "lost" for other reasons. But more of the Federal Reserve later.

If we now go back to the bank and the storekeeper who wanted to sell frozen orange juice, we can see that the bank could not have made him a loan, and increased its deposits by $7,000, unless it had at least $1,000 of reserves to "back up" or support the additional $7,000 of new deposits. This is only the first consideration, however. If the storekeeper is going to buy his freezer showcase and frozen orange juice from firms that do not have their accounts with the same bank – and this is obviously what must happen most of the time – then the bank is going to need money to pay the storekeeper's checks when they are deposited in another bank. As we have seen, these checks are usually paid through a Federal Reserve Bank, where the reserve account of one bank is charged with the amount of the check and the reserve account of another bank is credited. This procedure means that the lending bank may have to pay

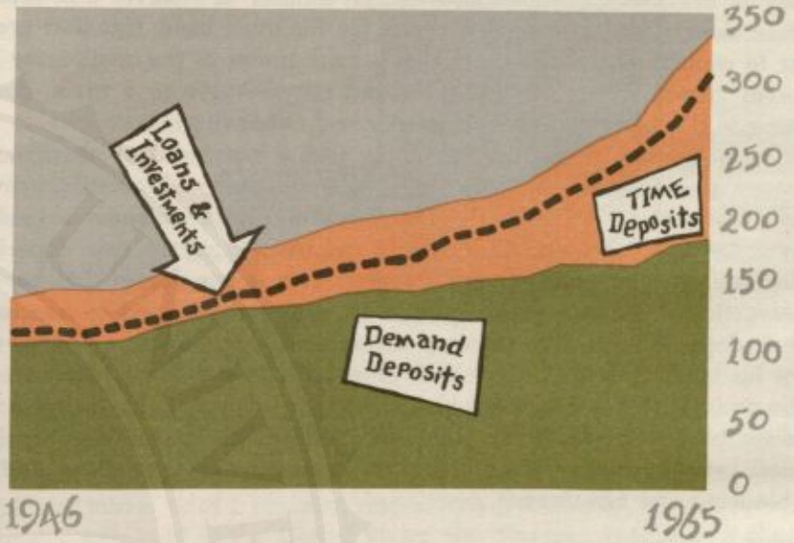
for all of the $7,000 out of its reserve account so that other banks can get the money for checks deposited with them by the showcase company and the orange juice firm. The second consideration for the bank when it makes a loan, therefore, is the probability that it will find most of the amount of the loan being deducted from its reserve account as the borrower draws checks and spends the money he borrowed, and that it should have in its reserve account, or be able to get, all or most of the amount of the loan.

But even if we assume that a bank cannot make a loan for $7,000 unless it has $7,000 for that purpose in its reserve account, there still is no change in the fact that the bank creates a new deposit of $7,000 when it makes the loan. Since, as we have seen, bank deposits are money in our economy, the bank is creating money when it credits the storekeeper's account. Furthermore, if, let us say, two banks each get a deposit of $3,500, one from the showcase company and one from the orange juice firm, then each gets credit for $3,500 in its reserve account. But their new deposits are for $3,500 each and so they need only $500 each in their reserve accounts to back up deposits one-for-seven with reserves. Each of the two banks, therefore, can make loans up to $3,000 and thus create new deposit money totaling $6,000 (providing always, of course, that there is a creditworthy demand for bank loans). When this money gets spent, and gets into other banks, they in turn will have "extra" or "excess" reserves and they can make loans and create new deposits.

Eventually, therefore, if the average required reserve is 14 per cent, $7,000 of reserve dollars can support $49,000 of deposits, or checkbook

As the borrowing storekeeper pays his bills, one of his checks is deposited in the Second National Bank and one in the Third National Bank. As a result, these two banks get new excess reserves of $3,000 each.

Demand deposits, the largest part of the money supply, rise as commercial bank loans and investments increase. In recent years commercial banks have succeeded in attracting a large volume of savings and other time funds.



money, in our banking system. If we look at the present supply of checkbook money in member banks, about $110 billion, and then at the amount of supporting reserves the banks of the country have, about $15.6 billion, we can see this seven-for-one relationship as it actually exists today in our economy. (Banks have another $6.5 billion of reserves against their Government and inter-bank deposits, and against their time, or thrift, deposits.) Also, as we look at the trend of loans and investments of all the commercial banks in the country, and at the trend of the money supply, during recent years, we can see that the two do go along pretty much together, as they should, since we have seen that bank credit is a form of money in our economy.

It is important to remember that a single individual commercial bank cannot expand its loans and deposits seven times the amount of new, or excess, reserves it may get, unless it can be sure that all of the checks drawn against the new checking account balances that it creates when it makes loans will return directly to it in the form of deposits from the people who get the checks. Obviously, no bank can be sure of "keeping" deposits in this way. At least some of the deposits will be spread around among other banks, which will thus get both new deposits and new reserves, and which will then be able to make new loans and deposits themselves. It is largely for this reason – that only the commercial banking system as a whole, rather than any one bank, can expand loans and deposits several times the amount of new reserves – that even bankers forget at times that they are collaborating with other banks in expanding

deposits. Indeed, since most banks, as we have seen, get new "excess" reserves in the form of deposits being transferred from other banks, it is easy to overlook the significance of the transfer of reserves that takes place along with the shift of deposits. On the other hand, this shift goes far to explain why bankers say that a bank grows as the community it serves grows. When business firms and people move to a town, they bring to the bank there both currency and check deposits.

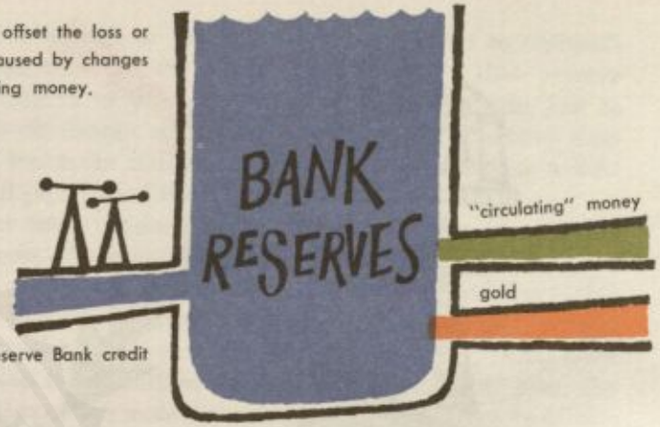
The portion of our money supply that is composed of checkbook money, therefore, is largely the result of the lending and investing activity of commercial banks. Furthermore, the ability of the commercial banks to make new loans and investments and thus to create new deposits depends on their ability to get reserves. This is one reason that banks energetically compete to get people to open accounts and to increase their deposits. Coin and currency deposited by a customer are reserves for his bank. A deposit of a check causes a shift of reserve dollars from the account of the bank on which the check was drawn to the account of the bank in which it was deposited. With either kind of deposit, the bank gains reserve dollars and the ability to expand its credit in profitable loans and investments.

Where do reserve dollars come from?

Now, as we look for the origin of these important "high-powered" reserve dollars we shall see how it is that the Federal Reserve can influence the willingness of banks to make new loans and investments. Except for short periods of time, and relatively small amounts, there are only three important sources of reserve dollars; these three factors not only can provide the banking system with reserves, they can also take reserves away.

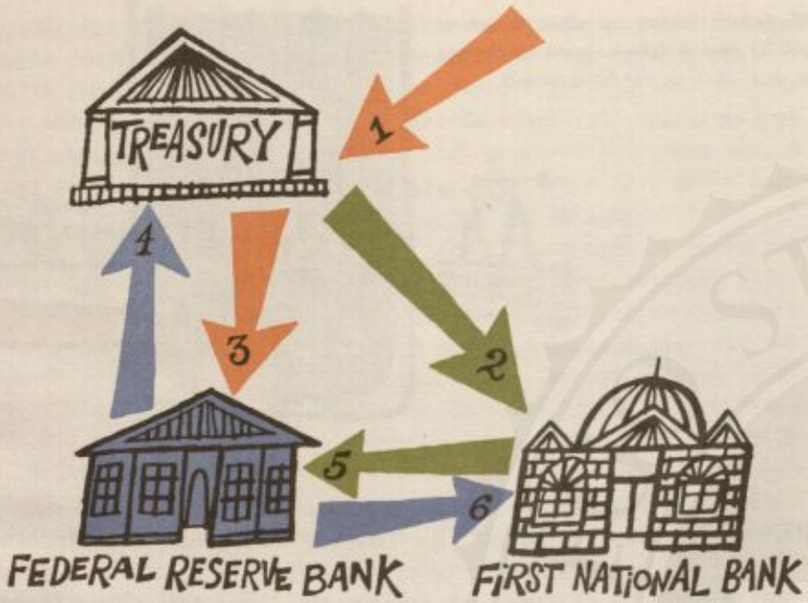
These three factors, able to increase or decrease the volume of reserves in our banking system, must be of great importance to an understanding of money in our economy, since the amount of checkbook money in existence at any time is directly dependent on the amount of bank reserves. If we think of bank's reserves as being in a large storage tank, which has three pipes connected to it, we may perhaps visualize how these factors work. All three pipes can carry more reserves into the tank; all three can also carry reserves out. These pipes might then be labelled "gold," "money in circulation," and "Federal Reserve Bank credit." In the first two there are no control valves that can be used to direct the flow into the tank or out of it; the flow and its direction will be determined by other causes, as we shall see. The Federal Reserve pipe, however, has several control valves that will start a flow into, or out of, the tank. This pipe can be tremendously significant, therefore. Even if the others are carrying reserves out of the tank, the third one can carry enough in to keep the volume unchanged, or even increase the volume.

The Federal Reserve can offset the loss or gain of reserve dollars caused by changes in gold stock or circulating money.



But let's look into the pipes and examine the flows more closely, starting with the "gold pipe." Our Treasury stands ready at all times to sell gold to foreign countries, or to buy it from them, at $35 an ounce (plus or minus ¼ of 1 per cent, respectively). Normally, when a foreign country sells gold to the United States, the Treasury pays with a check that the foreign country deposits in a commercial bank in this country. It has, of course, "exchanged" its gold for dollars because it prefers dollars. The foreign country wants dollars so that it can buy some of our cotton or wheat, or adding machines and farm tractors, or so that it can invest in securities that will earn more dollars. When it deposits the Treasury's check in a bank, the bank sends the check to its Federal Reserve Bank, where the Treasury's checks are usually paid since the Treasury keeps its checking account at the Federal Reserve Banks. But now when the bank receives payment for the Treasury check, it gets paid with a credit in its reserve account at the Reserve Bank. In short, therefore, both the reserves and the deposits of the bank have been increased in the same amount. In the meantime, the Treasury (by issuing gold certificates) has pledged, or assigned, the newly purchased gold to the Federal Reserve in return for a credit to its checking account. When the Federal Reserve Bank credits the account of the commercial bank presenting the Treasury check, and at the same time charges the Treasury's account for the amount of the check, the Treasury is left with the same amount of money in its account that it had before it purchased the gold.

When the Treasury issues gold certificates or credits, the Reserve Banks gain additional gold backing for their notes in circulation. But the important point to remember here is that the normal "automatic" result of a Treasury purchase of gold is an increase in the supply of reserve dollars for commercial banks, which, of course, enables them to expand loans and deposits several times as much.



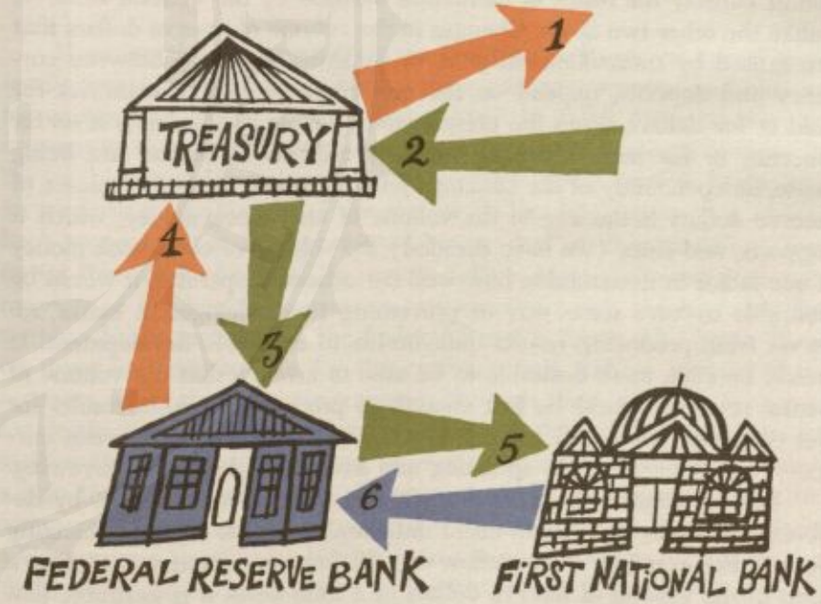
1. Treasury buys gold. 2. Pays seller with a check, which he deposits in bank. 3. Issues gold certificate to Federal Reserve. 4. Federal Reserve credits Treasury checking account. 5. Bank deposits check in its reserve account. 6. Federal Reserve credits bank's reserve account and charges the Treasury. Thus, when the Treasury buys gold bank reserves are increased.

The reverse of this transaction – a sale of gold by the Treasury to a foreign country – will take reserve dollars out of our banking system. The foreign country must pay for the gold with dollars, and it does so by drawing a check on a bank in the United States where it has accumulated the dollars. When the Treasury deposits this check in the Federal Reserve Bank for credit to its account, the Federal Reserve Bank collects the amount by deducting it from the reserve account of the bank on which the check is drawn. To put it briefly, then, an addition to our monetary gold stock will increase bank reserves and a decline in the gold stock will decrease the supply of reserve dollars.

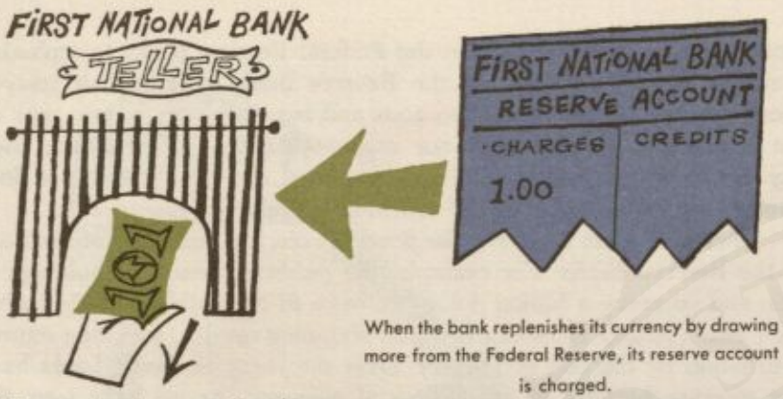
The second reserve-carrying pipe we labelled "money in circulation." This is the term used to indicate the total amount of coin and currency in the possession of people, businesses, and banks (except the Federal Reserve Banks). When people or business firms deposit pocket money in their banks, the amount of reserves in the tank must increase. We can say, therefore, that when money in circulation declines, there is a flow into the tank through our second pipe. On the other hand, when we go to our banks and draw checks against our accounts in order to get pocket

money, the banks must turn to the Federal Reserve Banks to replenish their supply. When they do, the Reserve Banks charge their reserve accounts for the amount of the coin and currency they obtain, just as the commercial banks charge our accounts for the pocket money they pay out to us. If money in circulation rises, therefore, there is a flow through our second pipe out of the reserve tank.

There are some fairly regular flows of coin and currency into and out of the Reserve Banks. For example, the public increases its holdings of coin and currency a billion dollars or more in November and December each year (largely to meet Christmas shopping needs), and then returns it to banks by the end of January. Over the years, however, banks have lost reserves because of an outflow of currency. As we have seen, the pocket money portion of our money supply has increased from $4 billion to $35 billion during the last 40 years, so that banks have had to pay for some $31 billion of coin and currency out of their reserve accounts in that period. Far from being a source of reserves to the banking system, the public's growing requirements for pocket money have been a heavy drain on the supply of reserve dollars.



1. Treasury sells gold. 2. Takes check from buyer of gold. 3. Deposits check in Federal Reserve Bank. 4. Redeems gold certificate. 5. Federal Reserve collects check from bank on which drawn, by 6. Deducting the amount from bank's reserve account. Thus, when the Treasury sells gold, bank reserves are decreased.



When people get currency from the bank, their accounts are charged.

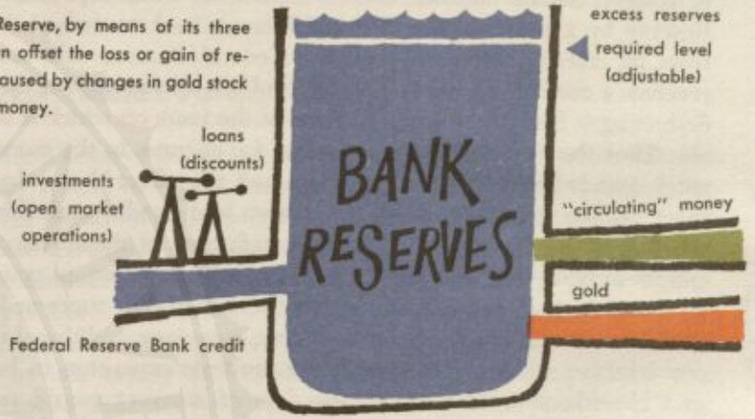
When the bank replenishes its currency by drawing more from the Federal Reserve, its reserve account is charged.

Federal Reserve Bank credit

We now come to the last, and the most significant, of the three pipes – Federal Reserve Bank credit. It is the most significant because the direction of the flow, into or out of the tank, and the amount of the flow, is almost entirely the result of deliberate decision by the Federal Reserve, unlike the other two flows. Changes in the volume of reserve dollars that are caused by transactions in gold, or by shifts of money between currency and deposits, depend on the preference of foreign countries for gold or for dollars, or on the preference of people and business firms for currency or for bank accounts. Literally millions of choices are being made, independently of the banking system. And yet, since the volume of reserve dollars is the key to the volume of checkbook money, which it supports, and since (we have decided) the volume of checkbook money is one factor in determining how well our economy operates, it would be desirable to have some way of preventing these changes in banks' reserves from producing results unfavorable to economic development. It would be even more desirable to be able to arrange that the volume of banks' reserves should be just enough to produce favorable results for the economy, while still leaving everybody a free choice between currency and bank deposits, spending and saving, lending and borrowing.

Federal Reserve Bank credit is a flow of reserves that can, by deliberate decision, be used to offset unfavorable results of these changing desires. For example, if an outflow of gold from this country is causing a drop in the volume of reserve dollars at a time when it is desirable that the volume of money should be expanding because of a growing economic need for it, the Federal Reserve can provide the banking system with reserves equal to, or larger than, the reserves lost by the gold outflow. If currency is returning from circulation and being deposited in banks, thus

providing them with reserve dollars, at a time when there is no useful economic purpose to be served by an expansion of bank credit (when manpower, plant, and equipment are already fully employed, for example), the Federal Reserve can offset the effect of the currency flow into the banks by absorbing reserve dollars.



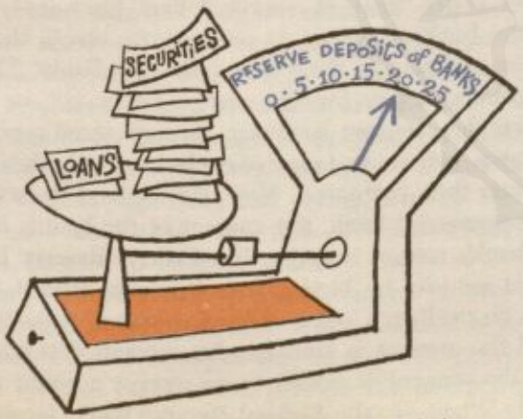
How can this be done? Well, we saw that an increased use of bank credit meant an increase in banks' loans and investments, and also an increase in the supply of checkbook money. In much the same way, an increase in the use of Federal Reserve Bank credit means an increase in the total loans and investments of the twelve Federal Reserve Banks, and an increase in the supply of the reserve dollars backing up that checkbook money. Just as the commercial banks "deal" in deposit dollars, just so the Reserve Banks "deal" in reserve dollars. Most of the required cash reserves of the banking system in our country are in the accounts the member banks maintain at the Federal Reserve Banks. The banks draw on these accounts to pay for the currency they get, or increase their accounts when they deposit currency; through these accounts they pay for checks drawn on them and receive credit for checks they have accepted as deposits from their customers. Now, if a Federal Reserve Bank makes a loan to a commercial bank, the amount of the loan is credited to the commercial bank's reserve account. If a Federal Reserve Bank invests in a Government security by buying it in the open market, it pays with a check drawn on itself; the seller of the investment deposits the check in his bank and the amount is added to his account. His bank collects the check when the amount is added to its reserve account at the Federal Reserve Bank. Whenever the Federal Reserve Banks increase their loans or their investments, therefore, the supply of reserve dollars in our bank-

When the Federal Reserve buys a Government security, it pays with a check, which is deposited in a commercial bank. The bank thus gets a credit to its reserve account.

ing system must increase. On the other hand, whenever a Federal Reserve loan is repaid or whenever the Federal Reserve sells securities, the supply of reserve dollars must decline. A borrowing bank repays the Federal Reserve by authorizing the Federal Reserve Bank to deduct the amount from its reserve account. When the Federal Reserve sells securities, it receives a check from the buyer, then collects the amount of the check by deducting it from the reserve account of the bank on which it is drawn.

Thus the Federal Reserve watches for changes in the monetary gold stock and in currency in circulation, and the effect these changes may have on the economic need for money and credit, and then decides whether or not it wishes to offset the influence of those changes on the supply of bank reserves. The Federal Reserve's decision, of course, would be based on its judgment of whether there should be more or less checkbook money and credit in our economy, since any additional reserves in our banking system make possible a multiple expansion in bank credit and checkbook money, while any loss of reserves would remove the "foundation" for several times as much deposit money. In the final analysis, therefore, the amount of reserve dollars in our banking system is the result of decisions by the Federal Reserve.

Later we shall consider what policy guides the Federal Reserve uses, what aims it seeks to achieve, and who the people are that make these policy decisions. But let us not forget the principle that whenever the Federal Reserve Banks increase their loans and investments they automatically increase the supply of reserve dollars and "inject" them into the commercial banking system.



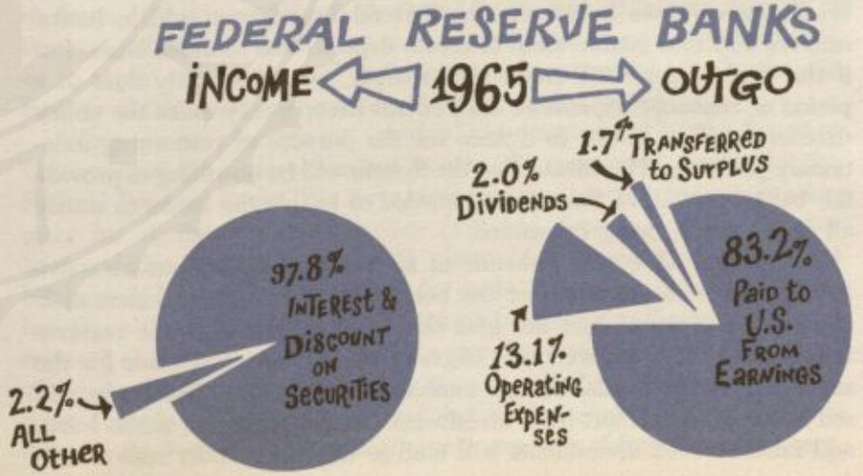
Whenever the Federal Reserve Banks increase their loans or investments, they also increase bank reserves an equal amount.

There is an important corollary to this principle, one that is often not fully understood. It is that the Federal Reserve Banks do not and cannot lend or invest a single dollar of the reserves they hold for their member banks. They cannot do so because every time they lend or invest, as we have seen, they create new reserve dollars as they credit the reserve account of one bank with the proceeds of a loan or as they credit the reserve account of another bank with the amount of the check given in payment for securities purchased in the open market.

Federal Reserve earnings

If the Federal Reserve Banks were guided by a desire, or a need, to make profits, they would, of course, increase their loans and investments, since that process would increase their income. But if they did so, they would also increase the supply of reserve dollars in the banking system and thus enable the commercial banks to increase their loans and investments and the supply of checkbook money. Their decisions on lending and investing, or not lending and investing, should be determined by the economic need for more or less money and credit. Obviously, therefore, the Federal Reserve Banks should not be operated for profit, and they are not. Profits are incidental to the operations of a Reserve Bank, but they have been large in recent years. Some of these earnings, after meeting the expenses of operating the Reserve Banks, have been kept in the Banks to make them even stronger. A small portion is paid to the member banks as a dividend (limited by law to 6 per cent) on the capital stock which they must buy in their Reserve Banks.

Most of the earnings, however, are paid into the public purse (the United States Treasury) and are there available to help meet the expenses



of the Federal government. In recent years these payments have averaged more than $1 billion annually. These earnings are paid voluntarily into the Treasury because the earning power of the Federal Reserve Banks arises out of their ability to create the reserves needed by the commercial banks of the country and out of their power to issue currency. Both these powers were given to the Federal Reserve Banks by the national government; without them the Reserve Banks could not earn anything like the sums they do. It is fitting, therefore, that a substantial portion of Reserve Bank earnings should be turned over to the government. And, of course, the Federal Reserve Banks are operated in the public interest.

The price of reserves

In addition to the ability to create or destroy reserve dollars by increasing or decreasing its loans and investments, the Federal Reserve has two other important tools for exerting an influence on the money supply in our economy: changes in the discount rate and in reserve requirements. We have seen that the Federal Reserve Banks may lend reserve dollars to member banks needing reserves to support their deposits. These banks may be short of reserves because of some unexpectedly heavy withdrawals by depositors or because of unusual requirements for credit, as might happen in a drought-stricken area. A loan might also be made to a bank that could obtain reserves by selling some of its investments, but needs a few days to do so most advantageously. Usually, these loans are temporary sources of reserves for banks, unlike the longer-term nature of changes resulting from gold flows and open market operations.

The member banks are charged for these loans at a rate of interest known as the discount rate, which is set by the board of directors of each Federal Reserve Bank and approved by the Federal Reserve Board in Washington. As we have seen, the Federal Reserve can add to banks' reserves and thus enable them to create deposits and to make loans. But if the demand for bank credit rises sharply, as it frequently does in a period of economic expansion, the Federal Reserve may make the policy decision to allow credit to tighten for the purpose of restraining inflationary pressures. This means that the System will be unwilling to provide the banks with all of the reserves needed to enable the banks to satisfy all of the credit being demanded.

Satisfying all credit demands at such a time might put excessive buying power in the hands of the borrowers, and result in inflation. If the Federal Reserve does not give the banking system all the reserves it could use, the borrowers will begin to bid against each other for the amount of credit available, and interest rates will rise. The banks will sell some of their short-term investments to get money to make loans, and rates on such investments will tend to rise also. Under such conditions, banks may find it necessary to borrow more frequently at the Federal Reserve Banks to meet their reserve requirements.

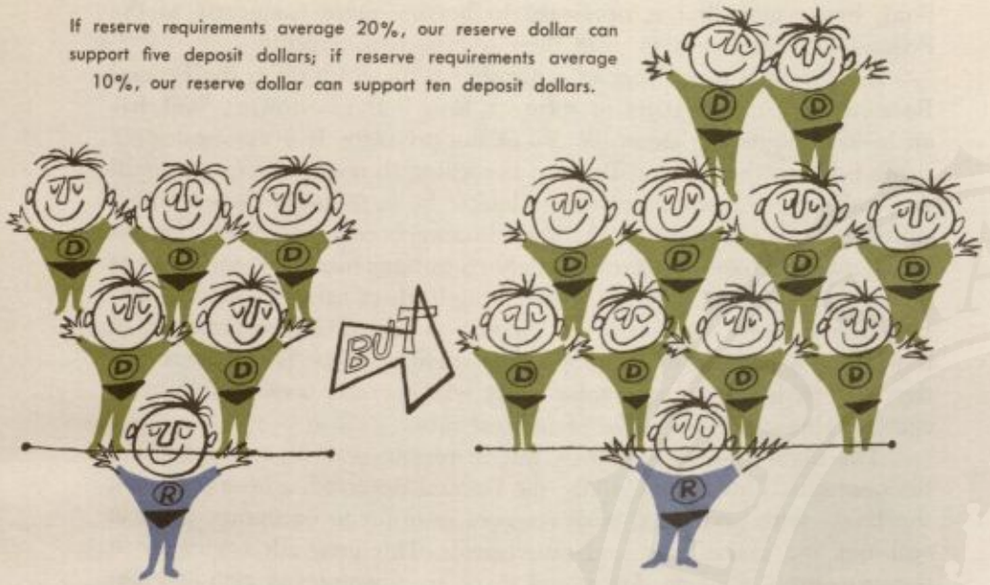
Borrowing is a privilege of a member bank, not a right; the Federal Reserve Bank may restrict or refuse a loan if the borrowing bank has made too frequent or excessive use of the privilege. If interest rates are rising because the Federal Reserve is seeking to restrict excessive credit demands, the discount rate will no longer be in its usual close relationship with other market rates. Then it may become necessary for the Reserve Banks to reinforce restraint efforts through increasing the discount rate. When the rate is raised, bankers and others active in lending and investing markets recognize the change as an official confirmation of trends that have been developing in the credit markets. The discount rate thus has an important symbolic effect which exerts considerable influence on almost all categories of interest rates.

The same kind of influence, but in reverse, can be seen when the discount rate is lowered. Usually, the Federal Reserve has been providing the banks with additional cash reserves in order to encourage them to seek out and make loans and investments. This generally occurs when the economy is slowing down, and there are unemployed men and machines that should be brought back into productive employment. As the banks try to use the new reserves to make loans, they compete in seeking creditworthy borrowers and interest rates tend to decline, so that the discount rate will then need to be lowered.

We have seen that the volume of bank reserves in our economy can be compared with a reservoir tank, and that the amount in the tank can be increased or reduced by increasing or reducing Federal Reserve loans and investments. But there is one more interesting feature of this "tank" of reserves, which the commercial banks must keep up to the "required" mark. It is that the marker showing the required level can be moved up or down. If it is moved down, there will be an extra or "excess" amount of reserves, which the banks can use to expand their loans and investments, or to repay any borrowing. If the marker is moved up, the banks will have to obtain additional reserves to fill the tank a little higher.

This reserve requirement "marker" can be changed by the Board of Governors of the Federal Reserve System, the supervisory agency for the Federal Reserve Banks. We have seen that the average reserve requirement for all the checkbook money (demand deposits) in the member banks of the country is (in 1966) about 14 per cent, that is, that the banks must have 14 reserve dollars for each 100 deposit dollars. Congress has given the Federal Reserve Board of Governors authority to require reserves of from 10 to 22 per cent for member banks in reserve cities (46 of the largest cities in the United States), and 7 to 14 per cent for all other (usually called "country") member banks. Against savings and time deposits the Federal Reserve may require reserves of from 3 to 6 per cent.

If reserve requirements average 20%, our reserve dollar can support five deposit dollars; if reserve requirements average 10%, our reserve dollar can support ten deposit dollars.



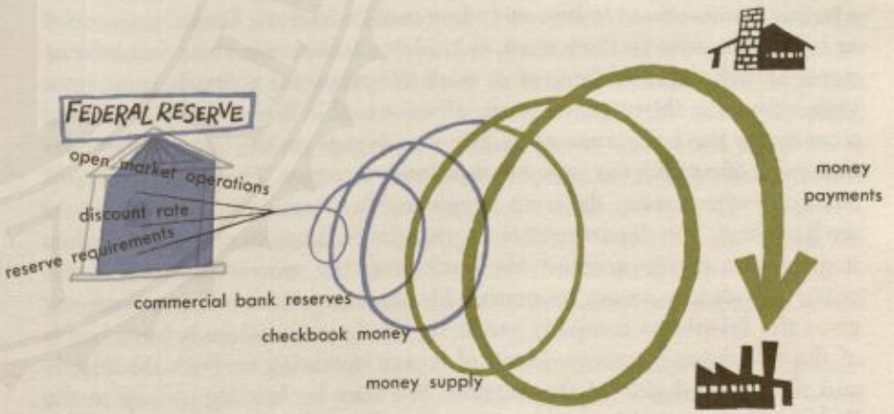
For most of the postwar years, because our economy was struggling with inflationary trends, the Federal Reserve kept these required percentages closer to the upper legal limits. The most important reason for doing so becomes clear when we consider what would happen if the required percentage were reduced to its legal lower limits. Then the average reserve requirement would be a little less than 10 per cent, and banks could support ten dollars of checkbook money with each dollar of reserve money; to put it another way, if banks were able to find acceptable loans and investments at a time when reserve requirements were reduced from the maximum to the minimum they could double the money supply. As we have seen in looking at the way our economy operates, if the volume of money payments were doubled and the supply of the goods and services were not increased, prices might double.

This does not mean that reserve requirement percentages should never be changed, of course; it just indicates that changes can be a powerful tool for the Federal Reserve to use. In 1958, for example, through three successive reserve requirement reductions, the System released about $1.5 billion of reserves to member banks. This allowed the banks to increase greatly their loans to the government, school districts and the housing industry. The additional demand coming from these borrowers contributed to recovery from the 1957-58 recession. A change of one-half of one percentage point in the reserve requirement against demand deposits of member banks, for example, now means a change of $600 million in the banks' required reserves.

Indirect, but influential

We saw earlier that the commercial banks of the country "deal" in checkbook money (deposit dollars), and that Federal Reserve Banks "deal" in high-powered money (reserve dollars). It is clear now that the three Federal Reserve tools for working on the money supply (open market operations, the discount rate, and reserve requirements) are tools for working on bank reserves. By making loans and investments, the Federal Reserve Banks can create reserve dollars in our banking system, while by selling investments or getting their loans repaid, they can extinguish reserve dollars. By charging more on their loans to member banks (raising the discount rate) the Federal Reserve Banks make it costlier for banks to obtain reserve dollars for brief periods, while by lowering the discount rate they reduce the cost of borrowing reserves temporarily. By increasing reserve requirements, the Federal Reserve Board can make it difficult for member banks to add to their loans or investments, while by decreasing reserve requirements the Federal Reserve enables banks to increase loans and investments, and thus the supply of checkbook money. Another result of increasing reserve requirements is to reduce the extent to which banks can expand the supply of checkbook money on a given amount of reserve dollars (ten times if reserve requirements are 10 per cent, five times if reserve requirements are 20 per cent), while decreasing reserve requirements will enable the banking system to extend more bank credit on the same amount of reserve dollars.

The Federal Reserve's tools work on the economy indirectly, therefore. First of all, they work on the commercial banks through their need



The Federal Reserve's tools work on the economy indirectly.

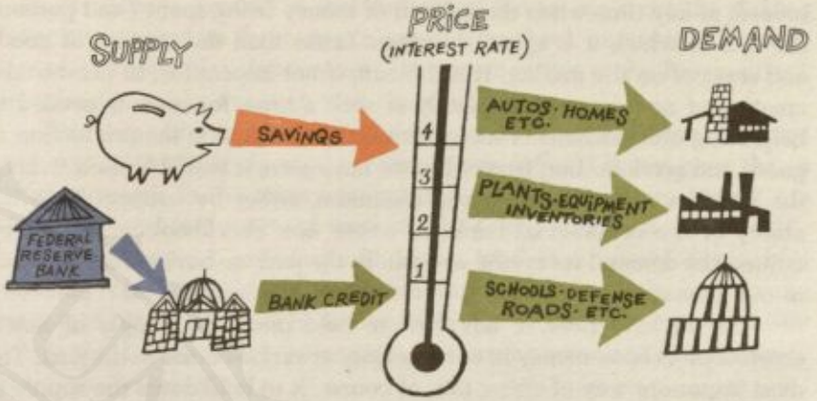
for legally required cash reserves which back up the checkbook money in our economy. Second, even the whole money supply is only one factor in the well-being of our economy, and in the last analysis is only a convenience that has become an indispensable device as our economy has become complex. But money of itself, whether jingling, folding, or checkbook in kind, cannot feed or clothe or shelter us; our economy must produce the wheat and wool and wood we need.

The credit market

Remembering these limitations, we might now return to the picture of our economy in operation, with its stream of money payments and the counterflowing stream of goods and services flowing through the producers, distributors, consumers, governments, and financial institutions. That stage of the flow of money payments at which the money moves into and out of financial institutions should now be of particular interest, for this is the market for money in our economy. It is here that savings accumulate and are put back into the stream of money through loans or investments; it is here that commercial banks create checkbook money when they make loans and investments; in short, it is here that the supply of credit and the demand for credit are concentrated. The credit market is like the coffee or the used car market in at least one respect: if the supply exceeds the demand, the price will tend to fall, while if the demand exceeds the supply, the price will tend to rise. In the credit market, the price is the rate of interest.

The demand for credit comes from many different people and is of many different kinds. Consumers want to borrow in order to buy a car or a house; farmers want to borrow to buy seed or tractors; businessmen want to borrow to enlarge their stock in trade or to increase their factories or stores or railroad cars. Some of us want to borrow for a month, some for a year, some for thirty years; some of us are able and willing to put up security for the loan; some of us give a mortgage on the house we're buying; some of us give our unsecured promise to repay. The supply of credit also comes from many different people and is of many different kinds. As we have seen, the department store gives us credit until next month when it gives us a charge account; the bank gives the grocer credit for a year when it lends him money to increase his inventory; the insurance company gives the telephone company credit for thirty years when it buys bonds of the telephone company. Many of us are operating on both the supply and the demand side of this market. We may be lending money to the Federal Government by buying its savings bonds, while at the same time we're borrowing from the bank on a mortgage.

The relationship between the total demand for funds and the total supply is important in the credit market, since it determines the price, but



In our economy, the "credit market" is where lenders and borrowers meet.

it is also important in the economy. The total supply of lendable money is drawn from two sources aside from loan repayments. Either it comes from the stream of money payments in the form of savings out of current income by individuals or businesses, or it is created by banks as they make loans and investments. Now, the demand for credit is always greatest when the economy is running at high speed – when employment, production and income are high. This condition is natural, for it is then that we as consumers feel most confident of our ability to repay any borrowing, or that we as businessmen feel we can profitably go into debt in order to increase our production and sales. As a result of this great demand for credit, it is also at these times that demand is likely to exceed the amount of money that all of us are saving. The "excess" demand for credit therefore converges on our banking system, which, as we have seen, can create deposits or checkbook money. But if our economy is operating at full steam there is little that the creation of additional money can do except push up prices, unless we can increase the production and distribution of the things we want to buy. However, this increase is hard to obtain if we are already employing almost everybody who wants to work, and practically all of our productive plant and equipment is in use.

This condition, in which new money is created when our manpower, plant, and equipment are fully employed, is a cause of inflation. The worst inflations have come in wartime, when more and more people are paid more and more but the goods they make are shot away or worn out in war, and are not put on the market for them to buy with the money they are paid. But inflations have occurred, and can occur again, in peacetime –

indeed, at any time when the amount of money being spent (and perhaps the rate at which it is spent) increases faster than the amount of goods and services on the market. It is difficult, if not impossible, to prevent the creation of new money completely at such a time, for some is needed to help bring about whatever increases can be obtained in the production of goods and services. But, from what we have seen, it would be best to keep the creation of new money to a minimum, either by cutting down the ability of the commercial banks to create new checkbook money, or by cutting the demand for credit, or both. In the past we have tried to do both in our economy.

The Federal Reserve has tried to hold down the supply of newly created checkbook money in our economy at various times in the past. The most important way of doing this, of course, is to hold down the supply of new reserve dollars to our banking system, since without additional reserves the banks cannot create additional deposits. Under the conditions of virtually full employment of resources that we mentioned earlier, however, a rigid unbending policy would be undesirable because it leaves no room for unexpected strains that may temporarily be imposed on an individual bank or a group of banks. As we have seen, deposits are constantly moving from account to account, from bank to bank, as payments are made by check. And, as payments are made, the reserve account of one bank gains funds as another loses. When demand for credit is especially great, and banks are already making full use of their available reserves,

When the price of money (the interest rate) goes up, some people refuse to borrow, and some people decide to save more of their incomes.

a safety valve is needed so that individual banks can meet the shifting pressures imposed on their reserve accounts by check payments. The privilege of borrowing (or discounting) for a week or two at the Reserve Bank provides the safety valve at such times.

The demand can also be cut down to some extent when the price rises, just as some people would refuse to buy coffee if it cost more than a dollar a pound. In the same way, some people will refuse to borrow (to buy credit), when the rate of interest (the price) goes higher.

In some critical periods we have also tried to cut down demand by imposing regulations on the use of consumer credit, that is, by limiting the amount of money that can be borrowed to buy automobiles or houses. We still do this by regulating the amount that can be borrowed to buy securities on stock exchanges.

We have just noticed that the credit market is like other markets in causing some buyers to change their actions when prices change, as for example, the people who stopped buying coffee when it rose above one dollar a pound. There is an influence on the sellers, too, for some of them decide to produce and sell more coffee when the price goes up. In much the same way, when the price of money (interest rate) rises, some people decide to save more of their income and lend it at the higher, more attractive rate. Thus, the supply of saved money can be increased, and the need for newly created checkbook money would be reduced.

The job to be done

The chief efforts to exert some degree of control over the way money does its job in our economy, therefore, are made on the total supply of checkbook money, and the efforts are made by the Federal Reserve Banks and the Board of Governors of the Federal Reserve System. When our economy is faced with a possibility of inflation, the primary efforts of the Federal Reserve are designed to hold down the increase in bank reserves, and in the money supply, to no more than the amount absolutely needed to take care of economic growth. The results of these efforts are felt by the lenders and investors in our economy, especially if they make the commercial banks less willing to expand their loans and investments. As a result of these efforts in such circumstances, the price of money (the interest rate) is likely to rise, and the price of outstanding loans (bonds) is likely to fall, since they must compete with the interest return available on new loans (bonds). This fall in price, which may see an old 2½ per cent bond drop from a market value of $100 to $90 in order to compete with a new bond paying 5 per cent, also discourages some lenders from selling old bonds they may have (because it would entail a loss) in order to make new loans at 5 per cent, and thus acts as a further restraint on lenders.

As the Federal Reserve buys securities . . . it creates reserve dollars for the banking system.

The only way the Federal Reserve Banks can prevent a decline in Government security prices is to stand ready to buy all the bonds at a support price. But the reserve dollars created in those purchases make possible a multiple growth in checkbook money.

In the past, when this development has taken place, there have been complaints that the price of bonds issued by the United States Government should not be allowed to fall below their face value and that the price of money for the Federal Treasury should not be allowed to rise. (This complaint does not involve United States Savings Bonds because they cannot fall in price; they can always be redeemed for cash at the prices stated on the bond.) There have therefore been demands that the Federal Reserve Banks should support the price of Government bonds in order to prevent their decline below face value in the market. But this way of preventing a price decline means standing ready to buy all the bonds offered at the support price, and, as we have seen, every time the Federal Reserve Banks buy securities they create reserve dollars in our banking system, and these reserve dollars make possible a multiple growth in checkbook money. In short, the Federal Reserve cannot make money cheap for the Treasury without making it cheap for everyone, and the only way to keep it cheap for everyone is to go on creating enough money supply to satisfy all the demand at the cheap price. As we have seen, this method is an easy way to produce inflation and a loss in the purchasing power of everyone's money.

When our economy is faced with deflation, on the other hand, the Federal Reserve tries to see that banks are not led to refuse a possible good loan or investment because they do not have the reserves they would need to back up the new deposits. The way it does so is to reduce the discount rate, or lower reserve requirements, or buy securities that banks or others may wish to sell in order to make other loans and investments, or try a combination of these actions. In short, it makes reserve dollars easily and cheaply available, directly or indirectly, to commercial banks. This course of action leads to conditions in which lenders and investors are encouraged to expand their operations, and interest rates tend to

decline, thereby encouraging businessmen and consumers to borrow. Once again, the influence on the economy is indirect, but – since money is present in almost all transactions – pervasive. It is important to remember, however, that commercial banks cannot increase credit (checkbook money) unless people are exchanging their creditworthiness for that of the banks, unless they are willing to borrow. In a severe deflation, many businessmen and consumers are reluctant to borrow because they consider their future income prospects are doubtful, and they think they will have difficulty in repaying their loans. It is for this reason that many economists think the Government should be a borrower in times of deflation and a saver in times of inflation.

We began our consideration of what money does in our economy by seeing that its principal job is to help make possible a smooth flow of goods and services through production and distribution to consumption. We saw that a great deal, though by no means all, depends on the flow of money payments in the economy, and that this flow depends on the volume of money and the rate at which it is spent, and that we would like to keep the flow of money payments in "balance" with the flow of goods and services. We can see now that any control over the rate of spending is extremely difficult to achieve, varying as it does with people's estimate of both the actual conditions and the probable trend of business. Through the Federal Reserve, however, it is possible to exert some degree of control over the volume of money, and so to exert some influence on the ability of people to spend.

When we think of all the developments that can cause difficulties for our economy, this amount of influence over the money supply may not seem much to boast about in an age of scientific wonders. If, however, we look at some of the alternatives, we may feel reassured: a refusal to let money do its rightful job can mean a harness of direct wage and price controls and material allocations. A lack of monetary management might put us back in the days of the Money Panic of 1907. A failure to use restrictive monetary measures helped to destroy the value and usefulness of money in Germany, China, and other countries.

Monetary measures alone cannot do the whole job of achieving and maintaining a prosperous and stable economy. Besides, they must be devised and applied by fallible human beings making fallible judgments of complex situations. Nevertheless, monetary policy is an indispensable part of any sound economy in a free society.

It is clear that Federal Reserve policies and actions have much to do with how well money does its job in our economy, but little has been said about the organization of the Federal Reserve and the way decisions are made. In the next few pages, those who are interested in knowing more about this organization will find an outline of the what and how, as well as suggestions for additional reading.

Outline of Federal Reserve Organization

I. Board of Governors of the Federal Reserve System – A governmental agency in Washington, D. C., consisting of seven men appointed for 14-year terms by the President, with the advice and consent of the Senate. They supervise the operations of the Federal Reserve System. In general, the Board is largely responsible for formulating national credit policies and for supervising their execution. In particular, the Board issues regulations interpreting the laws applying to Reserve Bank operations; it represents the System in relations with the Federal Government; it exercises special supervision over the foreign contacts and international operations of the Reserve Banks; it has full authority over reserve requirements (as a percentage of deposits), within limits set by Congress; it establishes maximum rates of interest that member banks may pay on time deposits; it reviews and determines discount rates established by the Reserve Banks; it directs the System's activities in bank examinations and coordinates its economic research and publications; its approval is necessary for appointment of the president and first vice president of each Reserve Bank (after they have been elected by the board of directors of the Bank); it appoints three of the nine directors at each Federal Reserve Bank, including the chairman and deputy chairman.

II. Federal Reserve Banks – Corporations chartered by Congress to operate in the public interest. There are twelve regional banks (with a total of 24 branches), one for each of the twelve Federal Reserve Districts into which the country is divided (see map). Thus, the Federal Reserve is unlike central banks in most other countries, since it is a kind of decentralized central bank. The board of directors of a Federal Reserve Bank fixes the discount rate of the Bank. The capital stock of a Federal Reserve Bank is owned by the member banks in its district; however, the Federal Reserve Banks are operated, not for profit, but in the public service. They hold the bulk of the cash reserves of their member banks, provide checking accounts to the Treasury, issue currency (Federal Reserve notes), collect checks, supervise and examine member banks, handle issuance and redemption of Government securities, and act in other ways as fiscal agent for the Government.

III. Member Banks – Approximately 6,200 privately owned banks, including all nationally chartered banks, and most of the larger State-chartered banks as well as many smaller ones. The member banks elect six of the nine directors on the policy-making board of their Federal Reserve Bank. Only three of these six directors may be bankers; the other three must be actively engaged in commerce, industry, or agriculture in the District, and may not be officers, directors or employees of any bank. (The third group of three directors is appointed by the Board of Governors; these directors may not be bankers, nor may they hold stock in any bank.) All nine directors represent the public in the discharge of their duties and responsibilities, and their primary objective is to accomplish the broad public purposes of the Federal Reserve Act. Member banks must subscribe to the capital of their Federal Reserve Bank an amount equal to 6 per cent of their own capital and surplus (but only half of this sum is paid in – the other half is subject to call); they must comply with reserve requirements, and with regulations governing branch banking, check collection and other banking matters. In return, they have the privilege of borrowing from the Federal Reserve Bank when in need; using Federal Reserve facilities for collecting checks, settling balances, and transferring funds to other cities; obtaining currency as needed; and receiving a dividend of 6 per cent annually on Federal Reserve Bank stock.

IV. Federal Open Market Committee – A group of twelve men (seven members of the Board of Governors and five of the twelve Reserve Bank presidents) who make policy for open market operations – that is, the buying and selling of securities in the open market. All open market transactions are conducted for a single System Account by the Federal Reserve Bank of New York on behalf of all the Reserve Banks. These transactions are supervised by a Manager of the System Account, who is an officer of the New York Bank. As we have seen, buying securities creates reserves and puts them into our banking system, while selling securities takes reserves out of the banking system and extinguishes them; this committee is therefore a most important part of the Federal Reserve System. Its importance is further enhanced because its meetings provide a forum for the careful consideration of the coordinated use of all three instruments of credit policy – the discount rate and reserve requirements as well as open market operations.

V. Federal Advisory Council – A group of twelve citizens, each elected by the board of directors of a Federal Reserve Bank, usually from among bankers of its district. Meets at least four times a year to confer with the Board of Governors on business conditions and to make advisory recommendations regarding Federal Reserve matters.

FEDERAL RESERVE PUBLICATIONS

The following publications are available without charge from any Federal Reserve Bank (see addresses below for the one nearest you) or the Board of Governors of the Federal Reserve System, Washington, D. C. 20551.

The Federal Reserve System, Purposes and Functions. December 1963. 297 pages.

Readings on Money. A discussion of the nature of money and the processes of its creation and circulation. 1963. 58 pages.

Your Money and the Federal Reserve System. An illustrated elementary discussion of the work of the Federal Reserve System. 1957. 20 pages.

Open Market Operations. Describes how open market operations in United States Government securities are used to cope with monetary stresses and promote a healthy economy. 1963. 43 pages.

Keeping Our Money Healthy. Illustrated story on how the Federal Reserve System works to promote price stability, high employment, and economic growth in a free economy. 1966. 16 pages.

Money and Economic Balance. A teacher's supplement to *Keeping Our Money Healthy.* Has suggestions for use in teaching unit on the role of money, banking and credit in the economy. 1965. 27 pages.

Your Money Supply. An illustrated story of money, its role in the economy, and how its supply is affected and controlled. 1965. 23 pages.

Story of Checks. An illustrated description of the origin and development of checks. The growth and automation of check collection is also discussed. 1966. 20 pages.

Other booklets on such special topics as money and Government securities markets, foreign central banking, foreign exchange, and monetary policy are also available at a charge.

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Atlanta, Georgia 30303

Federal Reserve Bank of Boston
Boston, Massachusetts 02106

Federal Reserve Bank of Chicago
Chicago, Illinois 60690

Federal Reserve Bank of Cleveland
Cleveland, Ohio 44101

Federal Reserve Bank of Dallas
Dallas, Texas 75222

Federal Reserve Bank of Kansas City
Kansas City, Missouri 64106

Federal Reserve Bank of Minneapolis
Minneapolis, Minnesota 55440

Federal Reserve Bank of New York
New York, New York 10045

Federal Reserve Bank of Philadelphia
Philadelphia, Pennsylvania 19101

Federal Reserve Bank of Richmond
Richmond, Virginia 23213

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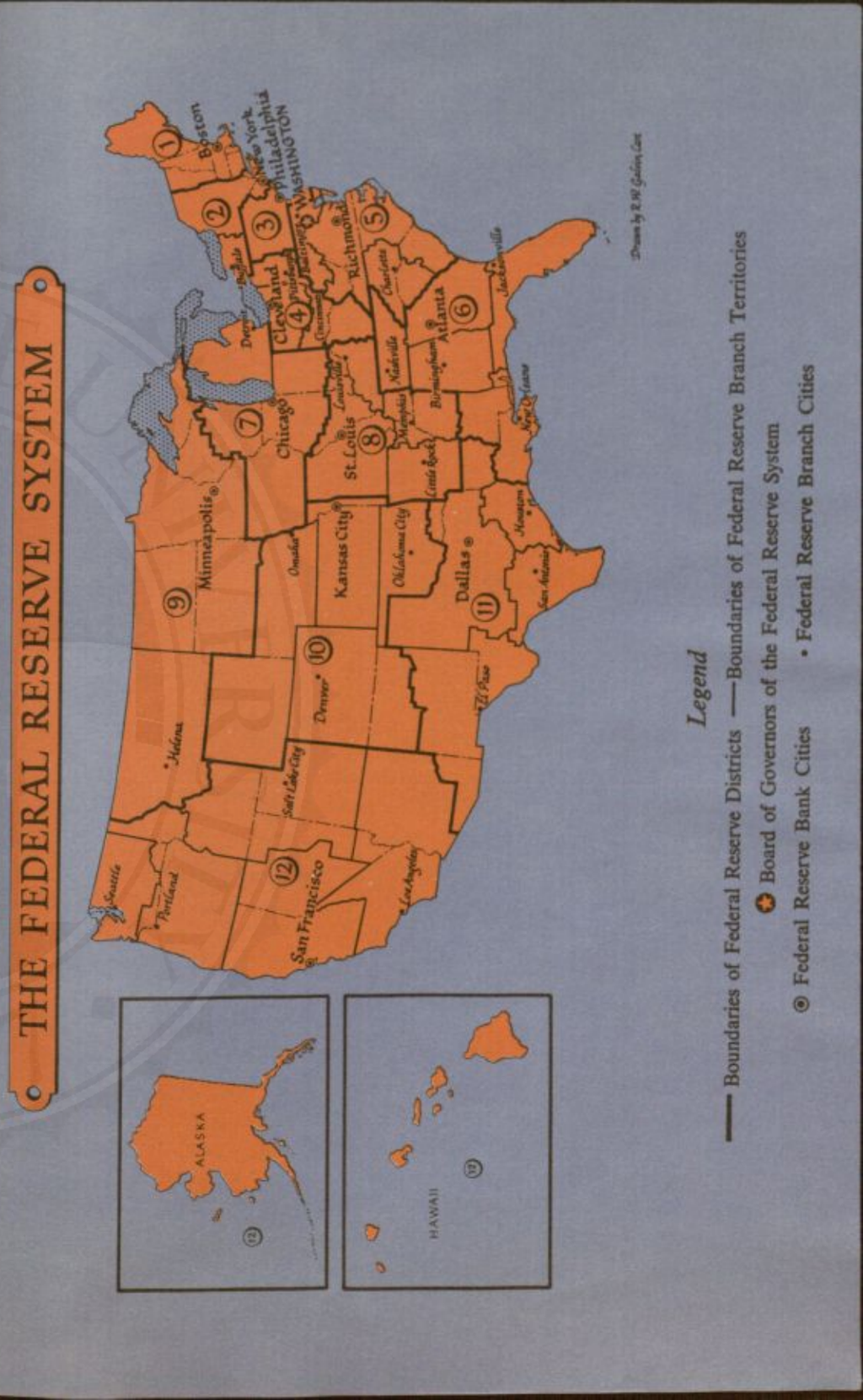

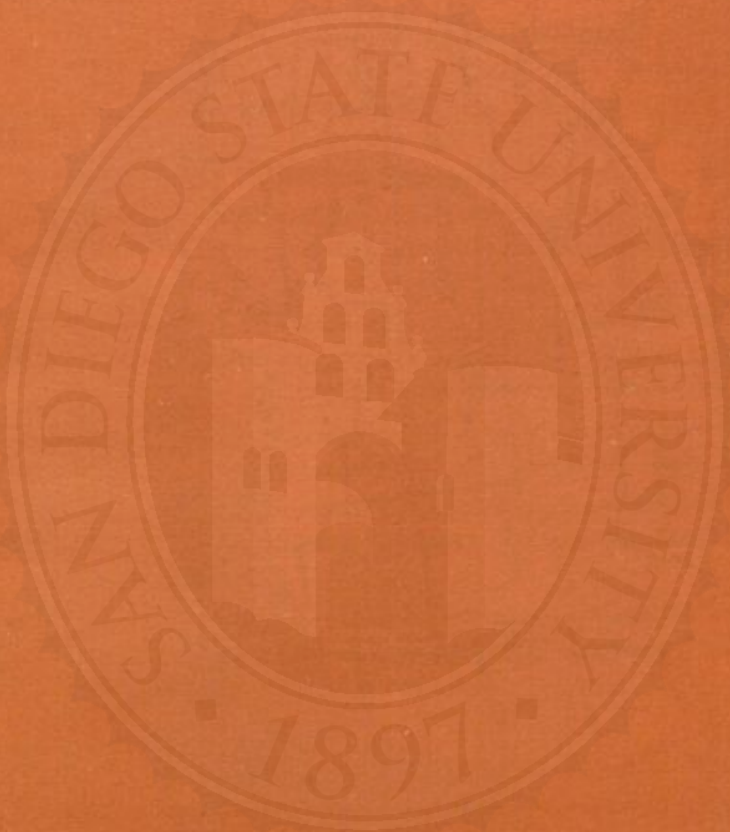

Federal Reserve Bank of New York

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