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INDUSTRIAL COLLEGE OF THE
ARMED FORCES

THE MONETARY AND BANKING SYSTEMS

Dr. Carl T. Arlt

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Reviewed by: Tom W. Sills, Colonel, USA

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15 September 1960

CONTENTS

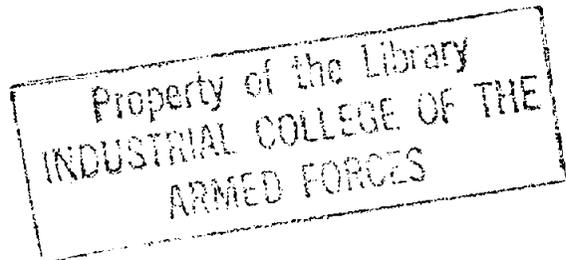
| | <u>Page</u> |
|---|-------------|
| INTRODUCTION--Colonel Parker R. Colmer, USMC, Member of the Faculty, Industrial College of the Armed Forces..... | 1 |
| SPEAKER--Dr. Carl T. Arlt, Economist, Federal Reserve Bank, St. Louis..... | 1 |
| GENERAL DISCUSSION..... | 25 |

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COL. COLMER: Admiral Patrick, Gentlemen: There are many important aspects of the broad field of economics; and, along with such subjects as the free marketing system, wages, and the like, it is only natural that we include the vital subject of the lecture this morning--"The Monetary and Banking Systems."

These things really affect all of us. . . We all understand money. Money and banks are to our economic life what the nervous system is to human life. Many of you, like myself, are/very familiar with the principle of two up and one back; but how many of us understand how you can put one up and possibly get six back?

Our lecturer this morning, Dr. Carl Arlt, is eminently qualified to explain, among other things, how the increase of bank reserves can expand the money supply many times. He has had a long career as a teaching economist, and is at present a member of the Federal Reserve Board. His ability to communicate complex problems to others in an understandable manner has compelled the College to recall him to this platform for a third time.

Dr. Arlt, welcome back, and it gives me great pleasure to introduce you to this year's class.

DR. ARLT: Admiral Patrick, Members of the Staff, Fellow Students of money and banking: It's a pleasure to be here, although as I look at

this lectern, I'm reminded of some traumatic experiences I've had before with it. I elbowed down at one point, and all of a sudden the thing dropped down or it rises up. But I understand that it has an additional function-- that if I speak more than forty-five minutes, it comes up and clips me in the chin.

As Colonel Colmer pointed out, money is important. You are all familiar with it. Most of us think that, while it's not the most important thing in life, it's way ahead of the thing in second place.

I realize that I have to cover a vast subject, a subject which I would approximately ordinarily spend ^{one} semester on, and I have to cram it in in forty-five minutes. I was told that the bank, when they heard about the program, said: "Arlt, you'd better work fast, particularly because up to now your work has been half fast." You get those things early in the morning ^{so} I like [^] this audience very much.

Well, now, in order to provide a proper perspective for a review of the American monetary system and its relationship to the commercial banking system, I think it's appropriate to set forth a few generalizations or observations. In other words, I want to set the stage. It'll take me a while to get into this what I'm supposed to speak about, but we've got to set the stage and get some of the concepts in mind. Some of them you've ^{to} already been exposed [^] in your reading. I just want to act as a refresher here for you on that score.

First of all, observation No. 1 would be that when I speak of the money supply, I am referring to the total volume of coin and currency, first--

about 28 billions of dollars--and then the much larger volume of demand deposits subject to check--about 112 billions of dollars. Or a total of about 140 billions of dollars, if we want to make a lightning-like calculation and add those two things together--28 and 112.

Now, obviously, the very large proportion of demand deposits, of 112 billion, reflects the importance of the commercial banking system in our money supply. This we will keep in mind.

Now, observation No. 2: Actually as economists we are all interested in the total flow of spending in the economy. It is the flow of spending against goods and services that determines the general level of economic activity and your prices. So when I talk about the total flow of spending, or the total flow of payments, I don't want to get that confused with the money supply or the stocks of money. The total flow of spending is something more than the money supply. It is really the money supply times a certain rate of turnover of that money supply to build up the total flow of spending.

In other words, 140 billions of dollars may, in a given period of time, roll over, be spent, re-spent, through a given year to build ^{up} a total flow of spending which will be a very definite multiple of that 140 billions of dollars. In the newspapers you hear of this turnover of money ^{referred to} as the velocity of circulation. And, just to give you an illustration, it would be possible for me to take a dollar bill here, one single dollar bill, and buy some service from you, one of you; and then you could take the same dollar and go right on through the room buying services, books, or whatever you

might have in mind; so that that one dollar, if spent frequently and rapidly in a given period of time, can build^{up} a total flow of payments which will be maybe 20, 30, or 140 times the actual dollar bill. So it is money and its velocity which is responsible for the total flow of spending in your economy.

I might refer, to bring you up to date on some current events--I think you are probably aware of this--that during 1959, when we were concerned about inflationary pressures, and when we talked about the great flow of spending that was pressing against certain goods and services and tending to push prices up--in that period, when spending was increasing rapidly, actually the money supply increased hardly at all. Over the year 1959 the money supply probably increased not much more than--I think the amount was--one billion dollars--maybe about 138 to 139 billions of dollars. Though the money supply was not increasing for all practical purposes, what was increasing was the willingness of people to part with liquid^d balances once they had acquired them, and spend them rapidly. They didn't sit on them. They didn't hoard them.

That reminds me. I remember one time during the gold embargo, the period of the thirties, some lady brought in about fifty dollars in gold. It was against the law to have gold in your possession. The bank teller said: "Why, Mandy, you've been hoarding." She said: "No, sir, boss. I got this taking in washing."

Well, now, observation No. 3 that I'd like to refer you to is that the flow of payments, of spending, and its role in economic activity, can best

be visualized by picturing the economic system as a sort of wheel of spending flows and output flows. And that wheel is best described in this little booklet, which I hope you have in your hand. If you will check page 2 of this booklet, that wheel of spending is portrayed in that lower chart. And actually, for all practical purposes, the economy is one in which you have people who have received money--we'll take the consumer class--have received money as income in their varied capacities--as laborers, as owners of land, or as owners of capital--they have received income from producers. They turn around and spend it on goods and services that have been produced by what we call over here the business and agricultural sector of the economy. And then the business and agricultural sector of the economy in turn moves along and spends the money to get more labor, more services and land and capital. And so the process goes on of a flow of expenditures for goods and services.

Now, this is a relatively simple picture of flows of expenditures and money against goods and services. I think one thing you want to see out of this simple picture--it's a good way to illustrate in a sense the problem of inflation--I think we could see that if the flow of expenditures--money payments--increased more rapidly than the output of goods and services--for instance, if that spending stream, in red there, the flow of spending, widened and got much larger, but the output of goods and services didn't get much larger, then what happens to prices? Generally the prices would tend to shoot up.

To give you a simple mathematical illustration--and I don't give you

a simple one because I think you can't take a complicated one--I can't explain a complicated mathematical one--but supposing we had a total flow of spending of \$10,000, moving against 1,000 units of output. We could then say that the average price of the output would ^{be} \$10 per unit. But supposing you broadened that stream of spending and made it \$20,000, with the same 1,000 units of goods and services, then the average price, dividing the total volume of money payments by the output, would tend to rise.

An inflationary situation, the one which we were ^{worried} about in 1959, for instance, is one in which the total flow of spending is bulging. It's getting broader, getting larger. The \$10,000 is becoming 10 billions of dollars and going up higher and higher, with the output of goods and services not increasing as rapidly, and with people worried for fear that the output can't increase much more, being held down by maybe the physical limits of the capacity of various industries, factories, and so on. So that we see that the relationship of spending to output is a very crucial relationship. It can cause trouble if the spending rises rapidly.

It can also cause trouble if the spending tends to drop down. You can see that if the output of goods and services should remain constant-- just to take a hypothetical illustration--and the spending tends to drop, if the spending for these goods and services should tend to drop, then you see some kick-backs, maybe some reduction in prices, some contraction in employment, and then ultimately a contraction in output.

This is the problem that some people are suggesting that we face now. The spending may not be too strong, and we may be facing a decline

in activity. I am not going to call this a recession. Why stick my neck out? Certainly it's not the sizzling boom that we predicted in January. It looks more like sort of a pooped plateau or something like that. But certainly the activity is not strong, and the spending is not growing the way we would like it.

Now, let's continue to look, however, at this chart. It's complicated at best, but it should, to be realistic, be even more complicated, because it's oversimplified. In that chart on page 2 I have merely suggested that people are spending money on goods and services; industry takes the money and turns around and spends all of it; and then all the people who receive income turn around and spend all of it for consumer goods. But that's far too simplified.

The complexities, or the important decisions that may make this less simplified, are then introduced here beginning on page 3, and then swinging on to pages 4 and 5. What I'm referring to there is that when people receive their money as income, instead of turning around and spending it all on consumer goods and pushing the money through the income stream, they engage in the phenomenon of savings. They are refraining from consumption.

Now, as of the time that the savings phenomenon takes place, savings constitute a drainage from the spending stream. Don't get me wrong. Every time I say this somebody says I'm trying to undermine the Christmas Club and the thrift organizations. But let's face it. In terms of the economic facts, the phenomenon of saving is an act of not spending, initially.

I'm not talking about what happens to the savings. In other words, it drifts right out of the income stream temporarily.

Then, of course, we have all been forced to realize that there is another factor which leads to some drainage out of our spendable funds, namely, taxes.

So we have two important outlets or pipes running out of this first simplified picture of spending--savings and taxes. These are the drainages.

But then we have, however, on the other side of the fence, two supplements to this spending stream. And you will notice, for instance, on page 4 a little red supplement "investment expenditures."

Now, when I talk about investment expenditures, I refer to the national income terminology, namely, the actual expenditures by businessmen on plant and equipment. I am not talking about the purchase of a security--buying A. T. & T. That is not an investment in the economic sense. That's merely the purchase of a security and you've moving your money along. Investment in this sense that I am talking about is the expenditure by business on plant and equipment. And this constitutes a net addition to whatever consumer expenditures may be being made for goods and services. This is an important supplement.

And then we also have another supplement to our spending stream--government expenditures, at all levels. We are particularly concerned with the Federal Government expenditures.

Now, what I'm getting at here, then, is that this wheel of spending flow, that was first presented in its simplified form on page 2, can become

more complicated, because there are introduced very important decisions made by holders of money balances and those who seek money balances. These decisions to save, these decisions to invest in plant and equipment. And then, looking at the government, the taxes drawn out of this system, and then the money put back in by government expenditures.

It should be, I think, fairly clear that ^{up to then} the total level of spending that goes around the economy is ultimately dependent upon this relationship between the amount drained out by savings and taxes on the one hand, and the amount put back into the spending stream by investment expenditures and government expenditures on the other.

And in periods of boom, where the economy is expanding and total spending is increasing rapidly, more than likely the story lies in the fact that the amount that business is spending on investments exceeds the amount drained out by savings; and the amount that government is spending is probably greater than the amount that it is pulling out of the system by taxation.

Thus the sum total of government expenditures and business investment expenditures, if it exceeds the total of drainages out of the spending stream in the form of taxes and savings, then you have the tendency for the spending flow to increase. This is an important relationship.

For instance, let's go back to the thirties. One of the problems of the thirties, and one of the problems of declining activity in the thirties, was the fact that there was no business investment expenditure to talk about. Businessmen didn't have any bright outlook. They refused to put money into plant and equipment.

I remember classes in philosophy were discussing the very abstract question: "If there is no Hell, where is our business gone to?" This was the feeling that the businessmen had, and they were not making these investment expenditures; and as a result, savings exceeded investment, and the spending flow dropped.

Now, one of the things that helped bolster the economy at that time was the deficit spending by the Federal Government during the thirties. This added to the spending stream. But many economists feel that it didn't add enough, because State and local government expenditures were falling sharply at the same time.

Well, now, we have some of the important factors that affect the spending stream. And remember, the spending stream is a function of the money supply, and the willingness to turn it over and spend it. And the willingness to turn it over and spend it makes it also a function of the investment spending decisions, government spending decisions, and your savings decisions. All these affect the turn-over of money.

Well, now, we have an important missing link. The important missing link is what I call the money market mechanism. And the money market mechanism might be pictured in the very simplified form on page 5, in that category at the top of the top circle, and also the lower one, namely, "banks." We are using "banks" in a very broad sense there.

What I am getting at is that we have a network of financial institutions. They may be commercial banks, savings banks, savings and loan associations, credit unions, finance companies, the organized exchanges.

All these are financial institutions that have something to do with moving money from people who hold it to people who are seeking the funds for investment expenditures, for government expenditures, and so on, or for additional consumer expenditures.

These are the connecting links, because we have to answer the question: You say savings are a drainage. Well, what happens to the savings? Well, of course, many of our savings are put in these institutions--the commercial banks and so on. And then these institutions push it along and make connection with those borrowers, corporate, consumer, government borrowers, and push those funds through; and thus connect, bring all these pipes together and thus allow the spending stream to continue.

A good portion of the money that is pushed through is pushed through on a credit basis. We have this pattern where you have lenders and borrowers. In the year 1959, for instance, we had a total credit volume of about 60 billions of dollars flowing through this money market. And the reason the interest rate rose in '59--the interest rate is the price paid for these loanable funds--was the fact that the Government was borrowing so terrifically, particularly in early '59, trying to finance a 15 billion dollar deficit.

And, by the same token, the reason the interest rate had fallen in 1960, for the most part, is because the Government is not as important a borrower in 1960 as it was in 1959, and business demands for funds--private corporations, steel corporations, and so on--have not been as strong.

But the main thing to realize is that you have these financial institutions, making idle balances more active. I save. I put it in a bank and

forget about it. (I'd just like to think of sitting back and doing that.) But, anyway, somebody else, then, makes the decision to borrow, and these financial institutions lend it out. They are making money active.

Now, all these financial institutions, with the exception of the commercial banks, do not change the money supply when they pick up the savings and lend it out. All they are doing is making the money supply move along and become active and spent in other areas. The insurance company takes your money and lends it out on mortgages. The savings and loan company takes your money and lends it out. Now, here we get to what I was supposed to speak about--commercial banks.

The commercial banking system has a unique ability. The commercial banking system can take your funds and, with its ability to extend credit, because it can add to the money supply, the commercial banking system can create demand deposits, which become a part of the money supply.

The significance, then, of the commercial banking system, among other reasons, lies in the fact that as you look at this circular flow of money, and look at the stream of money going into this big thing known as banks--we'll just confine it to the commercial banks--we could visualize a situation in which the stream of money going into the banks may be much less than the stream of money coming out of the banks in the form of increased demand deposits. In other words, the commercial banking system can swell the money supply at that point and thus add more to this spending stream.

It's because the commercial banks can do this, and if we're worried

about inflation, and because we know that we don't have the laws on the statute books to regulate the velocity of the turn-over of money, the people's willingness to part with balances--we can't control that--but what can be done--and this is in a sense the core of the Federal Reserve control--what can be done is to focus attention on the lending ability of commercial banks, inasmuch as the commercial bank is the only institution that can add to this volume of demand deposits; and hoping by controlling the lending ability of commercial banks, then you control, at least in part--not in total but in part--the change in the flow of money payments, which depends on the volume of money and velocity of circulation. And it's the volume that we try to focus attention on, because that's the only thing we really can focus attention on.

So we then raise the question about the commercial banking structure and its lending ability.

As I understand it, the reading you have done has given you a general background on the characteristics of the lending ability of commercial banks. I need not go into all the details. I think you know roughly that one of the characteristics of the commercial banking system--we have about 14,000 commercial banks in our economic system--is that people prefer to deal with demand deposits subject to check rather than coin and currency. Generally, people are putting whatever coin and currency they have into the banks. Or if they receive a check from somebody, they deposit it in their bank and are perfectly willing to accept in exchange a demand deposit made by that bank. So the people prefer to deal with demand

deposits . The checking business, after all, as you know, does almost 90 percent of all the financial transactions today. We don't want to be bothered with coin and currency. At least, that's what it says in the books. But, seriously, it is true that we prefer to deal with demand deposits.

Now, another characteristic that you have noted is that ^{with}all the funds flowing into banks, whether it be coin, currency, and so on, and thus leading to these demand deposits that the banks owe to their customers, the banks don't have to have dollar for dollar backing to meet the possible drainages on those demand deposits. The banks have learned by experience that they need only fractional reserves to support their given volume of deposit liability. They know that not all their depositors are going to come in on the same day and ask for coin and currency. They know that only a fraction of them will come in of those who have put money into the banks. And as long as the bank can meet the fractional demand for coin and currency, very few people are going to come in. Of course, if we suspected that the banks couldn't meet the fractional demands, then we would hit them with both barrels and try and make them meet all of the demands, and you would have runs on banks.

I think most of you realize now that the danger of a run is rather small, in view of the protections which depositors have, namely, up to \$10,000 in a deposit account. Originally it was \$5,000, but then it became \$10,000, the guarantee of bank deposits. What a sigh of relief I evinced when it went from five to ten! I think my sarcasm is apparent. But, actually, about 96 percent of our deposit holders are therefore protected

by deposit insurance. So you don't have to worry about getting dollar for dollar for your checking account.

Well, now, to go on with our commercial banking system: The banks don't have to, therefore, have to have 100 percent cash. That means, then, that when they do get cash, when an individual bank gets cash--we'll say, suppose it gets a million dollars from various people in the community--it only has to have a fraction. And through the years we have developed certain laws and policies, which means, then, that the banks hold a certain reserve, which is just a fraction of the total volume of deposit liability. And we'll assume for all practical purposes that the reserve is, oh, about 20 percent.

Now, we have found out, I think, in our reading that the basis of the banks' lending program, then, is, namely, playing around with those reserves which are in excess of those that are actually required. People deposit a million dollars. If you had a million dollars in cash and you only need maybe \$200,000 of it as a reserve position, the other \$800,000 you have as what we call excess reserves. And that's what the banks can lend out.

We find that it is this, then, this lending on the basis of some extra reserves, that constitutes the ability of the commercial banking structure to build up our deposit credit. This bank lends out \$800,000, we'll say, on the basis of excess reserves. Sure, the people who borrow the money write checks and pull the \$800,000 right out of that bank. But then those checks are maybe deposited in other banks; and the \$800,000 of reserves

are moved from this bank to still another bank. This particular process is described in this booklet and therefore I won't go into it in detail, because I have to run along. It's described beginning on page 7 and moving through page 10.

Oh, while I am on this page 7, I look at page 6 and I merely want to call your attention to the fact that this book is in the process of revision; and those figures that you see for cash, ^{and} bank deposits on page 6 are not current figures. I gave you the current figures of 28 and 112. The reason the 192 looks so large to you there is that then, when the book was written, some people used to consider the money supply as not only demand deposits, but also time deposits. We are merely calling it demand deposits now.

Now, I think I'm going to rely on your understanding of the ability of the commercial banks to extend this credit, and the understanding of the fact that it is the system of banks together by moving these reserves around and lending on the basis of newly acquired excess reserves, it is possible that this first \$800,000 in excess reserves may lead to new deposit liability of four or five times the size of the excess reserves. You have a multiple extension of credit.

Now, if you want to raise questions about later, all right; but I want you to bear with me for the time being and then raise this point: It's apparent that the lending ability of the commercial banks, therefore, will depend on their reserve position. They have to have reserves, and reserves over and above their requirements in order to lend. Question, then:

How is it that the banks have been able to expand their demand deposit liabilities so tremendously, we'll say, since 1929 up to the present time? Or, in other words, how have we had such a great increase in our money supply? The answer must be, the banks acquired new reserves and therefore acquired new lending ability.

But how did they acquire the new reserves? The banking system didn't acquire very much by having the public all go en masse to the banks and deposit what remaining coin and currency they had. The public right now only has 28 billions of dollars in coin and currency in its hands.

What I'm driving at here, then, is that the banking system, in order to meet the growing credit demands of the economy through the years has had to acquire its reserves elsewhere, and that elsewhere essentially is the money-creating system and the mechanism involved in the Federal Reserve System. We will also throw in the Treasury. There are really two major sources of reserves for the commercial banking system--that which the Federal Reserve System puts in, and that which the Treasury puts in essentially through its gold-buying program.

Now, let's look at the Federal Reserve System and the Treasury.

You know that the member banks of the Federal Reserve System have about 85 percent of the banking business of the United States. They hold their reserve positions in the Federal Reserve banks for all practical purposes. They have to hold all their legally required reserves, and they usually hold whatever excess reserves they have, in the Federal Reserve System. This reserve of the member bank, which is an asset for the

member bank, becomes sort of a deposit liability for the Federal Reserve System in the Federal Reserve banks. And there are 12 Federal Reserve banks. You have learned this in your reading.

Now, assuming that the banks are loaned up to the hilt, that they have just enough reserves on hand to subscribe to the legal requirements of their total volume of deposit liabilities, and assume that they had that in '29, then how did they get so much more up through 1950? The answer was that through those years the Federal Reserve System, which has the power to create credit, built up the reserves of the member banks.

One of the major devices has been open market operations, namely, in this case the purchase of Government securities by Federal Reserve banks. The Federal Reserve banks have been authorized by Congress to buy in the open market, or sell in the open market. And when they buy, just think what this does.

The Federal Reserve bank buys Government securities in the open market. The Federal Reserve bank writes a check on itself, gives the check to the seller of the bonds. The seller of the bonds deposits the check in his bank. The bank turns the check over to the Federal Reserve. And what does the Federal Reserve do with it then? In effect it pays for the bonds by giving the commercial banks a larger reserve account at the Federal Reserve bank.

If the Federal Reserve banks^{as a group,} we will say, buy one billion dollars of securities in the open market, that will lead to new reserves for the commercial banks of one billion of dollars. And the Federal Reserve in

effect has paid for them--they go out in the open market and buy securities and write a check, and when the check is cleared, they pay for it in effect by giving the member banks new bank accounts in the Federal Reserve system. And then the member banks can use those newly acquired bank accounts as the basis for new lending.

You will observe the statistics of the Federal Reserve System. They have increased their holdings of securities from, well, 1 billion 9 in 1933 -- this is not in the booklet, unfortunately--1 billion 9 in 1933, and they now hold 26 billion or thereabouts. And if you will recall, the process whereby this buying of securities in the open market will thus give new reserves to the commercial banking system, and the commercial banking system can lend on the basis of the new reserves. Practically all of the new reserves they have acquired they can lend on. They keep a fraction to meet the larger demand deposit liabilities.

Now, you may raise the question: Well, now, suppose the member bank wants cash? This is an important point. Around Christmas and Easter the banks are always crying for more currency. You want more currency around Christmas time to do your Christmas shopping. Well, the Federal Reserve System^{is} authorized by Congress to issue Federal Reserve notes. When a member bank that has a deposit account in the Federal Reserve bank wants more coin and currency, they merely call up the Federal Reserve bank, or write a check on the bank account which it holds in the Federal Reserve bank, and say: "I want \$57,000 in Federal Reserve notes." And the Federal Reserve bank gives them \$57,000 in

Federal Reserve notes and knocks down the account of the bank by the corresponding amount. Just the same as when you go to your own bank and you want cash, you pull it out, and the bank account, unfortunately, goes down by the same amount.

In short, then, the Federal Reserve System has a note-issuing power; and it has this power really to buy Government bonds by paying for them by increasing the reserves of the member banks.

Then you may raise the question: Is there no limit to this? Well, then, I try to wheel in here the Treasury's gold-buying program and another statute on the law books, namely, that the Federal Reserve System, by creating more of its own credit, extending Federal Reserve credit, through the purchase of securities, and through the issuance of Federal Reserve notes, giving the banks more reserves and giving them more cash if they need more cash,--there is a limit to what the Federal Reserve banks may do.

The Federal Reserve banks have a legal reserve requirement just as the commercial banks have. The Federal Reserve banks must have on the asset side gold certificates, which in their relationship to the liabilities of the Federal Reserve bank must be for every one hundred dollars of liabilities of the Federal Reserve bank in notes and deposits, the Federal Reserve banks must have twenty-five dollars in gold certificates.

In short, there is a 25 percent legal reserve requirement on Federal Reserve obligations--a gold certificate requirement. And if for any reason the volume of liability would ever approach that ratio of four to one for the

Federal Reserve bank, the Federal Reserve bank could no longer expand credit to the commercial banks, unless more gold were bought by the Treasury.

Now, how do the gold certificates get into the Federal Reserve bank, because you never see gold certificates? Since 1933 no one has seen gold certificates. Well, you will recall that the Treasury buys, stands ready to buy, gold at \$35 an ounce.

How does this process work out? The Treasury buys newly mined gold or gold brought in at \$35 an ounce. It writes a check on its deposit account in the Federal Reserve bank. That check falls--supposing you discover gold under this building and you sold it to the Treasury--you get the Government check. You deposit it in your bank. Your bank therefore, gives you a larger deposit account. Your bank takes that check to the Federal Reserve bank and gets a larger reserve account in the Federal Reserve bank. And then the Federal Reserve bank looks at this check and says: "That's drawn on the Treasury Department. We'll knock down the Treasury Department by the corresponding amount, after having increased the member bank's deposit account by the corresponding amount."

The Treasury, therefore, has initially bought the gold by depleting its balances at the Federal Reserve bank. But then here's something the Treasury can do that you and I can't do when we buy commodities. On the basis of the gold which the Treasury has bought, the Treasury may issue gold certificates. And this is what it does. The Treasury issues gold certificates at the rate of \$35 for every ounce of gold, and deposits

those gold certificates in the Federal Reserve bank. They become an asset of the Federal Reserve bank, and it builds up the deposit claims of the Treasury in the Federal Reserve bank.

It's a remarkable device that the Treasury has here. The gold doesn't cost them anything. They write checks on their bank account, they deplete their bank account, and they replenish their bank account by issuing a paper currency on the basis of the commodity which they have bought--gold.

Now, thus it's the acquisition of gold certificates through the Treasury gold-buying program that has built up the gold certificate reserve of the Federal Reserve banks, has built up their lending power to the commercial banks, which then in turn builds up the commercial banks' lending power to the public and the money supply.

Gold stocks, for instance, in the United States increased from about 4 billion in 1933 to 22 billion in 1941. And the significant part of that is that, remember that for every dollar of gold bought by the Treasury, and every gold certificate put in the Federal Reserve, the Federal Reserve can extend four dollars of credit through the purchasing of securities, the issuance of Federal Reserve notes, and so on. And that four dollars of credit, when it becomes a new reserve for the commercial banks, then can be blown up by the system to maybe four or five times the amount. So that we have a pyramid of money supply and credit centered on this gold stock.

Now, lest some of you have been worried by the recent gold outflows, I might point out that the Federal Reserve System is not limited in its ability

to extend credit. The Federal Reserve System has a gold certificate deposit right now which represents something like 40 percent of their outstanding liabilities--40 percent. They need only have 25 percent. So that there is an awful amount of elbow room for the Federal Reserve System to extend more credit.

Now, briefly--and I see that my time is running^{out}, I hope that you will fire questions at me on things that I haven't covered--briefly, then, the Federal Reserve System through the years has expanded the reserves of the commercial banks. And its ability to expand the reserves of the commercial banks, by open market operations essentially, on a temporary basis too by lending to member banks--and we might say also they made the member banks' reserves more effective at times by reducing legal reserve requirements, so the member banks don't have to have as much on hand, and they can blow up their lendings that much more-- although we think of the Federal Reserve as expanding that through the years and the Treasury helping with its gold-buying program, the Federal Reserve on a short-run basis may be concerned about curtailing or slowing up the rate of growth of commercial banks' new reserves. And this booklet would bring out the devices by which the Federal Reserve might curtail the growth of the reserves of commercial banks and therefore the growth of the commercial banks' lending.

Instead of buying Government securities, you would notice that the open market operations would be oriented towards sales. The Federal Reserve System would tend to sell securities. And when people buy those

securities, they have to pay for them by writing checks on their account, the checks flow back to the Federal Reserve, and the Federal Reserve therefore knocks down the accounts of the commercial banks, and reduces their ability to extend credit.

Or the commercial banks may find that the Federal Reserve may raise the discount rate and make it more expensive for them to borrow. It's conceivable that the Federal Reserve could raise the legal reserve re-ratio up to maybe 20 or 22 percent and make it tougher for the member banks to lend.

More recently, in 1960, in the beginning of the second quarter, the Federal Reserve System has been oriented toward ease. What has that ease meant? It has meant simply this: that the Federal Reserve System is interested in the fact that the banks ought to lend more in order to generate larger spending, because we're concerned about the level of economic activity.

Consistent with that program, the Federal Reserve has engaged in more heavy open market purchases of securities.

Also consistent with that program, the Federal Reserve has lowered the discount rate twice--in June and in August--by half a percentage point each time--with the idea of getting the member banks oriented maybe to doing more borrowing from the Federal Reserve; thus building up the reserves so they could lend more easily to the member banks.

And then the Federal Reserve has introduced some new wrinkles in the counting of vault cash, which makes it easier for the member banks

to meet their reserve requirements.

So, though the Federal Reserve System is oriented toward ease, it's not for me to say that their policy at the present moment can be considered an unqualified success. I mean, we have the ease. The stage is set. But it has been somewhat like pushing on a string. You can set the stage for more bank lending, but the businessmen have to develop some enthusiasm for this borrowing before the lending increases. So that is our limitation.

I'm sorry to have gone overtime, but I'm thankful that this lectern didn't bounce up and hit me on it. Then I'll be able to entertain questions later.

COL. COLMER: Dr. Arlt is ready for your questions, gentlemen.

QUESTION: Some years ago, when my mortgage was up for renegotiation, the bank told me that because of the increase in the rediscount rate, they were forced to raise the interest rate on my mortgage; but that if the rediscount rate were reduced at a later date, they would entertain a reduction in my mortgage. The rediscount rate has twice been reduced, but I haven't heard anything about reducing my mortgage.

DR. ARLT: Actually, that banker attached too much significance to the discount rate on the up side, and then chose to forget about it on the down side. We had, for instance, a commercial banker complain about the publicity which was given to the reduction of the discount rate recently. He said: "I don't mind your talking about the rise of the discount rate, but I wish you'd keep it quiet because my customers come in and ask me why my own rates haven't gone down as a result."

And actually, the commercial banks' lending rate is rather a sticky rate; and it tends to move up in the boom period when the credit demands are so strong that the commercial banks really have to fight off credit applicants with a baseball bat, and they can pick and choose, and the rates then tend to rise.

Now, however, in this down side, when the discount rate was lowered, the discount rate was lowered but that didn't mean that the commercial banks were in a particularly easier situation, because they were still in debt to the Federal Reserve System from the previous boom; and what they did was merely to continue to pay back their loans to the Federal Reserve bank, but not do much more lending. They didn't feel particularly easy, and they haven't felt particularly easy. Many banks feel that the proportion of loans to their total volume/liability is just about at the maximum. They talk about a loan-deposit ratio of 50 percent being just about as far as they can go.

Now, what can increase their deposits? Well, the only thing that can increase their deposits would be if the commercial banks were fed such a large amount of extra reserves that then the commercial banks, with the extra reserves, could go out in the market and buy securities. They would increase their total volume of deposit liabilities. And then the loan volume which they then have outstanding would be a smaller proportion of their total volume of deposits, and then they would feel freer to make more loans.

But they haven't reached the point where they feel as though they

would have to lower the interest rate. And I can understand your question, and the banker certainly was speaking out of turn when he said, "I will consider the possibility."

But the brief answer to this--and if I never seem to make brief answers, it's my college professor background--is that the discount rate on the down side does not automatically bring down rates. If anything, the discount rate follows all the other rates, because, for instance, all rates had gone downhill in 1960. The discount rate stood at 4 percent until June; then it dropped a ^{notch} to 3 1/2 percent, dropped another notch, to 3 percent in August. Rather than causing any change in the interest rate, due to decline in demand for credit, it followed whatever change had occurred in the interest rate, [^] The objective of getting the discount rate down, however, is to try to make it easier for commercial banks, if they want to borrow, to borrow from the Federal Reserve banks, and not hesitate so long in getting the reserves and maybe not try to sell securities in the open market, but actually go out and borrow from the Federal Reserve banks. When you lower the discount rate, that's supposed to encourage the member banks to do so, to borrow. But if the business demand isn't too strong, or if the commercial banks feel that they have made all the loans that they're going to make for a while, then they're not going to tend to go to the Federal Reserve bank and borrow and thus ease the credit situation.

QUESTION: A certain amount of excess reserves indicates strength in the banking system, but beyond a certain ^{point} _^ the excess reserves would indicate a weakness in the economy. What do you think that point might be?

DR. ARLT: Well, briefly, the excess reserves do not change very, very much. Even through booms and recessions, banks try to keep their reserves working. Excess reserves are inactive reserves as far as the banking system is concerned. The banking system is a private system, dedicated to profit; and they don't like to have excess reserves in any large quantity.

Thus the excess reserves won't get drastically large in a recession when the loan demand falls, because what the commercial banks will do is to reflect, when the loan demands have dropped to nothing, the commercial banks will turn around and put their reserves in Government securities. They buy Government securities. So on the asset side, the commercial banks, instead of having paper representing loans to businessmen, have Government securities; and they will be building up deposit liability that way. And therefore their excess reserves wouldn't increase rapidly in a recession. They make use of their reserves.

The smaller country banks don't make as active use of reserves as do the large city, money banks. And most of your excess reserves, actually, are piled in the rural areas. The big city banks rarely have any excess reserves, even in a recession.

QUESTION: How serious is this problem of the outflow of our gold to settle trade balances? And if it does reach serious proportions, what can the Federal Reserve do about it?

DR. ARLT: Well, in the first place, how serious? That's hard for me to define precisely how serious. I think that the problem has been magnified beyond its legitimate scope.

It is true that our balance of payments deficit, which has become somewhat chronic in the last ten years, and became more magnified in the last two years, has raised the question of what we should do if the gold flows out of the country.

The reason the gold flows out normally is that with this deficit in our balance of payments, in a sense what has happened is that our requirements that we pay to foreign countries have exceeded the requirements that foreign countries pay to us. Thus we have paid for this by allowing the foreign countries to develop much larger holdings of dollar balances.

The foreign countries have increased their short-term holdings of dollar balances up to, oh, 19 to 20 billions of dollars. When they acquire a sufficiently large volume of dollar balances, and if they have policies, as the central banks of Europe have policies, with respect to holding a certain proportion in gold and a portion in dollars, they start moving some of the gold out of the country. And as a result, our gold stock has declined from about 22 billion in late '57 to now about 19 billion today. We have lost about 3 billion plus in gold.

As I pointed out in my formal presentation this morning, we have, as far as the lending ability of the Federal Reserve System is concerned-- the Federal Reserve has a gold certificate reserve that is still far in excess of what it needs to support the given money supply. We could lose more

gold and still satisfy the lending requirements of the Federal Reserve System.

It could also be true that if we got down to the point of the Federal Reserve not having any more than just 25 percent in their holdings of gold certificates, there is the possibility--we've done it before--of lowering the legal reserve requirements of the Federal Reserve System from 24 to maybe 10. Rarison, of the Manufacturers Trust Company of New York, has suggested that maybe we shouldn't have any gold certificate requirement; that we don't need it. The Federal Reserve System doesn't need a governor or a ceiling on what they can do, because they are a non-profit institution, dedicated to the stability of the economy, and they turn over whatever earnings they make in their securities transactions to the Treasury anyway. So they're not going to exploit the fact that there is no gold certificate requirement, if a law were passed that there would be none.

So there are those possibilities, which give us some flexibility. At the same time I grant that as a long-run problem we probably have to face up to the idea that this deficit is something that isn't manageable at the level of 3 or 4 billions of dollars. It may be manageable at one billion, but the balance of payments deficit is not manageable at 3 or 4, because they are always worried about the confidence of the foreigners in our fall dollar. Those who say this, though--that if the interest rates--and they have fallen in the United States relative to foreign countries--people look around and say: "My gosh, I'm going to move my dollar balance out of the United States and convert it into gold, and move it over to foreign countries,

and then invest it in the money market of foreign countries." Some of that has taken place. Many people say that more of it is going to take place.

Now, the statistics would seem to indicate that there isn't going to be a wholesale withdrawal of dollar balances from the United States, because of the fact that if international trade is going to be a continuing phenomenon, the foreign countries must have dollar balances in the United States for working purposes.

I might also add that if you are thinking of some panicky withdrawal of gold from the United States by individuals, that can't be done. The Treasury does not sell gold to private individuals. The Treasury will only sell gold to central banks^{and} official foreign institutions. And if that private individual wants to get out a dollar balance, he sells it to his own central bank; and then it's up to the central bank to determine whether it wants to convert dollar balances into gold and move it out. And I would submit that the necessities of international trade are such that we have no worry about any wholesale withdrawal of dollar balances.

Now, when I say we have no worry, that assumes that at all times we in our country will give the appearance of what we might call monetary soundness, a good, strong economy, not suggest for one minute to the foreign nations that we're about ready to collapse.

And also I suppose we must recognize the importance of what we call fiscal discipline. When we run terrific deficits in our fiscal policy, that makes foreigners a little bit upset at times. If they get too much upset,

they might pull some money out, because they may think that we're going to have an awful inflation here and things are just going to pot. So we must have fiscal and monetary discipline in our country.

I assume that we shall have those. And with that I would say the problem has been magnified in excess of what it should be. But I do not say that it isn't a problem. It is a problem that we can work on. And it raises a lot of political questions. Should we continue foreign aid and things like that, which represent part of the balance of payments deficit.

It's not for me as an economist or an official of the Federal Reserve System to make any editorial comment on foreign aid. I think the foreign aid program is something that counts in terms of our foreign policy, and maybe we should be willing to pay the price for it. I'm not in my own book willing to say: "Let's give up foreign aid merely to ease our balance of payments, or raise tariffs to ease our balance of payments." These things I would spurn immediately.

QUESTION: What are the terms of the reserve requirements for member banks? You mentioned 40 percent.

DR. ARLT: There is an approved ratio.

QUESTION: The other thing I wanted to ask was, How close to the legal reserves actually do banks come? In other words, as I understand it, some banks, we will say that the requirement is 15 percent, will keep actual reserves of, say, 16 percent for fear that the Federal Reserve will change the requirements, and if they move up, they would have to liquidate some of their assets.

DR. ARLT: First the question about the reserve requirements.

Banks right now are classified in three categories by the Federal Reserve System--central reserve city banks, which are the money market banks of New York and Chicago. Then you have the reserve city banks in all the other major cities. And then we have the so-called country banks. That's an unfortunate term--"country banks". It has a distasteful connotation. And "jerkwater" doesn't help either. You have those three classifications.

Now, for the central reserve city banks, the New York and Chicago banks, just recently the reserve requirements were reduced to 17 1/2 percent. For the reserve city banks the required reserve ratio against demand deposits is 16 1/2 percent. For the country banks it is 11 percent.

These are the minimum levels at the moment. You'll need a floor for the maximum that they could drop. The maximum that you could reduce the reserve requirements would be now 10 percent. They can go up as high for Federal Reserve city banks and Reserve city banks as 22 percent of their demand deposits, and for country banks as high as 14 percent. Those are the legal reserve requirements.

In answer to your question whether they keep a lot of reserves on hand over and above their legal requirements, for the central reserve city banks, no. Very rarely. They just hew right close to the line. They've got sharp pencils and they don't like money sitting around doing nothing. They want to lend it out in investments.

In answer to the gentleman on the other side of the room, the excess reserves that we do have are concentrated in the so-called country banks.

Maybe right now there are about 400 millions of dollars in excess reserves, largely concentrated in the country banks.

Some of them are so far removed from their Federal Reserve bank that their connections are rather long-delayed, and they can't get cash when they want it. So they may decide to hold more reserves on hand. And some of them feel as though they don't want to do any more lending. But generally they won't hold excess reserves in any large amount.

COL. COLMER: Dr. Arlt, your lecture was very fine; so good, in fact, that I'm sure you could keep them all awake even after lunch. On behalf of the Commandant, the faculty, and the student body, I want to thank you very much.

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