

THE BANK CAPITAL PROBLEM

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Lecture by Dr. Edison H. Cramer, Chief of the Division of Research and Statistics, Federal Deposit Insurance Corporation, before the National Association of Accountants, Charleston Chapter, Charleston, South Carolina, February 13, 1958.

As Ken Foote said in introducing me, I was born and raised in the State of Michigan. By birth and early environment I would certainly qualify for the term "Damyankee", which you are supposed to call everyone from north of the Mason-Dixon line. But I have lived in Virginia for a decade, and am beginning to act, if not talk, like a Southerner. In fact, last year when I was in Michigan driving along the highway looking at the countryside where I spent my boyhood, another car pulled alongside and a youth shouted "Rebels!" Thus it appears that a license plate is all it takes to change one from a "Damyankee" to a "Rebel" and vice versa, and that is the way it should be.

When Ken first asked me to speak to this group of accountants on bank capital, I was tempted to suggest some other topic. I thought of all the attention that has been focused on this subject in recent years, and at first I could think of little new to say. Then it occurred to me that the basic cause of inadequate bank capital can best be expressed in accounting terms. Moreover, this is one aspect of the bank capital problem that has received very little attention. So tonight most of my discussion will be in terms of debits and credits and

will be concerned with why bank capital tends to be inadequate. Then I will close my talk with a brief discussion about the importance of adequate bank capital.

The bank capital problem is both old and unique. An examination of statements made by State bank supervisors at various times in the first half of the nineteenth century reveals that they also were dealing with this problem. As a matter of fact, many of the early regulations with respect to bank operations represented an attempt to make certain that bank capital was sufficient for the business done by the banks. For example, restrictions on the total volume of bank loans were typically expressed in the form of a multiple of capital.

The bank capital problem is unique because of our system of fractional reserves, which permits banks to acquire earning assets without increasing their capital investment. For the most part, other business enterprises cannot do this. For example, if a manufacturer wishes to increase output by increasing plant capacity, he can only do so by selling stock, retaining earnings, or by borrowing. On the other hand, unless limited by their reserve position, banks can acquire assets by increasing their deposits, usually with little or no increase in interest charges. That is to say, the main factor limiting the acquisition of assets by a bank is its reserve position, not its capital structure. That is why nearly every issue of the "American Banker" presents some argument why the Federal Reserve should reduce reserve requirements and little or nothing is said about the need for more bank capital.

In order to explain the importance of reserves in banking I have prepared a series of five tables. The top section is a very condensed statement of condition, or balance sheet, of all the banks that are members of the Federal Reserve System, and is the same for all five tables. While I have taken some liberties with the actual figures in order to make them easier to work with, they are essentially the same as those reported at various times last year.

Now let us turn to Table 1. You will see that I have combined the items that customarily make up the asset side of a bank's balance sheet into three main categories, with one of them, legal reserves, subdivided into required reserves and excess reserves. The other two items are: Loans and investments, which is self-explanatory; and other assets, which includes such items as cash in vault, cash balances with banks other than Federal Reserve banks, banking house, and furniture and fixtures. The liabilities are condensed into three items: Deposits, capital funds, and other liabilities.

As you doubtless know, the Federal Reserve authorities must require member banks to keep between 7 and 26 percent of their demand deposits and between 3 and 6 percent of their time deposits on deposit with their respective Federal Reserve banks. These are called legal reserves and at the present time the requirements for demand deposits are set at 20 percent for New York and Chicago banks, 18 percent for banks in 49 other reserve cities, and 12 percent for all other banks. For time deposits, a 5 percent reserve has been set for all banks irrespective of location.

A little arithmetic will show that, for the figures in Table 1, legal reserve requirements average exactly 12 percent ( $\$20.4 \div \$170.0$ ) of total deposits. I changed the reported figures a little to make the percentages come out even. I also eliminated all excess reserves. Recent figures show that average reserve requirements are about 11.5 percent of total deposits and excess reserves about a quarter of a billion dollars. The point I wish to make is that while the figures in these tables are not precisely accurate they are sufficiently close to reality to serve the purpose for which they are intended. Being for banks that are members of the Federal Reserve System they represent about 80 percent of the totals in the commercial banking system but only about one half the number of banks. Furthermore, it must be remembered that the relationship of the various items to total footings may vary substantially from bank to bank.

Acquiring assets by a reduction in reserve requirements. The banking system as shown in the first part of Table 1 cannot make any more loans or purchase any more bonds. Even if other assets amounting to \$26.6 billion contained a substantial amount of cash in the vaults of banks, it would not be possible for the banking system to acquire and hold more loans and investments. For when a bank makes a loan it customarily debits "loans" and credits "deposits". Even if a borrower should take his loan in currency, as soon as he spends the proceeds of the loan, the recipients would deposit it in their banks. Then, because the deposits of these banks would thereby increase, they would have to relinquish enough assets to acquire the necessary reserves,

and the banking system would be back where it started. The only way cash in vault could be used in making loans would be for some of it to be sent to Federal Reserve banks to build up the reserve position of the member banks.

The position of the banking system as shown in Table 1 illustrates the tight money policy of the Federal Reserve System that we have been hearing so much about in recent months. Reserves have remained practically unchanged for about two years, and excess reserves have been negligible. Much of the time during the last two years, member banks as a whole have been in debt to the Reserve banks in an amount greater than their excess reserves.

Now let us assume that the Central bank deems it appropriate to permit a growth in deposits, and changes to an easy money policy.

(1) The Central bank reduces required reserves on the average by 1 percentage point--from 12 to 11 percent. The banking system in effect will make these journal entries:

Excess reserves	\$1.7 billion	
Required reserves		\$1.7 billion

Required reserves are now \$18.7 billion or 11 percent of total deposits of \$170.0 billion. This is shown in part (1) of the table.

(2) With excess reserves of \$1.7 billion, commercial banks will be induced to make loans and buy bonds because income will be increased thereby. They can continue to create deposits by acquiring such assets until they are again making full use of their new reserve position. Hundreds of thousands of transactions by probably all

commercial banks can be summarized by these journal entries:

Loans and investments	\$15.4 billion	
Deposits		\$15.4 billion
Required reserves	\$ 1.7 billion	
Excess reserves		\$ 1.7 billion

The resulting balance sheet is shown in part (2) of the table.

Acquiring assets by open market operations. You may wonder how commercial banks acquire their reserves in the first place. For the most part, they come from the open market operations of the Federal Reserve System. Whenever a Federal Reserve bank acquires an asset, it is paid for by a draft on itself. These drafts are then deposited in member banks, which in turn deposit them in a Federal Reserve bank. Normally a bank would not request currency, because it would want no more cash in its own vault than it needs for conducting its day to day operations. Therefore, the funds would be left on deposit with the Central bank and would thus increase the reserves of the banking system.

Now let us turn to Table 2. This table starts out the same as the first one and is designed to show what happens when the Central bank acquires assets from nonbank investors without any change in reserve requirements.

(1) Let us assume the Central bank acquires \$2.1 billion government bonds from nonbank investors. The journal entries for the commercial banks would be:

Required reserves	\$0.3 billion	
Excess reserves	\$1.8 billion	
Deposits		\$2.1 billion

The foregoing entries would result from nonbank investors depositing the drafts drawn on the Central bank with their commercial bank, which in turn would deposit them with the Central bank. The results are shown in part (1) of the table.

(2) The member banks having acquired excess reserves can now expand their deposits by acquiring assets until their reserves are equal to 12 percent of their deposits. These transactions can be summarized as follows:

Loans and investments	\$15.4 billion	
Deposits		\$15.4 billion
Required reserves	\$1.8 billion	
Excess reserves		\$ 1.8 billion

The result is shown in part (2) of the table. You may wonder why the increase in loans and investments was again \$15.4 billion. Without going into the algebra involved, the answer is that I chose the figure \$2.1 billion so that this would be the result.

$$\sqrt{20.4 + X = .12 (170.0 + 15.4 + X)}$$

Table 3 illustrates the purchase of the same amount of bonds from the member banks, and its only purpose is to show that it makes no difference whether the Central bank acquires assets from banks or from nonbank investors. The statement of condition in part (2) is the same in both Table 2 and Table 3.

Acquiring assets by discounting with Central bank. There is one other method whereby the Central bank acquires assets for the purpose of increasing commercial bank reserves. It can encourage member banks to borrow from it by reducing the discount rate or otherwise making the terms more favorable upon which it makes loans to them. Table 3 illustrates this method for increasing the reserves of commercial banks.

(1) Assuming the Central bank is willing to discount loans for the member banks, they are likely to do so because by borrowing only \$1.8 billion they can acquire \$15.4 billion additional assets. The journal entries for borrowing \$1.8 billion would be:

Excess reserves	\$1.8 billion	
Borrowed money		\$1.8 billion

The effect on the statement of condition of the banking system is given in part (1) of the table.

(2) The member banks having acquired excess reserves of \$1.8 billion can now increase their deposits by \$15.4 billion through the acquisition of that amount of loans and investments. The journal entries for these transactions would be as follows:

Loans and investments	\$15.4 billion	
Deposits		\$15.4 billion
Required reserves	\$ 1.8 billion	
Excess reserves		\$ 1.8 billion

The result is given in part 2 of Table 4.

Before leaving this discussion of the methods available to the Central bank for increasing the effectiveness or volume of bank reserves, it should be pointed out that the same tools can be used to decrease reserves. That is to say, raising reserve requirements or

relinquishing assets by selling government bonds or reducing loans to member banks forces banks to reduce deposits by disposing of some of their assets.

Acquiring assets by increasing capital. Now let us turn to Table 5 and examine another way commercial banks could increase their loans and investments by \$15.4 billion.

(1) Starting from the same situation as given in the other tables, the commercial banks could decide to expand their loans and investments by selling additional capital stock. But see what this requires. In the first place no new reserves are brought into the banking system because the stock sold will be paid for by checks drawn on deposit accounts already in the banking system. We can summarize the sale of \$15.4 billion of stock by the following journal entries:

Deposits	\$15.4 billion	
Capital funds		\$15.4 billion

This will reduce total deposits to \$154.6 billion, and with reserve requirements remaining at an average of 12 percent, the following journal entries are possible:

Excess reserves	\$1.9 billion	
Required reserves		\$1.9 billion

The result of these entries are shown in part (1) of the table.

(2) Excess reserves of a little less than \$1.9 billion, make it possible for banks to create deposits by acquiring new assets. These transactions can be summarized as follows:

Loans and investments	\$15.4 billion	
Deposits		\$15.4 billion
Required reserves	\$ 1.9 billion	
Excess reserves		\$ 1.9 billion

See what this has done to the balance sheet. Deposits are the same as they were at the beginning, but capital funds have more than doubled. To be sure earning assets have increased the same as capital, but bank earnings will have to be spread over a capital base more than twice as large as it was before. Is it any wonder that bank management is reluctant to increase bank capital, when assets can be acquired by a moderate reduction in reserve requirements or by the Central bank acquiring assets either through open market operations or through lending to the banks?

Now let us summarize the operation of the banking system as illustrated by the foregoing journal entries and the resulting statements of condition as given in the tables.

It is clear that bank capital has little effect on the scale of operations of the banking system. This is illustrated by the fact that between the end of 1941 and the end of 1947, capital funds of Federal Reserve member banks increased from \$5.9 billion to \$8.5 billion (44%), but total resources increased from \$68.1 billion to \$132.0 billion (94%). The increase in total resources was made possible by using excess reserves of \$3.1 billion in 1941 and an increase of reserves of \$5.3 billion. This increase in reserves was largely the result of the acquisition of government bonds by the Federal Reserve System. To repeat

what I said in the beginning, the main factor limiting the acquisition of assets is the reserve position of the banking system and not its capital structure.

The importance of bank capital. Now I want to discuss the reasons why so much attention has been focused on the bank capital problem throughout the years. There are two major reasons for assigning to bank capital a considerable degree of importance: first, it has the function of serving as a cushion for depositors in the event of a depreciation of bank assets; second, it represents the extent to which individuals are willing to risk their own funds in an industry which has many of the attributes of a public utility.

The first reason, of course, is well understood and I will not dwell further on it except to add a historical note which may be of interest. When banking began in the United States in 1781, bank capital was considered more of a revolving fund out of which loans would be made to stockholders than as ultimate security for the protection of bank creditors. This was because the first banks were typically formed by merchants "clubbing together a capital"--to use an expression of Robert Morris--for the purpose of making available to the merchant temporarily in need of funds the temporary surplus of other merchants. However, only a few years were to pass before fractional reserve banking became important and banks began to serve the credit needs of their respective communities rather than only those of the individuals who had subscribed the original capital.

As banks acquired assets by making loans and otherwise serving the credit needs of their communities, they also acquired liabilities other than capital funds. Thus, in addition to the capital that was "clubbed together" for making loans, capital was needed to assure the safety of the liabilities. Moreover, these liabilities, either in the form of bank notes or deposits, became the major portion of the money supply of the country. This leads us to the second reason for the importance of bank capital.

When I mentioned that the banking industry has many of the attributes of a public utility, I was referring to the fact that it is charged with performing a function essential to the welfare of the nation. That is, it provides the major portion of our money supply, or what is frequently termed our medium of exchange or our circulating medium. In other words, acquisition of earning assets by the banking system in most instances, results in an increase in the nation's circulating medium. Likewise, a contraction of earning assets held by the banking system, in most instances, results in a decrease in circulating medium. At the close of 1956 deposits adjusted and currency--a commonly accepted measure of the volume of circulating medium--was about \$222 billion. It consisted of currency outside banks of \$28 billion, plus total deposits adjusted of \$194 billion, of which nearly \$2 billion was postal savings deposits. Of the deposits in banks, less than a third was offset by currency in banks, bank reserves, and other cash items. The major portion was represented by earning assets held by the banking system. When these earning assets were acquired, bank deposits--circulating

medium--were created. This is the process that was illustrated by the tables.

I emphasize this money-supplying function of the banking system because all of the restrictions, regulations, and supervision under which banks operate stem from it. The Constitution of the United States imposes upon the Congress the responsibility of controlling the nation's supply of money and regulating its value. I think we all agree that it is to the best interest of the nation that the creation of circulating medium is largely the function of a privately owned and managed banking system. Yet it is this very aspect of banking which makes it necessary to have bank supervisors and causes them to be concerned with the adequacy of bank capital, for an unsafe banking system means also an unsafe circulating medium. I might add parenthetically that this is the basic justification for Federal deposit insurance.

For this reason bank capital should be of concern not only to the supervisory authorities but to all those who believe that banks have fulfilled, and are fulfilling, their essential monetary function in such a fashion as to justify a continuation of our free enterprise unit banking system. But it must be remembered that the question has arisen, and continues to arise, whether a private banking system should be entrusted with influence over the circulating medium. Certainly those of us who are interested in preserving and strengthening the American banking system are placed on the defensive when critics point to the fact that the equity of bank owners is becoming thinner and thinner as their responsibility to the nation becomes greater and greater.

This philosophy of bank capital as the justification for entrusting to a private banking system a function that is basically governmental, is the main reason for expecting banks to maintain an adequate capital structure. They should be anxious to do this even though it might be more profitable for them to trade on a thinner equity than is needed to assure depositor safety.