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Part I

Nature and Significance of Bank Liquidity

In the everyday usage of bankers the term "liquidity," when applied to bank assets, relates to the possibility of converting assets into cash without serious loss of time or money. When applied to a bank it refers to the extent, relative to the volume and character of liabilities, to which the bank holds assets that are either in the form of cash or readily convertible into cash without material loss.[1]

In many situations, the cash obtainable from liquid assets is of secondary importance, as is shown by the fact that a short-term asset may be bought with the intention of replacing it with another as soon as it matures, and so on indefinitely. This is typical of bank loans at the present time. The cash itself is not retained or even desired; there would be a saving of much effort if a longer-term security were bought in the first place and possibly a higher return would be realized in addition. But what is gained – and what makes the extra trouble and the lower return seem justified – is the fact that the asset is safeguarded against substantial shrinkage, however temporary, in its capital value.

In the final analysis, however, the liquidity problem of banks is primarily and basically the problem of assuring that there will be an adequate amount of cash on hand, when needed, to meet all demands for cash. The task of providing sufficient cash presents itself in two ways: the individual bank, if it is to stay in business, must be able to meet all demands for cash including those resulting from the transfer of money to other banks in the system; and banks as a whole must be able to supply whatever demands are made upon them for the purpose of drawing money out of the system, whether abroad or for use in domestic circulation. While a drain of cash out of the banking system necessarily involves the withdrawal of funds from some individual bank or group of banks, a withdrawal from an individual bank, which may simply represent a transfer of

1 Distinctions in terminology and theory bearing on the meaning of liquidity are elaborated in an appendix at the end of this section, p. 9 ff.

funds to other banks, does not necessarily involve a withdrawal from the system.

The problem of the liquidity of the banking system as a whole entails questions involving general governmental and fiscal decisions as well as central banking policy and procedure. But it is the liquidity of the individual bank rather than of the banking system that concerns the great majority of bankers most frequently and most directly. Even those aspects of the problem which involve all banks have their focus in the affairs of the individual banks. Whether a drain of cash is from the banking system as a whole or only from a single bank in the system, its immediate manifestation is the withdrawal of deposits from some bank or group of banks. Likewise that part of the liquidity question which relates not so much to providing cash as to arranging the maturity distribution of earning assets in such a way as to avoid undue depreciation, is also a subject calling for decision by individual bankers.

LIQUIDITY OF THE INDIVIDUAL BANK

The fundamental task confronting any bank is to keep the value of assets equal to the value of liabilities. The bases of this problem are a reflection of the characteristics of the banking business. In contrast with other middlemen, the banker holds few assets of a tangible sort; his resources consist predominantly of the debts of businessmen and the government. At the same time he owes very large sums to the public in the form of time and demand deposits. The demand deposits carry the obligation to pay cash whenever it is requested, while on time deposits a short period of waiting is allowed by law but is seldom invoked.

The bulk of a bank's liabilities, then, are subject to payment on call, and it is essential that at all times the resources of the bank provide the means for meeting demands for cash as they are made. It might appear that this would require banks to hold against these liabilities resources which are also payable on call. As banking is carried on today, an exact balancing of the maturities of assets and liabilities is not feasible. Fortunately it is also not necessary, since there is not the slightest likelihood that the depositors' legal rights to early payment will be fully exercised.

While the banking problem nominally embraces all liabilities, it is the bank's liabilities to the public rather than to its stockholders

that constitute the primary consideration. If liabilities in the form of capital accounts are not covered by assets it is unfortunate for the stockholders, but that is a normal business hazard attaching to participation in any enterprise. If depositors lose, on the other hand, it is much more serious since this represents the failure of a vital part of the monetary mechanism, and may entail indefensible hardships to the bank's customers and impair the efficient working of the entire economy.

In practice the task of balancing assets and liabilities divides itself into two parts, the long-run and the immediate. The long-run phase relates to total assets and liabilities. It is the problem of *solvency* in the literal sense of dissolubility, i.e., could the affairs of the bank be wound up without loss to anyone? The short-run phase relates to liquid assets and liabilities, meaning by liquid liabilities those that are liquid in fact rather than merely in form. This is the problem of *liquidity*, of being able to meet all demands for cash as they are presented; it is important at all times, since failure to remain in a position to meet all claims as they are presented leaves the bank with no alternative but to close its doors. The long-run problem is of concrete significance only if it is desired to close out the bank. It is possible for a bank to be temporarily in a position where its assets at current market valuations fail to cover liabilities. Such a situation might develop as the result of a sharp recession in business activity such as occurred in 1920-21, a drop in price of farm land as in the twenties or a drastic decline in security prices such as followed the 1929 crash.[2] By continuing operations until there is a recovery in business conditions, the situation of technical insolvency may correct itself. Ordinarily the chief importance of the long-run banking problem is indirect. That is, a satisfactory solution of the immediate or short-run banking problem may depend upon a successful handling of the long-run problem.

The basis of an attack upon the fundamental banking problem is suggested by its definition. Since the objective is to keep assets equal to liabilities, the problem may be approached from the side of assets or of liabilities, or of both assets and liabilities. In the long run the problem of keeping assets equal to liabilities applies to all assets and liabilities; in the short run it is a matter of effecting

2 The relative importance of loans or securities in the composition of bank portfolios would help to determine which of these hazards was the more serious.

a suitable balance between liquid assets and liquid liabilities. The maintenance at all times of a balance of this short-run character is the essence of any solution of the liquidity problem.

LACK OF UNIFORMITY AMONG BANKS

For any individual bank the problem of liquidity is of a compound character. It entails the provision of adequate cash as it is needed, the spacing of the maturities of income-yielding assets to meet future demands for cash and the realization of as high a net income as is consistent with safety. A solution of the problem is rendered more difficult by the variation that exists among banks.

Some banks are so large that their officers hesitate to rely on sale of securities as a means of obtaining additional cash for fear this might jeopardize the stability of the security market. Accordingly a relatively large portion of assets may be held in the form of cash and of securities convertible into cash without resort to sale in the open market. A small bank can plan, to a degree that a large bank possibly cannot, upon the shifting of assets as a means of obtaining necessary cash.

Banks differ markedly, also, in the character of their deposit liabilities. A bank with large bankers' balances or with deposits of large corporations or governmental agencies must be prepared for pronounced fluctuations in their amount. A bank with a high proportion of time deposits, or a neighborhood type of bank with numerous small demand deposits, will normally be subject to little net change in deposits. Furthermore, the size of deposit accounts ordinarily bears a direct relation to the susceptibility of deposits to contraction of the sort that occurs when a bank is in difficulties. A study of the experience of a group of banks which failed just prior to the banking holiday of 1933 showed, for example, that deposits of $25,000 and up decreased 64 percent, and those under $500 by 6 percent. For deposits under $200 the shrinkage was negligible. Among different types of depositors the decrease was greatest for interbank deposits.[3]

Within a particular city there may be business banks with a relatively small number of accounts of large average size, other banks primarily engaged in trust operations, and still others with a large

[3] *Federal Reserve Bulletin* (March 1939) pp. 178-81. The reduction in size of larger accounts may have helped, by bringing them into lower size classes, to maintain the averages of the smaller accounts.

volume of personal accounts. It is not even possible to generalize between city banks and country banks. Two adjoining banks in the same town may have distinctly different types of business. There are large banks, even in New York City, that are much closer to what is generally thought of as a country bank than they are to the conventional pattern of a big city bank.

A bank has to consider not only the normal behavior of its deposit accounts; it must also take into consideration the preferences and prejudices of its customers. A bank may hold large amounts of cash and highly liquid assets, not because it has any expectation of needing them, but merely because it believes that large depositors would transfer a substantial proportion of their funds elsewhere if it were to maintain a less liquid policy than other leading banks.[4] The extent to which a bank will be affected by this possibility of transfer is influenced both by the type of deposits it holds and by the practices being followed by other banks at the same time. A bank that has national accounts has more to fear from a loss of deposits than another whose accounts are locally held. However, any bank has greater latitude in reducing its own liquidity when other banks are reducing theirs, for there would be less reason to transfer deposits on the ground that other banks are more liquid. Moreover, the fact that the action is general helps to overcome the prejudice against a particular bank's following such a policy.

The location of a bank may have considerable bearing upon its probable liquidity requirements. A bank in a community experiencing a sudden boom may be faced with a drain of funds if the boom collapses and will, therefore, need to be in a position to provide cash in larger amounts than a bank in a community where conditions are more stable. At one time funds may show a tendency to move toward an industrial or agricultural community, and at another time or under different conditions they may move toward a financial community. Conditions may change because of seasonal or cyclical reasons, a war boom, security or real estate speculation — because of anything, in fact, that causes business conditions to behave differently in one part of the country from what they do in

[4] Assuming that the bank is correct in this belief, the maintenance of the liquidity of assets is a means of restricting what has been referred to as the liquidity of liabilities. In such a situation a change in the liquidity of assets is inversely related to the liquidity of liabilities, i.e., the more liquid assets become the less liquid are liabilities and vice versa.

another. Minor differences may arise from such factors as the strength of its relations with other banks and whether or not it is near a Federal Reserve Bank. Not all of the regional differences in liquidity requirements can be accurately foreseen. In periods of boom or depression, moreover, the same forces that confuse the judgment of other businessmen also assail the bankers, as experience demonstrated after the last war and during the Florida real estate boom in the middle twenties. Adaptation to regional differences is rendered particularly difficult by the fact that the policies of similar banks in other areas become an entirely untrustworthy guide.

Differences in policies with regard to liquidity appear to be influenced in some degree by the earnings position of banks. The determination of a bank's portfolio policy requires a balancing of its need for cash and its need for income: a bank may fail through either an overestimate or an underestimate of its future liquidity requirements, since the one might lead to inadequate income and the other to inability to meet its obligations. A bank that anticipates a decrease in earnings may, for that reason alone, assume a less liquid position, while another whose earnings outlook is satisfactory may remain as liquid as before.

The lack of uniformity in policies followed can be explained only in part by differences in the characteristics of individual banks. To a considerable extent it is attributable to the influence of strong-minded bankers, who have their particular ideas as to how banks should be run. Few of them stand out as conspicuously as the famous exponent of liquidity, "100-percent" Nichols, head of a suburban bank in the Chicago area, did a few years ago, but it is safe to say that scores of bankers have put their individual impression on their banks as definitely, if less dramatically, as Mr. Nichols did on his.

There is no precise formula for providing liquidity of assets. One bank may hold a large proportion of short-term assets and relatively small amounts of cash and long-term securities; and another may follow the opposite policy, holding a considerable share of its assets in long-term form and relatively little in short, relying on large holdings of cash to provide the requisite liquidity. A great variety of combinations can be, and in fact are, used to give the desired liquidity and yield. The most usual practice, however, is for a bank to hold a moderate amount of cash to meet reserve requirements

and working cash needs, a considerable volume of short-term securities and most or all of the remainder of its earning assets in medium-term securities with possibly a small quantity of long-term bonds.

Further examples will serve to illustrate the variety of policies followed by banks:

> A Florida bank held approximately equal amounts of cash and government securities maturing in twenty years or more and virtually no short-term or medium-term assets. The large holdings of cash were relied upon to give whatever liquidity was required, their high degree of liquidity compensating for the limited liquidity of the long-term securities. At the same time, the higher yield on these securities was counted on to make up for the large proportion of assets yielding no income, and to result in a higher average return than would have been obtained from following a more conventional portfolio policy.
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> In a large city in the east at the end of 1943 one bank held over 70 percent of its Treasury securities in maturities of over five years, while another bank held less than 14 percent in maturities of that length. In the same city ratios of capital funds to total deposits ranged from 4 percent to 12¾ percent.
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> One bank with large corporate deposits has a record of the minimum amount of each balance prior to the banking holiday of 1933. On the ground that funds that did not go out at that time can be counted on to remain, the bank makes it a policy to cover everything in excess of this minimum with highly liquid assets.
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> Another large bank estimates, largely on the basis of past experience, the minimum amount to which particular accounts or groups of accounts may fall in the course of a year. It computes the sum of these minimum balances and then follows the practice of covering everything above this total with highly liquid assets. While admitting that the shrinkage in balances would not all occur at the same time, the practice is nevertheless defended on the ground that this fact provides an added element of safety.
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> There are four banks of approximately the same size in

a certain New England city. In June 1943 one of the banks held Treasury obligations amounting to $514,000 and loans and discounts to $1,793,000 out of total assets of $3,003,000. Another of the banks had just the opposite distribution of assets, with Treasury obligations amounting to $1,392,000 and loans and discounts to $643,000 out of total assets of $3,716,000. Contrary to what might be expected, the first bank was a savings bank and trust company while the other was not.

A bank in a farming community of 2,000 held aggregate deposits at the end of 1942 amounting to $1,126,000, of which 86 percent were payable on demand. Assets included loans and discounts of $237,000; investments, chiefly government securities, of $249,000; and cash and due from other banks, $818,000. In this bank cash, including cash items and due from other banks, represented nearly 73 percent of total deposits. The ratio of cash to deposits in all country member banks was 32 percent.

In computing liquid assets some banks lump all government securities along with cash as liquid assets. Others include only those with maturities of one year or less as fully liquid.

The characteristics of the particular bank play an important part in the requirements and recommendations laid down by officials charged with the supervision and examination of banks. Under conditions prevailing today, no bank would be criticized for having too many government obligations in its portfolio. Examiners might suggest, however, that a different selection of maturities would accord more nearly with the bank's prospective needs. In determining their liquidity policies, bankers are obliged to assess the combined importance of such factors as a bank's size, location and type of business. These factors are likewise among the principal considerations upon which bank examiners and supervisory authorities base their recommendations.

Perhaps the most important single observation that can be made concerning the problem of liquidity of the individual bank is that there is no general solution, valid for all banks at any time or for any bank at all times. Liquidity is essentially an individual affair; it would be sheerest folly to attempt to set down a concise formula

that any banker could adopt. Moreover, no banker can count on assuring liquidity simply by adopting the policies followed by some other bank in which he has confidence. The liquidity problem presents itself in a wide variety of forms largely because banks differ so greatly in their basic characteristics.

APPENDIX

A NOTE ON THE MEANING OF LIQUIDITY

As used in financial discussions, the word "liquidity" is simply a figure of speech to which we have become so accustomed that we forget that it is a figure. By analogy, money is the equivalent of a liquid. Cash is identified with complete liquidity; degrees of liquidity of assets correspond to the extent to which assets approach equivalence with cash. The test of this equivalence is the certainty of being able, in case the need arises, to exchange assets for money without delay and without "material" diminution of the value at which the assets are carried on the books of the bank. The same figure of speech is implicit in a number of related expressions, such as "liquidation," "frozen credit" and "thawing out of bank loans."

In technical economic literature the term "liquidity" is frequently used in a specialized sense embodying a particular conception of how banking should be carried on. This usage was employed by spokesmen for the Banking School which played an active part in monetary controversies a century or more ago. In recent years it has been reformulated and reemphasized in the writings of the late Professor H. Parker Willis and his associates at Columbia University. This usage identifies liquidity with the granting of credit through the purchase by banks of "self-liquidating commercial paper." By this is meant short-term obligations that originate in commercial operations whose completion provides the money for their discharge.

Since 1930 a great deal of discussion has centered about the relation of liquidity, and more especially "liquidity preference," to interest theory and the theory of money. Without entering into the controversy associated with liquidity preference, it is worth reiterating that the familiar generalization that short-term securities command a lower rate of interest than long-term securities does not hold

true historically. On the basis of data for the first quarter of each year it appears that from 1900 to 1930 the short-term interest rates were perceptibly below the long-term rate in only one year.[5] At one time it was argued that the short rate should be higher than the long rate because investors had to be compensated for the trouble and expense of reinvesting money put out at short term. This theory of "illiquidity preference," and perhaps also the idea of liquidity preference, would seem to be in considerable part a product of the conditions under which they originated. The validity of either as a universal generalization is clearly open to question.

The expression "liquid funds" is used to refer to cash or cash claims which are available, according to need, for such purposes as withdrawals of currency by depositors, meeting of increased reserve requirements (whether these arise out of a change in the legal ratio or a growth in deposit liabilities) and the provision of additional vault cash. "Liquid assets" is used more broadly to include high-grade earning assets of short maturity or assured convertibility.

"Liquid bank assets" have been defined by the Federal Reserve as follows: "From the standpoint of an individual bank liquid assets or secondary reserves include balances payable on demand, loans that may be readily called or sold in the open market without involving customer relations, and securities that may be sold without risk of material loss of principal. In general, such assets include most of the following: brokers' loans, bankers' acceptances, open market commercial paper, and short-term high-grade securities, as well as cash and balances with other banks." [6]

Any description of the liquidity of assets must assume some degree of orderliness in the conditions of liquidation. It is of little use to describe the liquid assets of a bank as "only those which can be converted into cash tomorrow morning without having to sustain a loss," or hold that no more of a bank's holdings of bonds should be included as liquid than could be sold without depressing the market.[7]

For groups of banks, or even for many large banks individually, so rigid a definition of the liquidity of bank investments is wholly artificial. It is very much like maintaining that grain dealers should

[5] See David Durand, *Basic Yields of Corporate Bonds, 1900-1942* (National Bureau of Economic Research. Technical Paper 3) pp. 16-19.

[6] *Federal Reserve Bulletin* (April 1939) p. 262.

[7] *Banking* (April 1939) p. 83.

value at the market price only that part of their stock of wheat which could be turned into cash at that price "tomorrow morning." Any valuation based on market price must inevitably assume the maintenance of some degree of order in the market, whether that orderliness results from the elasticity of supply and demand or is the consequence of control by the central authorities. The basis of liquidity in a free market lies largely in the possibility of a transfer of assets to other investors, total demand for the assets remaining approximately constant. In a market that is not free it may consist of the possibility of a transfer to some outside agency such as the central bank, or it may depend upon restraints on the exercise of the public's right to demand cash.

To the extent that the liquidity of particular banking assets is contingent upon their transfer to other banks, the liquidity of assets for individual banks is greater than for the banking system as a whole. At the present time the liquidity of bank assets is guaranteed by their shiftability to the Federal Reserve Banks. This meaning of the shiftability of bank assets is altogether different from that involved in the controversy over liquidity and shiftability before and after 1920. At that time the term shiftability was generally assumed to refer to the transfer of assets to commercial banks or other private investors. Today it is primarily concerned with transfer to the Federal Reserve Banks. As long as the Federal Reserve continues to provide a market for securities of the types held by banks, the liquidity of most individual banks and of the system of banks is assured.

The liquidity of particular assets is affected by the price at which they are carried on the books of the bank. If, for example, they were bought at a bargain or have been marked down sufficiently (as in the case of bank buildings), assets may be said to be liquid even though the market is very limited and sales would be at a much lower price than could have been obtained earlier. Thus the test of an asset's liquidity might be thought of as consisting, at any particular moment, of getting back a sum of money equal to the amount of the liabilities which the asset is calculated as offsetting on the balance sheet of the bank, or, alternatively, it could be said that the test of liquidity turns on recovering the money that was put in. The first of these usages is more pertinent to the problem of bank liquidity. Part of the value which the asset originally repre-

sented may have been offset by marking the asset down on the books of the bank, and the receipts that made this revaluation possible may have come from general profits rather than from the asset itself. In order, that is, for the asset to have liquidity it is not necessary to recover by sale in the market the full amount of money originally paid for the asset.[8]

Need for liquid funds may arise through either expansion or contraction of deposit obligations. An expansion of deposit calls for reserves because of the rise in reserve requirements, and additional amounts of cash are necessary if the volume of currency in circulation increases at the same time. A deposit contraction that has the character of a run, with deposits converted into currency which is held idle rather than deposited in other banks, creates a need for more cash: reserves decline by the same amount as deposits, thus lowering the ratio of reserves to deposits. A deposit contraction that is the result of repayment of sums borrowed from banks, on the other hand, increases the liquidity of banks: the decline in deposits lowers the reserve requirement without diminishing the amount of reserves; indeed banks' holdings of cash reserves may rise through the deposit of currency withdrawn from circulation.

It is not the total cash payments effected but the net withdrawal of cash that determines a bank's liquidity requirement. A bank that is constantly receiving and paying out cash in equal amounts will obviously have less need for liquidity than another bank whose total payments are not currently equalized by receipts. For the individual bank or for the system, liquidity requirements depend on the "peak load" of net withdrawals over the period for which reserves are averaged. The great difference between the individual bank and the banking system is that a large proportion of the withdrawals from particular banks will be lodged in other banks within the system, while only a relatively small part of debits to accounts in any individual bank will ordinarily be redeposited in that same bank.

There is another function of liquidity that may be more important than providing for an actual or potential need for cash, namely, to afford protection against a decline in the market value of the assets held. In the case of earning assets the protection given is

[8] This principle is recognized in the procedure known as "evaluation allowances." See below, pp. 36-37.

closely related to the fact that a liquid security is ordinarily readily convertible into cash. If it is known that a security can be, or automatically will be, exchanged for a definite sum of money within a short period of time, its market price cannot decline far below this amount; and likewise if the price of a security is stable (assuming that access to the market is reasonably free) it can be converted into cash at any time.

The possibility of a greater decline in the market value of securities with longer maturities may rest upon the risk of default or the risk of a rise in the level of interest rates. For long-term government obligations or any other security whose full payment when due is unquestioned, only the second factor is important. However, actually realized loss resulting from a decline in market value caused solely by a rise in interest rates would be avoided if the security were held until maturity. Under such circumstances an impairment of the capital value of assets would become effective only if bank officers were voluntarily to sell or write down securities according to their market price, or were forced to do so by examiners or other banking authorities.