Reserve Requirements Under the Depository Institutions Deregulation and Monetary Control Act of 1980

By J. A. Cacy and Scott Winningham

On March 31, 1980, President Carter signed into law the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA). The Act is perhaps the most significant package of financial legislation since the 1930s. It will promote competition, increase equity, and encourage efficiency within the nation's financial sector. Also, the new structure of reserve requirements mandated by the Act will improve the Federal Reserve's monetary control mechanism. This article focuses on the new reserve requirements and how they will improve monetary control.

THE STRUCTURE OF RESERVE REQUIREMENTS UNDER THE ACT

DIDMCA consists of nine parts, or titles. The first title prescribes rules governing reserve requirements as well as reporting requirements, discounts and borrowings, and the pricing of Federal Reserve services. The other titles of the Act provide for the phase-out of deposit interest rate ceilings, the spread of interest-bearing transactions balances, greater powers for thrift institutions, the preemption of various state-imposed interest rate ceilings, amendments to truth-in-lending laws and various national banking laws, and the simplification of existing banking regulations, among other things. This section of the article discusses the structure of reserve requirements created by Title I of DIDMCA and subsequently detailed in the Federal Reserve's Regulation D.[1]

The Act alters the previous system of reserve requirements with respect to both the types of institutions and the types of liabilities affected. Previously, only the deposits of member banks and Edge Act and Agreement corporations were subject to Federal Reserve System reserve requirements. Under the Act, all depository institutions' transaction accounts, nonpersonal time deposits including savings deposits, and various Eurocurrency transactions are subject to System reserve requirements.

Transaction accounts are demand deposits, NOW accounts, ATS accounts, share drafts, accounts subject to telephonic or preauthorized transfer, and other accounts used for making

J. A. Cacy is a vice president and senior economist and Scott Winningham is a financial economist, both with the Federal Reserve Bank of Kansas City.

[1] For a detailed description of DIDMCA, see "The Depository Institutions Deregulation and Monetary Control Act of 1980," *Federal Reserve Bulletin*, Vol. 66, No. 6 (June 1980), pp. 444-53.

payments.[2] The Act requires each depository institution to maintain as reserves 3 per cent of its first $25 million in transaction accounts. Such accounts in excess of $25 million are subject to a reserve requirement within a range of 8 to 14 per cent, initially to be 12 per cent. The $25-million breakpoint will be adjusted every yearend by four-fifths of the percentage change in total transaction accounts over the year ended the previous June 30. For example, if the transaction accounts of all institutions grew 10 per cent between June 30, 1980, and June 30, 1981, the breakpoint would be increased 8 per cent (.8 x .10) at yearend 1981.

The Act authorizes the Board of Governors of the Federal Reserve System to impose an additional requirement on transaction accounts of up to 4 per cent. This supplemental reserve would be maintained by a Federal Reserve Bank in an Earnings Participation Account which would yield interest during each quarter at a rate not more than the average rate earned on the Federal Reserve's securities portfolio during the previous quarter.

The supplemental reserve may be imposed only under certain conditions. First, at the time it is imposed, total basic reserves must be not less than the amount required assuming that the initial ratios specified in the Act were in effect. Second, five or more members of the Board must agree to impose the supplemental reserve. Third, the additional requirement can be imposed only for monetary policy purposes. Finally, before imposing the supplemental requirements, the Board must consult with the agencies that regulate other depository institutions.

Nonpersonal time deposits (NTD's) are time deposits that are transferable or that are held by a depositor other than a natural person. These deposits consist primarily of large certificates of deposit. Under the Act, NTD's are subject to reserve requirements within a range of 0 to 9 per cent. Initially, a 3 per cent requirement has been set for all such deposits with original maturities of less than four years. NTD's with longer maturities will be subject to a 0 per cent requirement.

DIDMCA also requires all depository institutions to maintain reserves against Eurocurrency borrowings and related transactions in such ratios as the Federal Reserve Board may prescribe. The Board has determined that reserves should be held against gross borrowings of U.S. institutions from related and unrelated foreign offices, loans to U.S. residents made by overseas branches of U.S. institutions, and sales of assets by U.S. institutions to their overseas offices. A 3 per cent reserve requirement has subsequently been established against these items, the same ratio as on NTD's with maturities under four years, so as to eliminate any artificial incentive that would favor raising funds offshore instead of in the domestic market.

Both member and nonmember institutions may satisfy their reserve requirements with vault cash or a Federal Reserve account.[3] Additionally, nonmember institutions may pass their required reserves through a correspondent reserve account held with (1) another institution that maintains required reserve balances with the Federal Reserve, (2) a Federal Home Loan Bank, or (3) the National

[2] The Federal Reserve Board has subsequently determined that institutions may establish special savings accounts where a depositor can make up to three telephonic or preauthorized transfers a month without triggering reserves on those deposits. The Board also exempted from reservable transaction accounts those accounts that just permit transfers to repay loans made by the institution itself. However, accounts that permit third-party payments through automatic teller machines or remote service units are subject to required reserves, the Board has ruled.

[3] Supplemental reserves held in the form of vault cash do not earn interest, however.

Credit Union Administration's Central Liquidity Facility.

To allow time for financial institutions to adjust to these changes, the new reserve requirements will be phased in gradually. The Act provides for an eight-year phase-in of reserve requirements for nonmember institutions. Specifically, the amount of reserves to be maintained increases by one-eighth of the total reserves that would otherwise be required for each 12-month period beginning September 1, 1980.[4] For example, if an institution's required reserves during a week in the first year after enactment were to be $64 million with no phase-in, then with phase-in its required reserves during that week would actually be $8 million [(1/8) x $64 million].

The Act provides for a 3 1/2-year phase-down of reserve requirements for member banks, beginning at the same time as the eight-year phase-in for nonmember institutions. In addition, any bank which was a member on July 1, 1979, but which withdrew from membership between that date and September 1, 1980, is treated as a member bank for the purpose of these transitional adjustments.

These phase-in procedures apply only to categories of deposits that existed as of March 31, 1980. Any new category of deposits authorized by Federal law after the date of enactment of DIDMCA is immediately subject to the full reserve requirements created by the Act.[5]

THE NEED FOR THE NEW RESERVE REQUIREMENTS

The new reserve requirements are needed to improve the Federal Reserve's ability to control the money supply. The effectiveness of the old structure of requirements in contributing to monetary control has been reduced in recent years by a number of developments. This section discusses these developments after briefly reviewing the role that reserve requirements play in the monetary control mechanism.[6]

The Role of Reserve Requirements

The role of reserve requirements in monetary control is to enhance the closeness of the relationship between the money supply and various "reserve aggregates"—the monetary base, total reserves of depository institutions,

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4 The Federal Reserve Board has subsequently delayed implementation of the phase-in until November 1980 for institutions with assets over $1 million. At yet a later date the Board will decide whether or not the 11,400 smaller institutions, mainly credit unions, will be covered or not.

5 For example, there will be no phase-in of required reserves behind NOW accounts outside of New England, New York, and New Jersey when these accounts begin to be offered at yearend 1980.

6 The review is based on the analysis and results of J. A. Cacy, "Reserve Requirements and Monetary Control," *Monthly Review*, Federal Reserve Bank of Kansas City (May 1976), pp. 3-13. It should be noted that, in some cases, other researchers have obtained somewhat different results from analyses based on different assumptions. For example, while Cacy's result that a higher level of reserve requirements improves monetary control is widely accepted, it nevertheless has been contested by George Kanatas and Stuart Greenbaum, "Bank Reserve Requirements and Monetary Aggregates," Working Paper No. 55, Banking Research Center, Graduate School of Management, Northwestern University, Evanston, Illinois. Kanatas and Greenbaum argue that a high level of reserve requirements induces financial innovation to evade the high requirements. Such innovation introduces shocks to the economy that may not otherwise have occurred, thereby reducing rather than improving monetary control. Another researcher concludes that with nonzero correlation between the disturbance terms of the public's demand deposit and time deposit demand functions, certain additional money market conditions must exist before a lowering of reserve requirements on time deposits will improve control of M1, as Cacy finds. See Daniel Laufenberg, "Optimal Reserve Requirement Ratios Against Bank Deposits for Short-Run Monetary Control," *Journal of Money, Credit, and Banking*, Vol. 11, No. 1 (February 1979), pp. 99-105. Despite these differences in theoretical results, the conclusions obtained by Cacy and reported here are reasonable.

and nonborrowed reserves. These reserve aggregates, or reserves for short, can be closely controlled by the Federal Reserve through the System's open market operations, the buying and selling of U.S. government securities. It is this control over reserves coupled with the relationship between the money supply and reserves that allows the Federal Reserve to exercise monetary control. Thus, due to the money-reserves relationship, the Federal Reserve can engineer increases or decreases in the money supply by acting to effect increases or decreases in reserves. If the money-reserves relationship were exact, there would be a one-to-one correspondence between changes in money and changes in reserves. Under these circumstances, and assuming that reserve aggregates can be precisely controlled, monetary control would be precise.

The relationship between the money supply and reserve aggregates is not exact, however. The money supply is affected by factors, in addition to reserves, that cannot be controlled by the Federal Reserve. These "noncontrollable" factors tend to reduce the closeness of the money-reserves relationship. In other words, because changes in noncontrollable factors sometimes lead to changes in money supply, there is not a one-to-one correspondence between changes in reserves and changes in money. As a result, monetary control is not precise.[7]

The noncontrollable factors that affect the money supply include changes in the composition of deposits, shifts in the public's demand for currency, and changes in the demand on the part of depository institutions for excess reserves or for borrowing from Federal Reserve Banks. For example, a shift of deposits from large banks to small banks tends to increase the money supply since large banks generally face higher reserve requirements than small banks. Thus, deposit shifts to small banks release reserves that can be used to support additional deposits, which increase the money supply. Similarly, a shift by the public out of currency and into deposits generates reserves to support additional deposits and money. A decline in the demand for excess reserves or an increase in discount window borrowing also tends to increase deposits and the money supply. Of course, any of these shifts in the opposite direction would tend to decrease the money supply.

Reserve requirements can enhance the closeness of the money-reserves relationship because both the level and structure of requirements can influence the extent that noncontrollable factors affect the money supply. The level of reserve requirements refers to the general or average level of requirements on various types of deposits, while structure refers to the relative levels of requirements on different types of deposits.

With regard to the level of requirements, a relatively high level tends to cause changes in noncontrollable factors to have a relatively small impact on the money supply. For example, given some level of reserve requirements, suppose a shift by the public out of currency and into demand deposits generates enough reserves to increase the money supply by $100. Had the level of reserve requirements been higher, this shift would have released fewer reserves and the money supply would therefore have increased by less than $100. Thus, a relatively high level of reserve requirements tends to strengthen the money-reserves relationship and thereby to

[7] Monetary control would be precise if changes in the noncontrollable factors and their impact on money were predictable. In this case, the Federal Reserve could take offsetting action. However, the impact of the noncontrollable factors is not entirely predictable. Thus, while the Federal Reserve exercises a degree of control over the nation's money supply, monetary control is made imprecise by the existence and unpredictability of noncontrollable factors.

enhance monetary control.

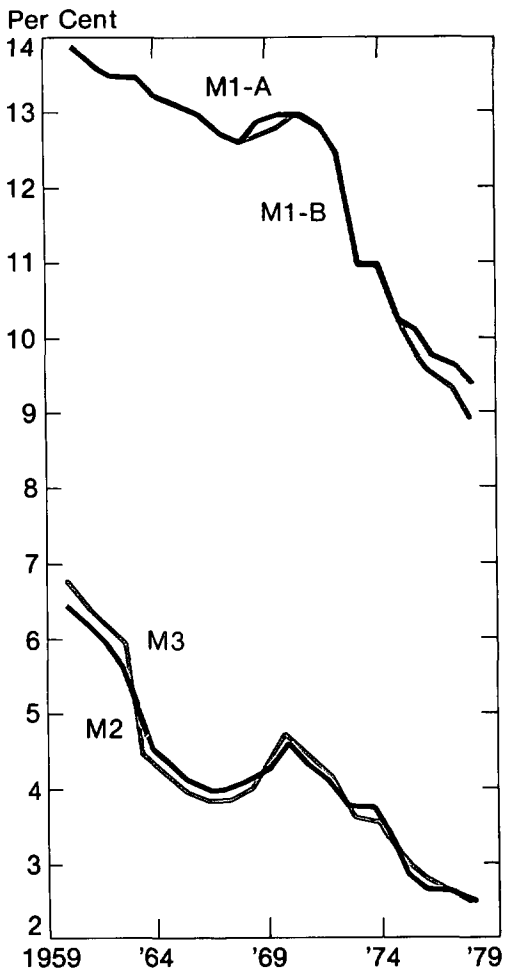
With regard to the structure of reserve requirements, a more uniform structure for different types of deposits included in any particular definition of money tends to reduce the impact on the money supply of changes in noncontrollable factors. For example, if the requirement is the same for each type of deposit in M1-A, shifts among the different types will not affect M1-A. The same is true for the other money supply measures. Thus, *intra*-definitional uniformity in the structure of requirements tends to strengthen the money-reserves relationship and to enhance monetary control. On the other hand, for deposits included in a money supply definition compared to deposits excluded from that definition, a nonuniform structure involving low or zero requirements on the excluded deposits tends to tighten the money-reserves relationship. For example, a zero requirement on time deposits, which are not in M1-A, would minimize the extent that shifts between time deposits and M1-A demand deposits affect M1-A. Thus, *inter*definitional nonuniformity in the structure of requirements tends to enhance monetary control.[8]

The Declining Effectiveness of Reserve Requirements

The level of reserve requirements has declined in recent years, as measured by the various ratios of reserves required against deposits to deposits. As shown in the preceding analysis, this decline has tended to reduce the effectiveness of requirements in contributing to the Federal Reserve's ability to control the money supply.

Chart 1 shows the trends over the past 20 years in the average required reserve ratios on

Chart 1
AVERAGE REQUIRED RESERVE RATIOS ON DEPOSITS IN M1-A, M1-B, M2, AND M3
(Yearly Averages of Monthly Data)



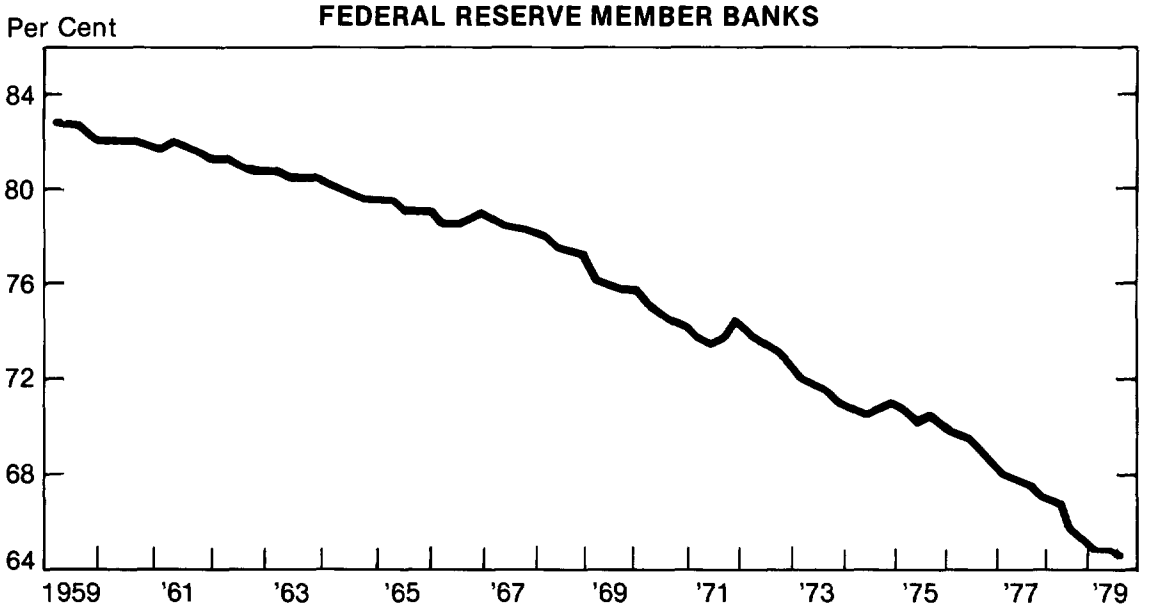
[8] When more than one money supply definition is involved, a conflict arises between the desirability of having intradefinitional uniformity on deposits in the broader measures and interdefinitional nonuniformity on deposits in the narrower definitions. For example, for controlling M2, it would be desirable to have the same requirements on both the transaction deposits and the nontransaction deposits included in M2. However, in controlling M1-B, it would be desirable to have relatively high requirements on transaction deposits, which are in M1-B, and relatively low or zero requirements on nontransaction deposits, which are not in M1-B.

various types of deposits. For example, the series labeled M1-A shows the average ratio of required reserves behind deposits in M1-A to total deposits in M1-A, which include privately held demand deposits at all commercial banks. Similarly, the M1-B series is the average required reserve ratio on M1-B deposits, which include, in addition to M1-A deposits, other transaction deposits such as NOW accounts, share drafts, and savings accounts subject to automatic transfer. The series labeled M2 and M3 are the average required reserve ratios on deposits included in these broader aggregates. Deposits in M2 include those in M1-B plus savings and small denomination time deposits at all depository institutions, and certain other short-term liquid assets including money market mutual funds. Deposits in M3 include those in M2 plus large denomination time deposits at all depository institutions and term repurchase agreements.

As shown in Chart 1, the average required reserve ratio for M1-A has declined in recent years from about 13 3/4 per cent in 1959 to about 9 1/4 per cent in 1979. The required reserve ratio for M1-B has declined even more than the M1-A ratio. The M1-B ratio declined from 13 3/4 per cent in 1959 to about 8 3/4 per cent during 1979. As Chart 1 also shows, the average required reserve ratios on M2 and M3 deposits have declined relatively more over the last two decades than have the ratios for M1-A and M1-B. By 1979, the M2 and M3 ratios had fallen to below 3 per cent, less than half their levels of 1959.[9]

One reason for the declines in the average required reserve ratios over the last two decades has been the declining importance of member bank deposits. For example, the proportion of total demand deposits held at Federal Reserve member banks dropped from about 83 per cent at the beginning of 1959 to about 65 per cent at the end of 1979. (See Chart 2.) The most important reason for this drop is that reserve

Chart 2
PERCENTAGE OF TOTAL DEMAND DEPOSITS AT FEDERAL RESERVE MEMBER BANKS



requirements on member banks' deposits were generally higher and more restrictive than those imposed by other regulatory agencies on deposits at nonmember institutions.[10] Since nonmember institutions were not subject to Federal Reserve System reserve requirements, the declining importance of member bank deposits tended to lower the average ratios of required reserves to deposits in all the monetary aggregates.

A second reason for the declining required reserve ratios on deposits in M1-B, M2, and M3 was the rising importance of transaction deposits other than demand deposits. For example, the ratio of these other transaction deposits to total M1-B deposits rose from essentially zero before the early 1970s to almost 6 per cent at the end of 1979. (See Chart 3.) Other transaction deposits have grown for several reasons. High and rising market interest rates, together with rising inflation and inflationary expectations, have induced the public to hold fewer balances in noninterest-bearing demand deposits and more in other transaction deposits that pay interest (albeit subject to a ceiling). Additionally, other transaction deposits have been subject to lower reserve requirements than demand deposits, which made them more attractive than demand deposits to the financial institutions that issued them. Finally, regulations governing the issuance of other transaction deposits were liberalized in several ways during the 1970s, making these deposits more widely available. Since reserve requirements on other transaction deposits were less than those on demand deposits, the rising importance of other transaction deposits helps explain why average required reserve ratios on deposits in M1-B, M2, and M3 were lower and declined more than the ratio on M1-A deposits.

A third reason for the declining average required reserve ratios on M2 and M3 deposits was the rising importance of close money substitutes. The ratio of these substitutes in M2 to total M2 deposits rose from about 57 per cent at the beginning of 1959 to about 80 per cent by yearend 1979, while the ratio of these substitutes in M3 to total M3 deposits rose from the same base to about 83 per cent by yearend 1979. (See Chart 4.) Close money substitutes grew relative to transaction balances for many of the same reasons that other transaction deposits grew relative to demand deposits: rising market interest rates and inflation, higher returns, and lower reserve requirements. In addition, the evolution of electronic funds transfer has made it easier to shift funds between money substitutes and

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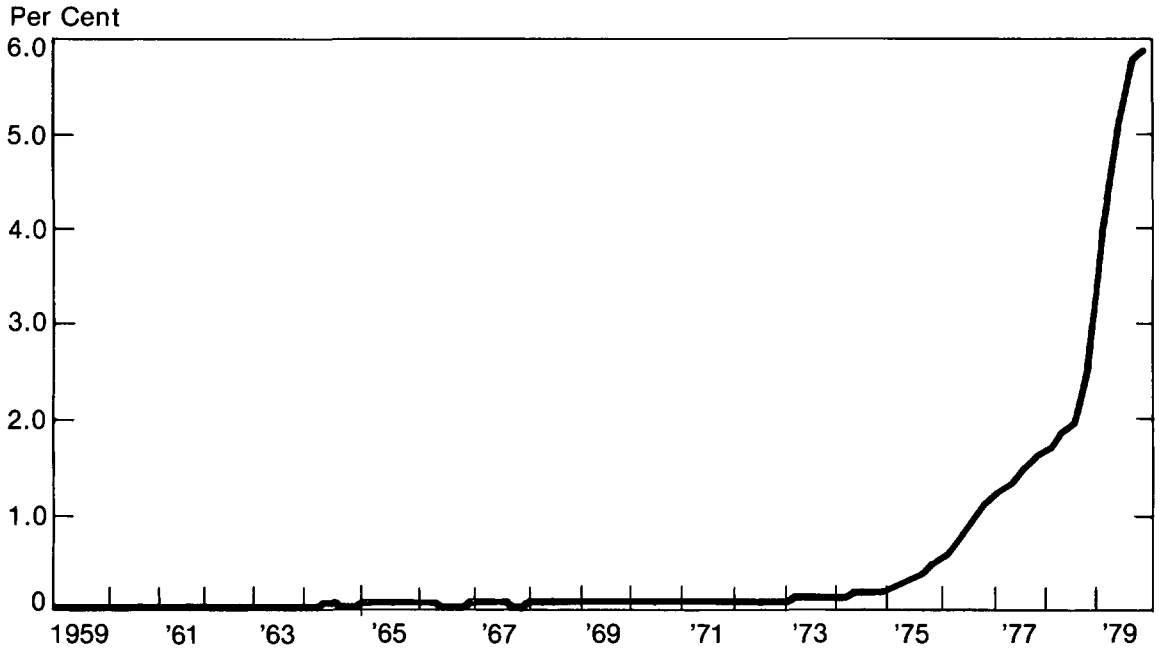
[9] M1-A's average required reserve ratio is estimated as [RDD/(M1-A - C)] and M1-B's ratio is estimated as [RDD/(M1-B - C)], where RDD is required reserves behind member bank demand deposits and C is currency in the hands of the public. Since the numerator of the M1-B ratio does not include required reserves behind NOW accounts and ATS accounts at member banks, it probably understates the true ratio. However, the change in the true ratio between 1959 and 1979 is probably adequately approximated by this estimate, and it is the change in the ratio over time that is indicative of weakened monetary control.

M2's average required reserve ratio is estimated as [(RDD + .64 x RTD)/(M2 - C)] and M3's ratio is estimated as [(RDD + RTD)/(M3 - C)], where RTD is required reserves behind member bank time and savings deposits and .64 is the estimated fraction of total member bank time and savings deposits consisting of small denomination time deposits and savings deposits.

All of these ratios are unadjusted for any changes that occurred over the years in reserve requirements. Therefore, changes in the ratios reflect not only shifts between the various classes of deposits, but also changes in the levels of reserve requirements. Since member bank reserve requirements were lowered several times between 1959 and 1979, average required reserve ratios adjusted for these changes would show smaller declines, although they still would decline over time.

[10] For a further discussion of why member bank deposits have declined in importance, see Peter Rose, "Exodus: Why Banks Are Leaving the Fed," *The Bankers Magazine* (Winter 1976), pp. 43-49, and John T. Rose, "An Analysis of Federal Reserve System Attrition Since 1960," *Staff Economic Studies*, Board of Governors of the Federal Reserve System, No. 93, December 5, 1977.

Chart 3
OTHER TRANSACTION DEPOSITS AS A PERCENTAGE OF TOTAL M1-B DEPOSITS



transaction accounts, thereby improving cash management and reducing the need for large transaction balances.[11] Since reserve requirements on close money substitutes were generally lower than those on demand deposits and other transaction deposits, the rising importance of these substitutes helps explain why the average required reserve ratios on M2 and M3 deposits were lower and declined more than the ratios on M1-A and M1-B deposits.

MONETARY CONTROL UNDER THE NEW RESERVE REQUIREMENTS

The new reserve requirements will affect monetary control in two ways. First, they will affect the longer run trend in the level of the required reserve ratios. Second, the new requirements will affect the structure or the relative levels of the required reserve ratios.

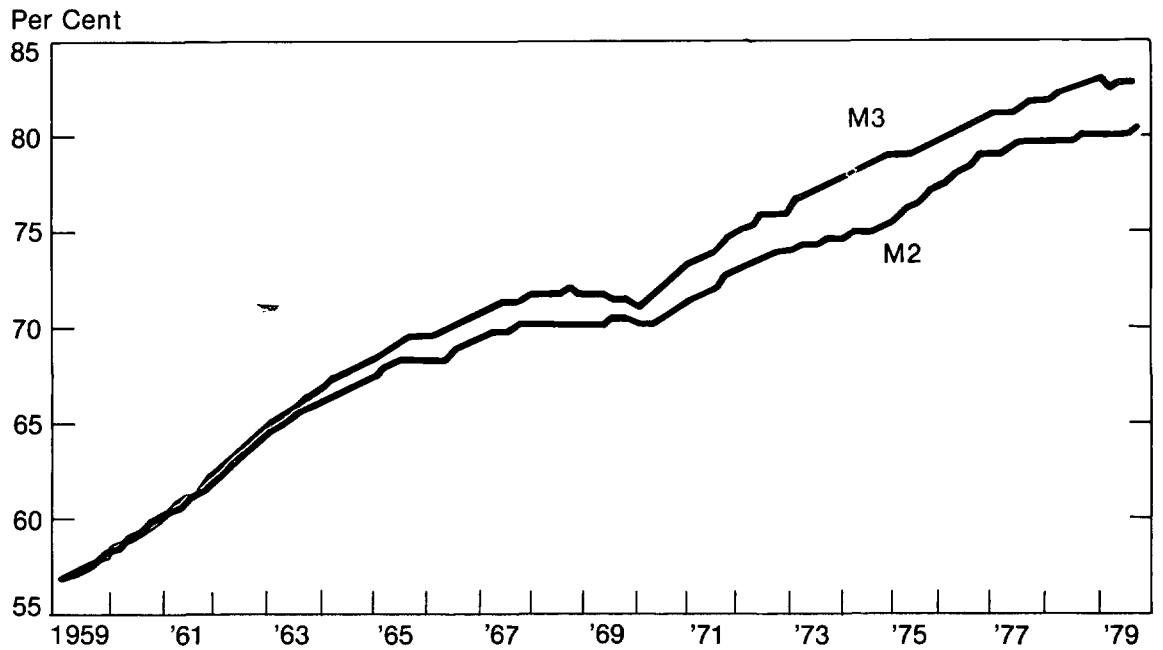
The Trend in Required Reserve Ratios

The new requirements will enhance monetary control by tempering the long-run downward trend in the average required reserve ratios. For the narrowly defined money supply measures, M1-A and M1-B, the legislation will prevent the ratios from trending downward after the phase-in period, and will result in higher required reserve ratios than would have obtained in the absence of the legislation.

The prospective behavior of the required reserve ratios for M1-A and M1-B at the end of

[11] For more information about the impact of electronic funds transfer on the money stock, see Almarin Phillips, "CMC, Heller, Hunt, FIA, FRA, and FINE: The Neglected Aspect of Financial Reform," *Journal of Money, Credit, and Banking* (November 1977), pp. 636-41.

Chart 4
CLOSE MONEY SUBSTITUTES IN M2 AND M3 AS PERCENTAGES OF TOTAL M2 AND M3 DEPOSITS



Close money substitutes in M2 are small denomination time and savings deposits, money market mutual fund shares, overnight repurchase agreements with corporate customers, and overnight Eurodollar deposits. Total M2 deposits are close money substitutes in M2 plus M1-B deposits. Close money substitutes in M3 are those in M2 plus large denomination time deposits and term repurchase agreements. Total M3 deposits are these latter substitutes plus M2 deposits.

the eight-year phase-in period may be derived by using the following formula:[12]

$$(1) \quad r_1 = .03L + .12H,$$

where

r_1 represents the average required reserve ratio for M1-A or M1-B,

L represents low-requirement deposits (i.e., deposits subject to the 3 per cent requirement) in M1-A or M1-B as a fraction of total deposits in M1-A or M1-B, and

H represents high-requirement deposits (i.e., deposits subject to the 12 per cent requirement) in M1-A or M1-B as a fraction of total deposits in M1-A or M1-B (thus, $H = 1 - L$).

For example, suppose total transaction deposits in M1-B consisted of $100 billion of low-requirement deposits plus $300 billion of high-

12 Strictly speaking, the formula holds only for M1-B. Under the new legislation, requirements apply to total transaction deposits rather than to demand deposits per se. For this reason, and because requirements are graduated, it is impossible to strictly define an average reserve requirement for demand deposits in M1-A.

requirement deposits. Then L = .25 [$100 billion ÷ $400 billion], H = .75 [$300 billion ÷ $400 billion], and r_1 = 9.75 per cent [(.03 x .25) + (.12 x .75)].

As indicated by the formula, the trend in the required reserve ratios for M1 depends on the trends in L and H. In practice, L will probably decline and H increase over time. Growth in the average size of institutions issuing transaction deposits will push deposits out of the low-requirement and into the high-requirement category due to the indexing arrangement discussed above. The shift in deposits that decreases L and increases H will result in an upward trend in r_1. Of course, the changes in L and H, and therefore in r_1, will be gradual. Nevertheless, the M1 required reserve ratios will trend upward under the new legislation, instead of trending downward as would have occurred under the old arrangements.

In addition to trending upward, the M1 required reserve ratios will (eventually, at least) be higher under the new structure than they would have been under the old arrangements. Assuming that the reserve requirement on high-requirement deposits remains at 12 per cent and that L and H remain at their yearend 1979 levels of 40 and 60 per cent, respectively, at the end of the eight-year phase-in period, r_1 will be 8.4 per cent [(.03 x .4) + (.12 x .6)]. As mentioned, L may decline and H increase somewhat, so that the M1 required reserve ratios may be somewhat higher than 8.4 per cent.

In any case, at the end of the eight-year phase-in period, the required reserve ratios for M1 under the new legislation will be higher than they would have been had the new legislation not been enacted. If the new legislation had not been enacted, assuming a continuation of past membership attrition rates and other trends, the required reserve ratio for M1-B during the coming eight-year period would likely have declined from its 1979 level of about 8.9 per cent to around 6.5 per cent, lower than the minimum 8.4 per cent under the new legislation. (See Table 1 and its note.) Similarly, the M1-A ratio at the end of the phase-in period will probably be higher under the new legislation. If current trends continue, the M1-A required reserve ratio would have declined under the old structure from its 1979 level of about 9.4 per cent to around 7.9 per cent, compared with 8.4 per cent under the new structure.

Moreover, both the M1-A and M1-B ratios would continue to decline indefinitely without the new legislation, while both ratios will likely trend upward under the new arrangements. Additionally, under the new legislation, the Federal Reserve could bring about increases in the required reserve ratios by increasing above 12 per cent the reserve requirement on high-requirement deposits and/or by implementing the supplemental reserve requirement. Without the new legislation, increases in reserve requirements would likely have been counterproductive, since they would increase membership attrition, which would partly offset the impact on r_1 of the higher requirements.

The long-run trend in the average required reserve ratio for M2—r_2—will depend in part on the trend in r_1 because transaction deposits are included in M2 as well as in the M1's. As indicated earlier, r_1 is likely to trend upward, tending to cause an upward trend in r_2. However, because nontransaction as well as transaction deposits are included in M2, the long-run trend in r_2 will also depend on the growth of nontransaction deposits relative to

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13 The prospective behavior of the average required reserve ratios for M2 and M3 may be analyzed using a formula which is applicable under the old as well as the new structure: $r_i = r_1 d_i + r_N n_i$, where i equals 2 for M2 or 3 for M3, r_i represents the average required reserve ratio for M2 or M3, d_i represents transaction deposits as a fraction

Table 1
PROSPECTIVE AVERAGE REQUIRED RESERVE RATIOS
(In Per Cent)

	Yearend 1979	Yearend 1988	
		Old Structure	DIDMCA
M1-A	9.4	7.9	8.4
M1-B	8.9	6.5	8.4
M2	2.5	0.9	0.9
M3	2.5	1.0	1.1

NOTE: The figures for yearend 1979 are estimates of the actual average required reserve ratios based on required reserve data adjusted for changes in reserve requirements. The figures under the "Old Structure" column are obtained by regressing these adjusted ratios on time over the five years ending in 1979 and using the estimated coefficients to extrapolate to yearend 1988. These "Old Structure" figures therefore assume a continuation of the trend in deposit shifts that has occurred over the past five years. However, since they are estimated using ratios adjusted for reserve requirement changes, these 1988 figures do not assume any continuation of the trend toward lower levels of reserve requirements over the past five years. The M1-A and M1-B figures under the "DIDMCA" column assume that L and H of equation (1) remain at their yearend 1979 levels of 40 and 60 per cent, respectively. The M2 and M3 figures in this column are based on the equation in footnote 13. For M2, n_2 is assumed to be zero and r_1 to be 8.4 per cent. An estimate of d_2 is obtained by regressing d_2 on time over the five years ending in 1979 and using the estimated coefficients to extrapolate to yearend 1988. This estimate of d_2 thus assumes a continuation over the next eight years in d_2's trend over the past five years. The M3 figure in this column is calculated using a similar procedure, except that the n-ratio is assumed to remain at its yearend 1979 level of 12.9 per cent.

the growth of transaction deposits.[13] Since reserve requirements on nontransaction deposits are lower than requirements on transaction deposits, a continuation of the relatively rapid growth of nontransaction deposits will tend to reduce r_2. Moreover, if past trends continue, the downward impact on r_2 of the growth of nontransaction deposits will offset the upward impact of the increase in r_1. Thus, the new structure of reserve requirements will not prevent a continued downward trend in the average required reserve ratio for M2. Nevertheless, the downward trend in the ratio will probably be less pronounced under the new legislation than it would have been under the old structure. This is because, as indicated earlier, r_1 would have continued on its downward trend under the old structure.[14]

of total deposits in M2 or M3, n_i represents reservable nontransaction deposits in M2 or M3 as a fraction of total deposits in M2 or M3, and r_N is the reserve requirement on reservable nontransaction deposits in M2 or M3.

[14] There is, though, an offsetting factor. Because reserve requirements would have remained on savings and personal time deposits under the old arrangements, n_2 from the equation in footnote 13 would have remained relatively high and trended upward. For this reason, n_2 would have had an impact on r_2 under the old structure, partly offsetting the decline in r_1. However, this factor is probably only partly offsetting. On balance, if past trends continue, the increase in r_1 under the new structure, in contrast with the decline under the old, will be sufficient to temper the downward trend in r_2 compared with its likely behavior under the old structure.

The M2 required reserve ratio eventually will probably be higher under the new structure than it would have been under the old arrangement. Under the new structure, if current trends continue, the M2 ratio will be .9 per cent at the end of the eight-year phase-in period.[15] Had the new legislation not been passed, a continuation of the current trends would have resulted in a decline in the ratio from its 1979 level of about 2.5 per cent to about .9 per cent. (See Table 1.) Thus, at the end of the phase-in period, the required reserve ratio for M2 may be about the same as it would have been under the old structure. Nevertheless, because its downward trend will be less pronounced after the phase-in period under the new structure, the M2 ratio would have eventually fallen below its level under the new legislation.

In general, the analysis and conclusions for the M3 definition of money are the same as for M2. The downward trend in the M3 average required reserve ratio eventually will be less pronounced under the new structure than it would have been had the new legislation not been enacted.[16] Also, the conclusion that the required reserve ratio will be higher under the new structure is warranted for M3 as well as for M2. At the end of the eight-year phase-in period, if current trends continue, the M3 ratio will be 1.1 per cent, about the same as the 1.0 per cent that would have prevailed had the new legislation not been passed. Nevertheless, because the downward trend in the required reserve ratio for M3 will be less pronounced under the new structure, the M3 ratio, like the ratio for M2, would have eventually fallen below its level under the new legislation.

Structure of the New Requirements

In addition to affecting the long-run trend in required reserve ratios, DIDMCA will influence monetary control by affecting the structure of reserve requirements. For the narrowly defined money supply measures, the legislation will enhance monetary control by increasing the uniformity of requirements on included deposits. For example, due to the more uniform structure, changes in the composition of deposits between member and nonmember banks will not affect M1-A and M1-B. Under the old structure, because there were no System reserve requirements on deposits at nonmember banks, M1 would change when the public shifted deposits between member and nonmember banks. These changes in M1 were not necessarily consistent with the objectives of the Federal Reserve.

Another compositional change—shifts between demand deposits and savings and personal time deposits—will have a smaller impact on the M1's under DIDMCA. The smaller impact arises from the elimination of reserve requirements on savings and personal time deposits. As indicated above, the impact on any definition of money of shifts between included and excluded deposits is minimized when the requirement on excluded deposits is zero.

A compositional change that will not affect M1-B under the new structure is shifts between demand deposits and other transaction deposits, which include mainly NOW and ATS accounts. Under the old structure, because reserve requirements on demand deposits generally exceeded those on other transaction deposits, and both are in M1-B, shifts between

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15 From the equation in footnote 13, d_2 will be about 11 per cent and r_1 will be 8.4 per cent. Ignoring the small impact of $r_N n_2$, then, r_2 will be .9 per cent (.11 x 8.4 per cent).

16 For M3 compared to M2, this conclusion is strengthened by the fact that, due to the retention of requirements on nonpersonal time deposits, which are wholly in M3 but only partly in M2, n, the ratio of reservable nontransaction deposits to total deposits, is greater for M3 than for M2.

demand deposits and other transaction deposits would change M1-B. Under the new structure, because the reserve requirements on demand deposits are the same as on other transaction deposits, these shifts will not affect M1-B.

However, as was the case under the old structure, some deposit shifts will continue to affect the M1's. Due to the retention of some deposit size graduation in the reserve requirement structure, deposit shifts between smaller banks and larger ones will affect M1-A and M1-B as before. Also, due to the retention of reserve requirements on nonpersonal time deposits, shifts between these deposits and transaction deposits will continue to affect the M1's. Nevertheless, on balance, the changes in the structure of reserve requirements under DIDMCA will tend to improve the Federal Reserve's ability to control M1-A and M1-B.

For the broader M2 and M3 definitions of money, DIDMCA's more uniform structure of requirements on M1 deposits will enhance control over M2 and M3 as well as over the M1's. This is because the deposits in the M1's are also in M2 and M3. On balance, however, the new structure of requirements may not contribute to better control over M2 and M3. Under the new structure, these broader aggregates will continue to be affected by short-run changes in the composition of deposits between the transaction deposits in M2 and M3, and the nontransaction deposits (savings and time deposits) included in these aggregates. Because the average reserve requirement on M1-B deposits exceeds that on nontransaction deposits, a shift between M1-B and nontransaction deposits affects M2 and M3. Under the new structure compared to the old, moreover, these shifts have a relatively large impact on M2 and M3. The greater impact arises because, for most nontransaction deposits in M2 and M3 (that is, for savings and personal time deposits), DIDMCA eliminates reserve requirements, thereby increasing the difference between the requirements on M1-B and nontransaction deposits. Thus, while the elimination of requirements on savings and personal time deposits tends to enhance control over the M1's, it tends to worsen control over the broader aggregates.

SUMMARY

This article has focused on the new reserve requirements mandated by the Depository Institutions Deregulation and Monetary Control Act of 1980. The new requirements are needed to improve the Federal Reserve's ability to control the supply of money and credit to the economy. The effectiveness of the old structure in contributing to monetary control has been reduced in recent years by a number of developments, such as declining Federal Reserve membership. These developments have led to downward trends in the average required reserve ratios for deposits included in the various definitions of the money supply. In turn, these trends have tended to weaken the relationship between the money supply and the reserve aggregates that the Federal Reserve can control. Thus, monetary control has been weakened.

The requirements mandated by the legislation will enhance monetary control by tempering the downward trends in the required reserve ratios. For the narrowly defined money supply measures, M1-A and M1-B, the legislation after the phase-in period will prevent the ratios from trending downward. Also, the legislation will lead to higher ratios for all of the money supply definitions than would have obtained in the absence of the legislation.

In addition to affecting the long-run trend in the required reserve ratios, the legislation will further affect monetary control by changing the structure of requirements. For the narrowly defined money supply measures, these

structural changes will further strengthen the money supply-reserve aggregate relationship by reducing the extent that the money supply is affected by various changes in the composition of deposits. Thus, control over M1-A and M1-B will be improved. The structural changes may not enhance control over the broader money supply definitions, M2 and M3. On balance, though, considering both the level and structure of requirements, control over M2 and M3 is likely to be more effective under the new legislation than it would have been under the old set of reserve requirements. Moreover, the new legislation will result in a definite improvement in the Federal Reserve's ability to control the narrowly defined money supply measures.