Deregulation and Monetary Control: Historical Perspective and Impact of the 1980 Act

BY

THOMAS F. CARGILL
GILLIAN G. GARCIA
Deregulation and Monetary Control: Historical Perspective and Impact of the 1980 Act

I.

Introduction

There are three features which society requires from its financial system. First, the system should provide an efficient flow of funds between lenders and borrowers. Second, it is relied upon to maintain a reasonable degree of soundness among financial institutions and markets during adverse economic events. Third, it needs to be adaptable to changes in the economic environment. The financial system in the U.S. has not always met these requirements and has periodically malfunctioned. The country's economic history illustrates the many attempts, at both the state and national level, to improve the operation of the financial system as events and changing economic circumstances have made the existing financial structure incompatible with orderly economic activity and growth.

Two themes occur throughout the history of financial reform in the U.S. Such reform is both "crisis oriented" and concerned with enhancing the "soundness" of the financial system. Legislative change governing the institutional infrastructure of financial transactions has occurred in response either to collapse or serious disruption of the flow of funds from lenders to borrowers. In response to the crisis, reform has been directed toward improving the soundness of the financial system. The literature does not clearly define soundness in the present context and various commentators use the term in different ways. In this dis-
cussion, a sound financial system is taken to mean that institutions and markets maintain an efficient flow of funds even in the presence of adverse economic events. The failure of individual institutions, though not on the scale of the banking collapse of the early 1930s, is compatible with a sound financial system.

The wide range of legislative change introduced in the 1930s illustrates both the crisis and soundness orientation of financial reform. The unprecedented collapse of the banking system and the inability of the Federal Reserve to effectively counteract it, led to passage of the Banking Acts of 1933 and 1935, the Securities Act of 1933, and the Securities Exchange Act of 1934. Not since the passage of the National Banking Act of 1863 had so much financial reform been enacted in such a short period of time. That legislation sought to establish a sound financial system by imposing constraints on the competitive behavior of banks, increasing federal regulation of both banks and nonbank financial institutions, and increasing the powers of the Federal Reserve System.

The financial structure until very recently reflected the reforms introduced during the 1930s and it satisfied, albeit imperfectly, the basic functions of a financial system until the mid-1960s. At that time, the system was exhibiting signs of incompatibility with the economic environment and increasing concern was being expressed about the viability of financial institutions [42] [54]. The most obvious reflections of the incompatibility were a series of "credit crunches" marked by interruption in the flow of funds between lenders and borrowers, curtailed flow of consumer and mortgage credit, disinter-
mediation, and liquidity problems for various financial institutions. The viability issues became particularly important with the failure of Penn Central in 1970 and the corresponding impact this had on the commercial paper market, the failure of Franklin National Bank in 1974 and more recently with the bailout of First Pennsylvania Bank.

Incompatibility between the financial structure and the economic environment resulted from the coincidence of inflation, high interest rates, and a myriad of binding rate-ceiling and other restrictions on the behavior of financial institutions. Inflation and high interest rates during the 1970s increased the incentive for financial institutions and markets to either avoid or evade constraints on their competitive behavior. In the process, financial institutions exposed themselves to increased problems of liquidity and default. E. Kane recently stressed this point in an analysis of bank liability management techniques:

"Banks that adopt these 'modern' portfolio policies increase their exposure to liquidity crises and necessarily become more dependent on the Fed and FDIC to bail them out in the event of adverse market developments. Conversely, federal regulators find themselves worrying about a problem that many observers supposed to have been eliminated by federal deposit insurance: the possibility that a chain of bank failures could trigger a Nationwide Financial Panic. Since the spectacular CD and federal funds runoffs experienced by Franklin National Bank in 1974, the threat of bank failures has plagued federal regulators." [27, p. 172]

The recent bailout for First Pennsylvania Bank and the fear in late 1979 and early 1980 that failure of this or some other large problem bank would be the catalyst for a financial crisis, underscores the statement by Kane.

While major attention was directed toward difficulties in the
financial system and the fear that a serious interruption to the flow of funds was likely, concern was also growing by the late 1970s about the inability of fiscal and monetary policy to effectively deal with inflation. Fiscal policy was expansionary throughout much of the period and a disproportionate responsibility was placed on monetary policy to deal with inflation. Concern about operating procedures within the Federal Reserve (whether to emphasize monetary aggregates or interest rates and to redefine the traditional monetary aggregates) raised questions about the ability of the Federal Reserve to deal effectively with rapidly accelerating inflation. The continual decline in membership and the rapid expansion of near-moneys offered by institutions not under the control of the Federal Reserve, reduced the central bank's ability to exercise monetary policy. Thus, the structural problems of the financial system not only reached a point where financial collapse was possible but also where they interfered with the Federal Reserve's ability to effectively conduct monetary policy. By the end of the decade of the 1970s, as the pressures mounted against the monetary system, the Board recognized the need to completely review and reform the framework of monetary policy. Consequently, the ground was prepared for new legislation.

The issues of financial reform and monetary control had become increasingly interrelated by the late 1970s. The Depository Institutions Deregulation and Monetary Control Act of 1980 (colloquially called "DIDMCA", "the omnibus Act" or "Leviathan") represents the most comprehensive financial and monetary control package enacted since the 1930s. There are several important similarities and some differences
between this legislation and that of the 30's. First, both sets of legislative reforms represent a response to a crisis situation. The reforms of the earlier period were established in response to an actual crisis whereas the present reforms came in reaction to a potential collapse. This anticipatory approach may be reflective of the maturity of government stabilization policy. Second, both deal with the conduct of monetary policy as well as with financial reform. Third, both focus on the soundness of financial institutions. In the approach toward achieving soundness, however, the current legislation sharply differentiates itself from the earlier reforms. In the 1930s reformers interpreted a sound financial system to be one in which competitive forces were restrained, whereas deregulation of many of the constraints introduced in the 1930s is the primary emphasis of the present Act. A sound financial system is now regarded as one where competitive forces are allowed more flexibility and where failure of some individual institutions is to be expected. It will be a real challenge for regulators to permit and promote deregulation despite an increase in the failure rate among financial institutions.

The primary objective of this paper is to place the current financial and monetary reforms in historical perspective, to analyze their possible short and long run impacts, to investigate the implications for the viability of financial institutions and the conduct of monetary policy, to suggest issues which are either created or left unsettled by the financial and monetary reform package, and to pinpoint areas where further deregulation is recommended. The remainder of the
paper is composed of the following sections: Section II places the omnibus Act in historical perspective and discusses the major forces leading to its passage in 1980. Section III outlines the main features of the Deregulation and Monetary Control Act. Rather than simply listing the numerous changes, the discussion focuses on those parts of the law that significantly alter the structure of the financial system and the Federal Reserve. The impact of the omnibus Act on the financial system, banking industry, and the issue of future viability of financial institutions are discussed in Section IV. The impact of the monetary control features of the omnibus Act are described in Section V. Several issues that will arise during and after implementation of the Act are discussed in Section VI, which also addresses the need for further deregulation. A brief concluding section ends the paper.
II.

DEREGULATION AND MONETARY CONTROL IN HISTORICAL PERSPECTIVE

The omnibus legislation accomplishes two objectives. First, it provides for a financial system which is substantially more competitive than that established during the 1930s. Second, it provides for a considerable expansion in the power and control of the Federal Reserve System. There is, as Kane [28] has pointed out, some conflict in these two objectives, for at the same time that some regulations on banks and thrifts are relaxed, reserve requirement regulations are extended to many deposit institutions for the first time.

The two major objectives can be placed in historical perspective by considering the following developments since the 1930s: (1) the inflationary environment of the last fifteen years and the accelerating inflation rate in late 1979 and early 1980; (2) the increased ease with which binding constraints on competitive behavior were circumvented; (3) the reinterpretation of the banking collapse of the 1930s; and (4) the re-evaluation of the Great Depression as part of the monetarist-Keynesian debate. Each of these forces in one way or another provided an environment conducive to the passage of a comprehensive financial reform and monetary control bill.

The Inflationary Environment

Inflation became a serious problem in the mid-1960s when the federal government significantly expanded spending for the Vietnam War
and domestic social programs beyond the productive capacity of the economy. Continuing anticipated inflation increased nominal interest rates to historical highs in the 1970s via the well-known Fisher effect [8] [11]. Financial institutions subject to binding rate ceilings experienced disintermediation as funds were withdrawn and transferred to instruments not subject to interest rate ceilings. In addition, rapid acceleration in the rate of inflation produced a downward-sloping yield curve in which short-term rates exceeded long-term rates. Financial institutions thus found themselves in the position of borrowing short at high rates and lending long at lower rates. There is no doubt that the nonbinding nature of the Regulation Q ceilings prior to the mid-1960s allowed the financial system to function more or less satisfactorily for several decades. However, once inflation, high interest rates, and a downward-sloping yield curve characterized the economic environment, financial institutions found it increasingly difficult to operate within an institutional setting of interest rate ceilings, restrictions on portfolio adjustments that differed among institutions, and a myriad of usury ceilings imposed by various state governments.

The emerging events of late 1979 and early 1980 reflected the difficult problems that the financial system had experienced earlier in 1969 and 1974; however, there was now a significant magnification of the problems. By early 1980, inflation had reached a rate over 10 percent, interest rates were rapidly accelerating, Chrysler and First Pennsylvania were calling for large federal bailouts to avoid bankruptcy, and the speculative increase in the price of gold and silver astounded most observers. In fact, there was a general fear among policymakers and
regulators that financial collapse was a real possibility. The 50th anniversary of the Great Depression, which also occurred at this time, certainly did not comfort one's view of the viability of the financial structure.

Circumvention of the Regulations

During the past two decades, the financial system has found it increasingly easy to create new types of financial instruments and new procedures to avoid or evade the most restrictive of the binding constraints [55]. Nevertheless, these circumventions were only partially successful and they imposed penalties on small savers, who could not take advantage of the new instruments and institutions.

The evasions can be placed in two categories. In the first group belong the market-induced implicit payment of interest in the form of free services, gifts for depositors, and finders' fees for "friends", and the new instruments, such as money market mutual funds, Eurodollar deposits, repurchase agreements, NOW accounts, bank holding company-related commercial paper, and cash management and bill-paying services. In the second group belong the regulator-created circumventions. These include large negotiable certificates of deposit and money market certificates. While these new instruments offset some of the negative effects of the binding constraints, they also created new inefficiencies and raised serious equity considerations, since they were not available to low income or small savers.
The Role of Competition in the Collapse of the Banking System during the 1930s

Considerable research during the past two decades has demonstrated that contrary to the traditional argument, the collapse of the banking system during the first part of the Great Depression cannot be primarily attributed to competition between banks for deposits. The traditional argument placed heavy emphasis on the view that competitive pressures to pay high rates of interest in the late 1920s had forced banks to adopt very risky portfolios and thus had made them structurally weak and susceptible to a downturn in economic activity. This view is still widely held among regulators and explains much of the caution with which deregulation has been approached. There is no doubt that structural problems existed in the banking system as the economy entered the 1930s; however, the economic decline from 1929 through 1933 and the corresponding banking collapse have been shown to be the result of the inappropriate policies by the Federal Reserve and, in particular, its failure to act as a lender of last resort.

The Influence of the Monetarist-Keynesian Debate

The reinterpretation of the banking collapse is only part of a general re-evaluation of the Great Depression that has emerged as part of the monetarist-Keynesian debate of the past two decades. The debate covers much ground and would go far beyond the scope of this paper; however, it does have important implications for understanding the environment of the Deregulation and Monetary Control Act. The traditional or Keynesian view of the Great Depression placed considerable emphasis on the unstable nature of an unregulated and uncontrolled
economy as the primary cause of the Great Depression. An unstable system required government involvement in order to achieve socially desired goals. The move to restrict competition among financial institutions reflected this lack of faith in the ability of competitive markets to function properly. Thus, an interventionist view dominated the profession and government policymaking from the 1930s until the early 1960s, when the monetarist, free-market approach re-emerged.

Monetarism emphasized the benefits of competitive forces and the misallocation of resources likely to result from imposing binding constraints. Monetarists emphasize the inherent stability of a competitive economy and attribute the Great Depression to inappropriate policies on the part of the monetary authorities. The debate continues, but the monetarist position has obtained considerable popularity. There is a growing belief that government involvement has promised more than it has delivered. Whatever the outcome of the debate and the attempt to reduce the role of the government, there is no question that current efforts at deregulation in the financial sector (as well as other sectors, such as transportation) reflect a shift in attitude toward reliance on competitive markets.

The monetarist-Keynesian debate has also resulted in a re-evaluation of monetary policy as a stabilization tool. Until the re-emergence of monetarism in the early 1960s, monetary policy was regarded as a relatively unimportant tool of stabilization. This attitude was based on the apparent inability of the Federal Reserve System to prevent and/or reverse the decline in the 1930s. Recent research, however, has shown that the Great Depression cannot be used to argue that monetary
policy was impotent; on the contrary, the evidence indicates that monetary policy has considerable power to influence the level of economic activity.

The role of monetary policy has significantly increased during the past two decades to a position where everyone agrees that "money is important"; however, there has been considerable debate both within and without the Federal Reserve about the implementation of policy. Should monetary policy emphasize interest rates or monetary aggregates? The Federal Reserve has gradually shifted toward the monetary aggregate approach and on October 6, 1979 announced a formal shift from monitoring interest rates to controlling monetary aggregates and, in February of 1980, it announced new definitions of those aggregates. The growing importance of monetary policy and the shift toward monetary aggregate targets provide further background for understanding the passage of the monetary control features of the omnibus Act. In fact, the October 1979 announcement and the February 1980 redefinitions must be considered along with the monetary control features of the Act since the three actions are highly interrelated.

The last decade has witnessed significant erosion in the membership base of the Federal Reserve System as high interest rates increased the cost of membership. In addition, new instruments, created to avoid Regulation Q ceilings, functioned as close money substitutes over which the Federal Reserve had little direct control. Thus, the omnibus Act reflects the importance of monetary policy and attempts to centralize and strengthen the influence of the Federal Reserve over the financial system.
III.

THE MAIN FEATURES OF THE ACT

The past decade has seen two major studies of the financial system that recommended significant structural change toward a more competitive framework. The Hunt Report [42] in 1971 and the Financial Institutions and the Nation's Economy (FINE) Study [54] in 1975, both recommended the removal of rate ceilings, in general, and, in particular, those on deposits, the expansion of transaction accounts to nonbank institutions, and increased portfolio flexibility for nonbank institutions. The competitive market principle provided the basic philosophy of the two studies and was most succinctly summarized in the Hunt Commission Report.

"The Commission's objective, then, is to move as far as possible toward freedom of financial markets and equip all institutions with the powers necessary to compete in such markets. Once these powers and services have been authorized, and a suitable time allowed for implementation, each institution will be free to determine its own course. The public will be better served by such competition. Markets will work more efficiently in the allocation of funds and total savings will expand to meet private and public needs." [42, p. 71]

The Financial Institutions Acts of 1973 and 1975, based, respectively, on the recommendations of the two studies, both failed to become law. There were many factors that precluded their passage, but the overriding obstacle was the absence of a crisis situation. As was pointed out at the beginning of this study, financial reform is crisis-oriented and by 1975 the problems of the financial system had not yet reached sufficiently dramatic proportions for Congress and the public to
perceive the severity of the structural problems facing the financial system. However, by late 1979, the economic situation had deteriorated quickly to provide an environment more conducive to passage of financial reform and monetary control legislation.

The 1980 Act is complex and is composed of a large number of sections that deal with specific areas of financial reform and monetary control. Thus, many of the detailed features of the law will be passed over during the following discussion in order to highlight those aspects which most significantly deal with financial reform and monetary control.

Financial Reform and Structural Change

The overall objective of the financial reform aspect of the omnibus Act is to move the financial system toward a more competitive framework and to reduce, if not eliminate, the artificial heterogeneity that has been maintained among financial institutions via portfolio restrictions and interest rate ceilings. Greater competition is to be achieved by structural changes in the form of (1) removing interest rate ceilings, (2) widening the sources of funds for financial institutions, and (3) expanding the uses of funds and other powers for financial institutions.

Interest Rate Ceilings: The major parts of the omnibus Act dealing with the removal or modification of interest rate ceilings are as follows:

a. There is to be an "...orderly phase-out and the ultimate elimination of the limitations on the maximum rate of interest and dividends which may be paid on deposits and accounts by depository institutions by extending the authority to impose such limitations for 6 years...." (Title II, Section 202)
b. During the phase-out period, authority to determine interest rate ceilings for deposits and accounts among the various federal agencies are "...transferred to the Depository Institutions Deregulation Committee...." (Title II, Section 202)

c. The phase-out of the ceilings can be accomplished "...by the gradual increase in such limitations applicable to all existing categories of accounts, the complete elimination of the limitation applicable to particular categories of accounts, the creation of new categories of accounts not subject to limitation or with limitations set at current market rates, any combination of the above methods, or any other method." (Title II, Section 204)

d. The Committee must exercise due regard for "...the safety and soundness of depository institutions...and shall not increase such limitations above market rates during the six-year period...." (Title II, Section 204)

e. "Upon the expiration of six years after the date of the enactment of this Act, all authorities transferred to the Deregulation Committee by this title shall cease to be effective and the Deregulation Committee shall cease to exist." (Title II, Section 210)

f. "The provisions of the constitution or the laws of any State expressly limiting the rate or amount of interest, discount points, finance charges, or other charges which may be charged, taken, received, or reserved shall not apply..." to mortgage loans. (Title V, Section 501)

g. Business and agricultural loans of $25,000 or more by any person may carry an interest rate (at a rate of not more than 5 per centum in excess of the discount rate, including any surcharge....)" (Title V, Part B, Section 511)

h. Other loans made by insured state banks, branches of foreign banks, insured savings and loan associations, insured credit unions, and small business investment companies may carry an interest rate "at a rate of not more than 1 per centum in excess of the discount rate...." (Title V, Part C, Sections 521, 522, 523, and 524)

i. Federal credit union loans "...may not exceed 15 per centum per annum on the unpaid balance inclusive of all finance charges..." and if economic conditions warrant and appropriate consultation is made "...an interest rate ceiling exceeding 15 per centum per annum rate, for periods not to exceed 18 months..." can be established by the National Credit Union Administration. (Title III, Section 310)
Regulation Q will be phased out over a six-year period by the Depository Institution's Deregulation Committee (DIDC), composed of the Secretary of the Treasury, Chairmen of the Board of Governors, Federal Deposit Insurance Corporation, Federal Home Loan Bank Board, the National Credit Union Administration, and the Comptroller of the Currency (non-voting member). The Committee must meet at least quarterly and comply with the Sunshine Act. The phase-out during the six-year period is at the discretion of the Committee even though "targets" for raising the ceilings are suggested. The phase-out is intended to occur in a manner consistent with economic conditions; however, the Committee has already received considerable criticism from the savings and loan industry for taking steps to eliminate the quarter point differential on money market certificates.

The Deregulation Act provides for certain significant overrides of usury laws. State usury ceilings for first lien residential mortgage loans (including mobile home loans) are permanently eliminated unless a state, prior to the cut-off date (April 1, 1983) specifically rejects the federal override. Business and agricultural loans in excess of $25,000 may be made at rates of five percent above the Federal Reserve discount rate (plus any surcharge) or higher, if permitted by state law, unless a state, prior to the cut-off date, specifically rejects the federal override. Other loans made by insured lending institutions may be made at a rate one percent above the Federal Reserve discount rate, or higher if permitted by state law, unless a state specifically rejects the federal override before April 1, 1983. The loan ceiling for federal credit unions has been raised from 12 to 15 percent and can be increased
to 18 percent under certain conditions. The legislation also eliminates any state restrictions on rates paid on deposits or accounts at depository institutions.

Thus, the omnibus Act has made significant modifications to the structure of interest rate ceilings by (ultimately) eliminating Regulation Q and partially removing state-imposed usury ceilings. There is one notable exception to rate deregulation, however: the zero interest-rate ceiling on demand deposit accounts is retained.

**Sources of Funds:** A number of features of the omnibus legislation significantly increase the ability of depository institutions to attract funds.

a. "...A depository institution is authorized to permit the owner of a deposit or account on which interest or dividends are paid to make withdrawals by negotiable or transferable instruments for the purpose of making transfers to third parties." (Title III, Section 303)

b. Member and nonmember insured commercial banks may "...permit withdrawals to be made automatically from a savings deposit that consists only of funds in which the entire beneficial interest is held by one or more individuals...pursuant to written authorization from the depositor to make such payments or transfers in connection with checks or drafts upon the bank...." (Title III, Section 302)

c. "...An insured credit union may pay dividends on share draft accounts and may permit the owners of such share draft accounts to make withdrawals by negotiable or transferable instruments or other orders for the purpose of making transfers to third parties." (Title II, Section 305)

d. The Home Owner's Act of 1933 is amended so as not to "...prohibit the establishment of remote service units by associations for the purpose of crediting savings accounts, debiting such accounts, crediting payments on loans, and the disposition of related financial transactions..." (Title III, Section 304)

The expansion of NOW (negotiable order of withdrawal) accounts to all depository institutions represents a significant inroad by nonbanks into
what has traditionally been a bank market; however, NOW accounts can only be held "...by one or more individuals or by an organization which is operated primarily for religious, philanthropic, charitable, education, or other similar purposes and which is not operated for profit," (Title II, Section 303). Thus banks retain their monopoly over demand deposit accounts, with the small exception that federal mutual savings banks can now accept demand deposits in connection with a business loan relationship, (Title IV, Section 408). Banks also receive permanent authority to maintain ATS (automatic transfers from savings) accounts.

Savings and loan associations are permitted to maintain RSUs (remote service units) and credit unions are authorized to offer share draft accounts, which for all practical purposes are the same as NOW accounts.

The legislation increases the amount of deposit insurance from $40,000 to $100,000 for deposits and shares insured by the FDIC, Federal Savings and Loan Insurance Corporation, and the NCUA. While not directly representing an increase in the sources of funds, the higher insurance level should provide marginal help for depository institutions in competing with money market mutual funds for medium size accounts. A problem remains with respect to deposit insurance, however. Premiums have been and still are determined in proportion to deposit size and, as such, they are independent of any risk assessment. Thus, it has been claimed that they encourage unduly risky behavior on the part of depository institutions [28].
Uses of Funds and Expanded Powers: All depository institutions benefit in varying degrees from the deregulation features of the omnibus Act; however, federal savings and loan associations benefit most significantly as the following illustrates:

a. A number of categories of savings and loan association loans (account loans, single-family and multi-family mortgage loans, U.S. Government securities, home improvement and manufactured home loans, loans to financial institutions, etc.) can be made without regard to percentage of asset limitations, which were previously imposed on some categories of asset. (Title IV, Section 401)

b. Savings and loan associations are authorized to make single and multi-family mortgage loans ranging from 66 2/3 to 90 percent of appraised value. (Title IV, Section 401)

c. Savings and loan associations are authorized to make commercial real estate loans, consumer loans and invest in, sell, or hold commercial paper and corporate debt securities up to 20 percent of their assets. (Title IV, Section 401)

d. "An association is authorized subject to such regulations as the Board may prescribe, to issue credit cards, extend credit in connection therewith and otherwise engage in or participate in credit card operations." (Title IV, Section 402)

e. "The Board is authorized and empowered to grant by special permit to an association applying therefor (sic), when not in contravention of State or local law, the right to act as trustee, executor, administrator, guardian, or in any other fiduciary capacity...." (Title IV, Section 403)

Federal savings and loan associations receive increased flexibility to make mortgage loans, the most important abilities being the recognition of a loan-to-valuation calculation (which may come to replace the current limit of $75,000, previously imposed in the secondary mortgage market) and the expanded opportunity to make construction loans. Their asset powers are further expanded henceforth, so that they may make consumer and business loans (up to 20 percent of
assets), offer credit cards, and provide other services traditionally dominated by banks.

Mutual savings banks, the weakest of the thrift institutions, are given some increased powers by the Act. They may, for example, henceforth make commercial, corporate, and business loans not to exceed 5 percent of their assets made within the State where the institution is located or within 75 miles of the bank's home office, (Title IV, Section 408). Credit unions receive relief in the use of their funds in that the interest ceiling on their loans is raised from 12 to 15 percent (and may go even higher under some special conditions).

The legislation provides that the President establish an inter-agency task force to study and make recommendations regarding options available for (a) thrifts to engage in asset-liability management given the inherent characteristics of thrift portfolio structure, (b) thrifts to pay market interest rates during periods of high inflation, and (c) relevant federal agencies to assist thrifts in times of economic difficulty (Title IV, Section 406).

Money Control

The omnibus Act provides for a considerable expansion and centralization of the powers of the Federal Reserve. The changes are intended to improve the Reserve System's control over monetary aggregates, extend the central bank's direct influence to nonbank depository institutions, and eliminate the issue of declining membership in the Federal Reserve System.
Control over Monetary Aggregates: A number of features of the omnibus legislation are designed to increase the control of the Federal Reserve, acting through the Board of Governors, over all depository institutions and to simplify the structure of reserve requirements.

a. "Each depository institution shall maintain reserves against its transaction accounts as the Board may prescribe by regulation solely for the purpose of implementing monetary policy." (Title I, Section 103)

b. "Each depository institution shall maintain reserves against its nonpersonal time deposits...as the Board may prescribe by regulation solely for the purpose of implementing monetary policy." (Title I, Section 103)

c. "The Board may, upon the affirmative vote of not less than five members, impose a supplemental reserve requirement on every depository institution of no more than 4 per centum of its total transaction accounts." (Title I, Section 103)

d. "Foreign branches, subsidiaries, and international banking facilities of nonmember depository institutions shall maintain reserves to the same extent required by the Board of foreign branches, subsidiaries, and international banking facilities of member banks." (Title I, Section 103)

e. The Federal Reserve Act is modified "to require any depository institution specified in this paragraph to make, at such intervals as the Board may prescribe, such reports of its liabilities and assets as the Board may determine to be necessary or desirable to enable the Board to discharge its responsibility to monitor and control monetary and credit aggregates." (Title I, Section 102)

f. Under "Miscellaneous Amendments" to Title I, assets eligible for open market operations are defined to include "...obligations of, or fully guaranteed as to principal and interest by, a foreign government or agency thereof. (Title I, Section 107)

Transactions accounts, defined to include not only demand deposits, but also negotiable order of withdrawal (NOW) and automatic transfer (ATS) accounts and most other consumer deposits, transferable to third parties, are now subject to uniform reserve requirements; irrespective
of the type of depository institution at which they are held. A 3 percent reserve will be required on the first $25 million of transaction accounts held by any institution. On amounts above this figure, the ratio is initially set at 12 percent. This ratio can vary between 8 and 14 percent, while the $25 million benchmark figure will be adjusted annually. Nonpersonal time deposits, defined as time deposits (or accounts) belonging to other than a natural person, and depository institution purchases of Eurodollars, will initially have a reserve ratio of 3 percent. This ratio can be varied between 0 and 9 percent. Thus, reserve requirements are simplified in principle: henceforth they apply to only three deposit categories.

Reserves still earn no interest income. They can be satisfied by holding deposits at one of the Federal Reserve banks or by certain types of "pass through" arrangement, which are specified in the Board's September 1980 revision of Regulation D. The Board has the discretion to permit depository institutions to maintain all, or a portion of their required reserves, in the form of vault cash. However, all institutions, both member and nonmember banks, savings and loan associations, mutual savings banks, and credit unions, whether state or federally regulated, become subject to the same reserve regulations.

The Board also has the power to impose supplemental reserve requirements if economic conditions warrant and after certain procedures are followed. Supplemental reserves can earn interest and may be satisfied by vault cash.

The changes in reserve requirements are being introduced gradually: over an eight-year period for nonmember banks and over a four-year
period for member banks. The phase-in will not apply to any depositor account (such as a NOW account) established as a direct result of the omnibus Act. In states such as those in New England, where NOW accounts were previously authorized, the new requirements will, however, be subject to the gradual adjustment.\footnote{9}

The Board has received significantly increased power to impose reporting requirements on all depository institutions for monetary policy purposes. In addition, it can impose different reporting requirements for the various types of depository institution.

The ability to use foreign obligations in open market operations has been a relatively unnoticed \((\text{except by Peter Berman and Alfred Olbrycht [5]})\) element that has interesting implications for foreign exchange operations.

Control over Non-Depository Institutions: The law provides for a considerable expansion of Federal Reserve power over non-bank depository institutions. For example, the establishment of uniform reserve requirements extends the influence of the Federal Reserve in two ways: it creates new powers and transfers to it old powers that formerly belonged to other agencies. Moreover, nonmember institutions will be able to avail themselves of Federal Reserve services, which were previously confined to member banks, under the following provisions of the omnibus Act:

a. "Any depository institution in which transaction accounts or nonpersonal time deposits are held shall be entitled to the same discount and borrowing privileges as member banks." (Title I, Section 103).

b. "All Federal Reserve Bank services (covered by the fee
schedule) shall be available to nonmember depository institutions and such services shall be priced at the same fee schedule applicable to member banks..." (Title I, Section 11A).

The central bank's discount facilities will be available to all depository institutions as will all other services such as currency, coin, and check clearing and collection, wire transfer, and the automated clearinghouse. To the extent that nonmember institutions utilize the Federal Reserve facilities, its influence will be enhanced.10

The Declining Membership Issue: The increasing number of small and medium sized banks leaving the Federal Reserve System during the past decade created significant concern, for it reduced the domain of Federal Reserve influence. However, the membership issue is effectively solved by the new Act. All depository institutions have, de facto, become members of the Federal Reserve System since they are subject to the same reserve requirements, all can borrow at the established discount rate, all need to report their activities to the Board and all can use the System's facilities at prices which reflect their cost of production. Both members and nonmembers must now pay for the services they use, so that the availability of free services no longer (partially) compensates for the member banks' cost of maintaining reserves. However, member banks will continue to receive a return on their holdings of Federal Reserve stock and to benefit from whatever positive image membership entails.
IV.

THE IMPACT OF DeregULATION ON THE FINANCIAL SYSTEM

It will take time before the impact of the deregulatory aspects of the omnibus Act will be felt, since the legislation provides for a lengthy period of transition. Further, time will be required for financial institutions to adjust to the more competitive environment. In evaluating the delay, it must be kept in mind that the current structure of the financial system has evolved slowly around a set of constraints on competitive behavior that were established over 40 years ago.

The financial repercussions of deregulation can be examined from at least two perspectives. First, there are general effects pertaining to the efficiency and stability of the financial system. Second, there are specific effects which will be felt disproportionately among the different categories of depository institution. Banking is the largest and the most important of these categories. Consequently, the impact of the Act on the banks will be given particular attention in the discussion below.

Improved Efficiency and Stability of the Financial System

As the system moves toward greater competition, failure among financial institutions will become more common. Many institutions, especially smaller ones, have received considerable protection from the regulatory constraints, which are now being removed (and will not be compensated by the "reregulatory" aspects of the Act). Increased concentration among banks and thrifts will also occur as competively
weaker institutions are merged with their larger and stronger competitors. While these are natural results, they also present serious political issues for the deregulation process. The financial system has evolved over the past several decades in an environment provided by regulators who believed that failures among financial institutions were to be prevented. The need to change this attitude during the next few years will present a challenge to the current regulatory framework.

The Act’s overall impact on the stability of the financial system, and on the suppliers and consumers of financial services, will be positive. The system will be better able to satisfy the three basic functions that were outlined in the introduction. First, a breakdown of the artificial heterogeneity among banks and nonbanks and the removal of constraints on explicit interest rate competition will improve the efficiency of the flow of funds between lenders and borrowers. The payment of implicit interest is generally inefficient. Under it, consumers receive payment as services are consumed, while the value of these services may be unrelated to the size of consumers’ deposits. Further, services tend to be overutilized where they are offered at prices below their cost of production.

Smaller and less sophisticated consumers, unable to obtain explicit compensation for their deposits, in the past have had little choice in the mix of implicit and explicit return on their balances. Large and sophisticated economic units, on the other hand, have been able to invest in short-term financial assets that are readily convertible into transaction balances. In this way, the larger depositors have, even in the past, had the opportunity to avoid the
prohibition on the payment of interest on demand deposits. The Act will, henceforth, allow small depositors the opportunity to earn a financial return on their transaction balances. It will also allow consumers more choice in that they will become able to opt either for implicit or explicit returns on their transaction and savings deposits. Indeed, the payment of implicit interest may be expected to remain an important part of the competitive framework, for it may be preferred by economic units who face high marginal tax rates.

A second of the Act's benefits will be that the more competitive environment will increase the chance that inefficient institutions will fail and/or merge with others. Such actions should increase the efficiency of the remaining firms and, thus, enhance the overall soundness of the financial system. The portfolio restrictions and interest rate ceilings of the past (and present) have exposed depository institutions to serious liquidity problems and to periods of disintermediation. The removal of these restrictions will allow well-managed banks and thrifts to better serve the financial needs of the public and to profit from that provision.

Institutions unable to serve the public will fail. Thus, it will not be paradoxical that the soundness, stability, and relevance of the financial system will be enhanced. This optimistic judgement appears, at first sight, to be invalidated by the unsound and unstable financial environment experienced during the Great Depression. However, the period from 1929 through 1933 cannot be used to judge the impact of failures among financial institutions. The successive banking panics of that period occurred in an environment without deposit insurance and with a
central bank that either would not, or could not, act as a lender of last resort. Today the environment is different: deposit insurance is almost universal among depository institutions and there is a better understanding of the fundamental role of the central bank. These improvements should prevent the increased rate of failure among deposit institutions from developing into a financial panic. On the contrary, the removal of weak institutions should prove beneficial.

The forms of service which the public desire change with the times. Thus, the third benefit from the Act will arise from the institutions' greater flexibility to adapt to new and changing environments. The recent liquidity problems arose from their inability to adapt to environmental changes, such as the varying rates of inflation, high and rising interest rates, and yield curve shifts, which have been characteristic of recent years. The relaxation of portfolio restrictions, the breakdown of the artificial heterogeneity between financial institutions and the elimination of Regulation Q, will, henceforth, allow the necessary adaptations to be made. While the omnibus Act is only one step in the process of deregulation, it will not only allow institutions to adjust to changing economic conditions, but it will also permit them to adopt the new forms of financial exchange made feasible by advances in computer technology.

The Comparative Impacts on the Thrift and Banking Sectors.

While the general impact of the deregulation is clear, it is more difficult to assess the likely effects on the individual sectors, such
as the banking and thrift industries. However, at least two broad implications can be suggested. The first is that the thrift industry in general, and the savings and loan associations in particular, can benefit from their increased access to the loan and deposit markets that were previously dominated by banks. The increased access was provided in response to a concern for the viability of the thrift industry, a subject which is given specific consideration throughout the Act. The following two features of the legislation illustrate this concern:

a. Regarding the administration of the discount and borrowing functions of the Fed, the Board and the Reserve Banks "...shall take into consideration the special needs of savings and depository institutions for access to discount and borrowing facilities consistent with their long-term asset portfolios and the sensitivity of such institutions to trends in the national money markets." (Title I, Section 103).

b. Each member of the Deregulation Committee is required to prepare separate annual reports dealing with an assessment of whether the removal of the interest rate differential between banks and thrifts will "...adversely affect the housing finance market or the viability of the thrift industry" and to recommend measures to "...ensure a steady and adequate flow of funds to thrift Institutions and the housing market." (Title II, Section 206).

The second sectoral impact also gives more advantages to thrifts than to banks. While commercial banks will receive benefits from the deregulation in the form of lower reserve requirements, the chance to offer NOW accounts, and the removal of Regulation Q ceilings, they will also encounter significantly increased competition in many areas. The Act introduces two new elements into the competitive framework faced by banks.

First, there will be an "instrument shift" effect on bank performance, since interest-bearing transaction accounts are a substitute for demand deposits. The shift effect refers to the movement of deposits
within a bank from demand deposits to the new interest-bearing accounts while thrifts will also be subject to this same effect since individuals holding savings deposits at thrifts may shift to NOW accounts, the cost of the shift effect may be greater for banks than thrifts because only banks stand to lose their zero-interest demand deposits; thrifts already pay comparable rates on their passbook accounts and higher rates on their other liabilities.

Second, there will be a "competitive effect" on bank performance resulting from increased competition from nonbank institutions for household transaction accounts, household nonresidential borrowing, and other activities such as credit card and trust services. The competitive effect might, alternatively, be called the "homogeneity effect" since deregulation reduces the artificial differences among financial institutions and offers consumers a wider choice of institution from which to obtain service.

The Impact on Bank Earnings

There is a considerable debate regarding the net impact of these two effects on the banking system. There are many possible theoretical views; however, three appear particularly useful in the present context and have recently been reviewed in some detail by Asay and Kilcollin [1].

The first two theoretical effects predict a decline in bank earnings, at least in the short run. On the one hand, banks as well as savings and loan associations have avoided regulation Q by paying implicit rather than explicit interest on deposits in the forms of free
services and "convenience banking" which frequently, in those states
which permit bank branching, involve a heavy capital investment in
extensive branching networks. Any shift from implicit to explicit rate
competition will render a significant part of that capital stock
redundant to long-run equilibrium needs. Then those banks or thrifts not
heavily involved in branching networks will be at a relative advantage.
On the other hand, banks have held a monopoly in the provision of
transaction accounts since demand deposits were first introduced in the
1870s. Being the sole supplier of demand deposits conferred a
considerable advantage on banks in many of their markets, because they
alone could offer "one-stop" banking services. The Act, by extending to
nonbanks the ability to offer the same or close-substitute services,
reduces the banks' monopoly and this, too, may adversely affect their
earning ability.

The third theoretical view regarding bank earning potential argues
that implicit payment is not necessarily inferior to explicit interest
from the standpoint of the consumer, especially when the income tax
structure is taken into consideration. Further, banks still retain their
monopoly over the provision of demand deposits. While there will be no
essential difference between a demand deposit and a NOW account as far
as individuals or nonprofit organizations are concerned (apart from the
interest payable on NOW accounts), institutions organized for profit
cannot hold NOW accounts, but remain confined to using demand deposits.

In addition, banks will actually be in a better position than
thrifts to offer deposit substitutes, because of their past experience
in servicing transaction accounts and their greater ability to dovetail
packages of financial services to customer needs. Further, during the implementation of the Act, the Depository Institutions Deregulation Committee has established regulations which constrain banks and thrifts to offer the same rate on NOW and ATS accounts. In the absence of the traditional thrift interest rate advantage, institutions which already have a branching network and which can, therefore, continue implicit interest rewards, may benefit in any competitive battle. In response, to attract new transaction accounts, thrifts may offer cut-rate services. In which case, it may happen, as it appears to have done in New England, that banks will retain their large, profitable accounts while the small, high-cost, "lemon" accounts will go to the thrifts. Thus, according to this third view, bank earnings need not necessarily fall as the deregulation is implemented.

The Impact on Thrift Earnings

The effects of the Act on thrift earnings is also problematic. Here, three factors are relevant. First, the new asset powers give thrifts the opportunity to increase earnings. Second, to the extent that thrifts use their new asset powers, they have accumulated little experience in exercising some of them and, therefore, risk making losses because of their inexperience. In this event their earnings would not rise. Peterson [39] points out that, whereas interest rates on consumer loans are typically higher than mortgage rates, the origination, collection and loan-loss costs of making these loans are also higher, so that earnings may not be increased by shifting assets into consumer loans. In fact, state-chartered savings and loan
associations in Texas that have had the power to make consumer loans for
some years, have made small use of the opportunity for this reason.
Third, costs may also rise when depositors shift to transaction
accounts. While it is true that thrifts are unlikely to incur as great
an increase in interest costs from the shift effect as banks, thrift
operating costs may rise faster than the banks', because thrifts, unlike
banks, will have to establish the machinery to service the new accounts.

New England Experience

Unfortunately, there is insufficient past experience against which
to evaluate these different predictions. However, the New England
experience offers some insight and suggests that bank earnings are
likely to decline, at least in the short-run, in response to the intro-
duction of NOW accounts [1] [32]. This experience must be interpreted
carefully, however, for the situations are not entirely parallel. The com-
petitive position of thrifts relative to banks is much stronger in New
England than in other parts of the country. Further, the north-east
region has experienced an unrepresentative economic slow-down during
much of the 1970s. Finally, the deregulation bill provides for a much
more competitive environment than existed in New England. On balance and
in comparison to the experience in New England, therefore, it is
difficult to predict whether banks nationwide will fare better or worse
relative to thrifts in the forthcoming competitive battle.

As the country enters the first phase of the deregulation that will
continue over the next few years, it has little knowledge of the likely
impacts on the various types of thrift institution and on the banking
system. Both the short-term and long-run adjustments made by the depository institutions will critically depend on the particular path adopted by the DIDC and others for the deregulation process. There are two questions at issue. The first asks whether the efforts of the opponents of deregulation, will be successful in reversing some of the deregulation features of the Act: that is, whether "reregulation" will occur. The second asks whether the present first steps in the deregulation process will be followed through by further relaxations of constraining legislation. The important issues of the McFadden Act, restrictions on entry into the deposit institution industry, federal overrides of state-imposed restrictions on banking structure, and the payment of interest on demand deposits, are all essentially ignored by the Act. Until these issues are addressed the ultimate success of the deregulation process is unsure.

However, it does appear that thrifts, particularly savings and loan associations, will have the potential to present a significant competitive threat to the banking community. How fast nonbank institutions will take advantage of their newly acquired powers is yet unknown. There is, however, preliminary evidence that thrift institutions, especially the larger ones, plan to aggressively market transaction accounts and consumer credit services. The smaller institutions may proceed more slowly, however. In fact, as the evidence from Maine, Massachusetts and Texas suggests, thrifts may not take advantage of all of their new powers, such as the authorization to issue credit cards. Small institutions may seek to find a way to avoid the costs of establishing and maintaining the facilities necessary to service
transaction accounts. They might do this, for instance, by offering debit cards marketed by one of the national credit card companies in conjunction with their own NOW accounts. The particular path followed by savings and loan associations and other nonbank institutions is only just beginning to be revealed in the announcements of marketing strategies and cannot be finally evaluated at this point; however, there is no question that banks will face new and significant competitive forces during the 1980s.

The Impact on the Viability of Depository Institutions

Despite the anticipated benefits of the Deregulation Act, concern remains for the viability of financial institutions. That concern is expressed both for the welfare of financial system in general, and of the banking and thrift sectors, in particular. These themes have constantly recurred during the inflation of the past twenty years and they continue to give rise to discussions of ways to change the structure of the financial system in order to improve its viability. The risks to which depository institutions are exposed and which threaten their viability can be categorized into three types: liquidity and disintermediation, term structure, and credit or default.

Liquidity risk arises from variability in the volume of liabilities and, therefore, in the volume of assets. Historically, the growth rate of liabilities has varied cyclically as the volume of savings in the economy ebbs and flows. The imposition of interest rate ceilings on liabilities exacerbates the cyclical pattern by encouraging disintermediation when interest rates on comparable, unregulated assets rise
above the depository institution rate-ceilings. The variability in liability volume presents depository institutions with problems in forecasting and portfolio management. When deposit inflows are strong, there may be difficulty in finding profitable outlets for funds and institutions may accept lower rates of return or increased risk. When inflows are low or negative, banks and thrifts may be forced to liquidate assets. When assets are not readily marketable, losses can occur.

Term structure risk arises from variability in the price of liabilities and assets and, equivalently, in the interest rates that they earn. Traditionally, thrifts, and to a lesser extent banks, borrow short at variable rates, while lending long at fixed rates. Thus, profitability is threatened when yield spreads are low or negative. While positive yield spreads are neither necessary nor sufficient to ensure profitability, their disappearance presents a serious problem for management [30].

The difficulties of forecasting interest rates have been exacerbated by the recent substantial and sustained inflation. The barriers to successful interest rate forecasting are twofold. First, financial institutions and others seem to have frequently, if not systematically, underestimated future inflation and nominal interest rates. As a result, long-term loan rates have been set too low for profitability. Second, there is evidence that anticipations of inflation are more readily incorporated into short rates than long [11]. If this finding is correct, then even if future inflation and interest
rates are correctly forecast, negative yield spreads may continue and, with them, the problem of thrift profitability.

Credit risk arises from the possibility that the borrower either cannot or will not repay his debt. Historically, over the past three decades, depository institutions appear to have held this risk successfully in check. Recent changes in the bankruptcy laws and increases in the risks of international lending may reverse this trend, however [44].

Analysts have claimed that these three types of risk, especially that of disintermediation and earnings variability have been increased by excessive regulation and government interference in the intermediation process. The omnibus Act responds to these criticisms and explicitly addresses the problems of the viability of depository institutions.

However, the legislation deals specifically with only one of the above three types of risk facing financial institutions. The removal of the interest rate ceilings will significantly contribute to reducing the liquidity risk associated with fluctuations in market rates of interest about the ceiling. The other two types of risk, term structure and default, are either ignored or made more severe by the omnibus Act. While the financial reform package has no significant implications for the default risk faced by institutions, the recent liberalization of the bankruptcy laws has increased that risk.

Term structure risk is actually increased by the Act. Many institutions still make fixed-rate long-term loans, primarily to finance real estate purchases and the adoption of variable rate mortgages has
proceeded slowly. The Act does nothing to relax the constraints on the institutions' ability to offer the variable-rate and shared-appreciation mortgage contracts that would be attractive to management. Control over the terms of these loans still resides with the bank and thrift regulatory agencies. At the same time, the Act, in attempting to reduce the variability in the quantity of depository institutions' liabilities, will serve to increase the variability in their price. Recent changes in Federal Reserve operating procedures have increased the volatility of market interest rates. In this environment, the dangers of management errors are greater. As interest rate competition for deposits increases among institutions, the possibility of adverse interest rate spreads becomes increasingly serious.

Thrift managements are, therefore, being forced to abandon the provision of fixed rate loans. This abandonment will shift the burden of term structure risk to the borrower's portfolio and eliminates one of the services the public has come to expect from depository institutions --- the assumption of interest rate risk in an inflationary environment.
V.

THE IMPLICATIONS FOR MONETARY POLICY

In the conduct of monetary policy several decisions have to be made. The first is fundamental: it concerns the role which monetary policy is to play in the economy. On the one hand, its contribution might be perceived minimally as providing a sound and stable financial environment which allows agents—principally those operating in the private sector of the economy—to pursue their own (and, thus, society’s) objectives. On the other hand, a larger role might be construed: of choosing and actively pursuing objectives for the economy set in terms, for example, of employment, price stability, and economic growth.

In the former case, policy could be set to follow a fixed, "hands-off" rule to let, for example, the money supply grow at a constant rate over a long horizon. In this case, demands on policy-makers are not severe once the rule has been chosen and set in place. However, numerous decisions still face, and repeatedly will face, activist policy-makers. What objectives are to be established for the economy’s performance? How will policy be formulated, implemented, and evaluated? Friedman [15] and [16], Simons [45], and Warburton [58] have pointed out that the risks inherent in these decisions can destroy the discretionary intent.

The omnibus Act of 1980 does not commit the authorities to either a discretionary or a fixed-rule approach, but by making the Federal
Reserve more independent of external pressure, and by strengthening the ties between the policy instruments and the policy goals, it makes either approach the more viable. The successful implementation of either a fixed-rule or a discretionary approach to monetary policy requires the favorable coincidence of three fundamental factors. First, the central bank needs sufficient independence from outside pressure to be able to pursue its policies uninterruptedly. Second, in order successfully formulate policy, it is essential to have a good understanding of the processes by which monetary policy influences the economy. Third, to appropriately implement policies, the central bank requires both firm command over tools to influence strategic economic variables and accurate data against which to monitor the economy's progress.

The Act's contributions to monetary reform are not introduced in isolation, rather they are part, an important part, of a several-pronged recent attack on the problems of monetary policy. Consequently, in this section the Act will be examined in the wider context of the recent reform program.

Federal Reserve Independence

No knowledgeable observer of monetary policy regards the Federal Reserve as truly independent of both the Administration and Congress. The Federal Reserve System maintains a formal appearance of independence, an appearance manifested in a lack of budgetary control by Congress, a tradition of long-term appointments for its Board members, and an exemption (in the most part) from audit by the General Accounting Office. Nevertheless, the Federal Reserve has shown itself to be
susceptible to various types of political pressure, which have, at times, interfered with the pursuit of the Board's declared policies. For example, the System's sensitivity to political outcries over high and unstable interest rates significantly contributed to the nation's excessive rate of monetary growth and, hence, to its inflationary inheritance in the 1980s.

Kane has recently suggested that the Act makes a contribution to the future success of anti-inflationary monetary policy beyond the more obvious changes in technical operating procedures that are discussed below. By effectively solving the membership issue, the Act removes the issue from the political arena. In so doing, it ends the Federal Reserve's need to compromise on other issues in order to prevent further erosion of its membership domain. This factor should substantially increase Federal Reserve independence from both Congress and the Administration. "This enhanced political muscle makes it politically feasible for the Fed to take more effective action against secular inflation in the 1980s than it has at any time during the past two decades," [29, p.40].

The Act should also contribute to the achievement of Federal Reserve objectives by more firmly establishing its dominance over the other government and quasi-government agencies that regulate the depository institutions. For example, the supremacy of the Federal Reserve is enhanced by the replacement of the Inter-Agency Co-ordinating Committee, which retained only an advisory role, by the Depository Institutions Deregulation Committee, which has the power to make binding decisions and which elected, Paul Volcker, Federal Reserve chairman as
DIDC chairman. The Act also gave the authority to set reserve requirements to the Federal Reserve Board rather than to the regulators and it ended the Federal Home Loan Bank Board's veto power over decisions concerning deposit rate ceilings. The Act may, therefore, in the future give predominance to the Federal Reserve's goals over the other agencies' preferences. Where the interests of the housing and thrift industries conflict with the Board's anti-inflationary goals, the latter may prevail to a greater degree than in the past.

Policy Procedures: The Channels of Monetary Policy

During the last fifteen years, fiscal policy has been pro-inflationary and monetary policy has borne the brunt of stabilization. Monetary policy has failed in its anti-inflationary task, partly from a lack of effective independence that has made it willing to endorse the fiscal outcome by monetarizing the federal deficits. This however, is not the only cause of the policy failure. Beyond the lack of resolve also lies deficiencies in Federal Reserve's ability to conduct discretionary monetary policy. Success in policy-making has three prerequisites: an adequate understanding of the workings of the economy and the effects of monetary policy on it, access to accurate and timely data on which to base and monitor policy, and command over tools to implement policy decision.

Part of monetary policy's recent problem has occurred because the policy instruments, which the Federal Reserve controls in the conduct of open market operations, are only indirectly linked to its final policy goals for employment, prices, and output. Thus, Federal Reserve is
forced to use an intermediate, or operating target. For example, the Board may choose either the economy’s interest rate or its stock of money as its intermediate target. Its power to influence one or other of these variables will determine its success or failure in achieving its final policy goals.

The central bank does not directly control either the interest rate or the stock of money. What it does govern, in the day-to-day conduct of open market operations, is either the quantity of reserves made available to depository institutions or the price at which these reserves are traded. That is, at the tactical level, the Federal Reserve can control either the monetary base or the federal funds rate.

The Board then has a choice between these two policy instruments (the monetary base or the federal funds rate) as well as between two intermediate targets (the economy’s interest rate or the stock of money). These choices give rise to four possible models for transmitting the will of the Federal Reserve to the economy. On the one hand, the Federal Reserve System could use the quantity of money as intermediate target together with either the monetary base or the federal funds rate as the instrument. On the other hand, it could use the interest rate as the intermediate target with one or other of the same instruments.

Policy Before October 1979

Over the years the Federal Reserve has developed several different approaches to impose its wishes on the economy (Wallich and Keir [56]). By the late 1960s, however, the approach being used was essentially to
chose an interest rate in both cases: the Treasury bill rate as the intermediate target and the federal funds rate as the instrument.

The channels of policy can be seen more clearly by supposing, for simplicity, that the central bank has just one economic goal, the nominal or market value of GNP. When there is excess capacity in the economy, the level of GNP will be determined principally by the level of aggregate demand in the economy: that is, by the sum of expenditures for consumption, investment, government activities and net exports. Consumption and investment spending respond to changes in the rate of interest; they are higher when interest rates are lower. Suppose the relationship is that expressed by the solid line in Figure 1. Then, having set a goal for GNP at \( Y^* \), the Federal Reserve can deduce the value of the Treasury bill rate, \( r^* \), which is expected to produce \( Y^* \).

In the past, the Federal Reserve has not been content to rely solely on this model to implement its policies. It has also exerted influence on the allocation of credit in the economy. The Board recognized that high interest rates would deter economic growth, especially in certain interest-sensitive sectors of the economy. It was pressured to shield these sectors from curtailment by subjecting the sources of their funds to interest rate ceilings. While the intent was to prevent the costs of such industries (such as housing) from rising, the ceilings had an initially unintended result. When market rates rose above the ceilings, the supplies of credit to these industries dried up as disintermediation occurred. Thus, the housing and related industries came increasingly to bear the brunt of the Federal Reserve's imposition of credit rationing.
FIGURE I

Monetary Policy Before October 1979
Once this process was recognized, the Federal Reserve had the option of deliberately using the disintermediation process to slow down the economy. In this way, the effects of the restraint could be easily predicted and substantially confined to certain sectors of the economy.

The strategic relationship between interest rates and GNP is subject to uncertainty. At some specified probability level, the range of achievement in GNP resulting from an interest rate, \( r^* \), lies between \( X_1 \) and \( X_2 \). In the present representation this variability is quite substantial. The next task for Board staff is to set the federal funds rate instrument to provide the target value for the Treasury bill rate. As the bill rate follows the federal funds rate quite closely, this task is not difficult. Infact, in setting the federal funds rate, the Federal Reserve is essentially controlling the bill rate. Consequently, in this model, the principal source of variability lies in the strategic relationship between interest rates and the level of GNP.

A good policy is one which obtains the desired expected value for the policy goal and which minimizes the variance of actual policy outcomes about the targeted value. The present model has the merit of containing, in its policy chain, only one relationship that is subject to variability. The problem with using it, however, is that it will only achieve the policy's targeted value, on the average, in an economy with excess capacity. The model is misspecified for an inflationary environment.

In an under-employed economy, low interest rates can successfully stimulate consumption and investment to raise aggregate demand, output
and employment, without raising prices. However, as the economy becomes more fully employed, low interest rates continue to stimulate aggregate demand, and to raise the nominal value of GNP, but they do so by increasing prices rather than output. Inflation is then in progress.

Regardless of whether there is inflation or not, the rate of interest, relevant to determining expenditure and the nominal value of GNP, is a real rate, that represents future purchasing power. When there is no inflation the real rate is equal to the nominal rate and the conduct of policy is relatively easy. However, once people come to anticipate inflation, the real rate of interest will be less than the market rate. In measurement it may be approximated by the market rate minus the anticipated inflation rate.

Thus the advent of inflation complicates the Board's stabilization task. In order to successfully target GNP, the Board has to set the appropriate real rate of interest. The rate which the Federal Reserve controls in the course of open market operations is a nominal rate, however. To effect policy, the Board staff must set the federal funds rate high enough to cover both the real rate of interest and the rate of inflation expected by the public.

Consequently, although the Federal Reserve's early model has only one important source of variability, it may not produce the desired expected value for prices and real output. In fact, during the late 60's and the 1970s, the Board systematically set the federal funds rate too low, stimulated the economy too much, and promoted inflation. The extent of the inflationary problem was reflected in the growth of the monetary aggregates during this period.
Monitoring the Monetary Aggregates

Critics of the Federal Reserve policy argued that the Board could avoid the inflationary policy error by monitoring the quantity of money in addition to, or in place of, the interest rate. However, imposing the stock of money as an intermediate target on the Federal Reserve’s model of the economy, complicates it and substantially increases the opportunities for policy errors. In this case, the channels of such a policy would run from the federal funds rate, to the stock of money supplied by the banking system, through the short-term interest rate, to the level of GNP.

It is possible to operate such a model, that is, to calculate first, the rate of interest which will give the desired value of GNP; second, the stock of money which will produce that rate of interest; and third, the federal funds rate which will provide that stock of money. There will, however, be variability in each of the relationships. For example, in Figure 2, setting the federal funds rate at \( r_F^* \), might produce the money stock anywhere between \( M_1 \) and \( M_2 \). Money in this range could produce a Treasury bill rate ranging between \( r_1 \) and \( r_2 \). Finally interest rates in this interval could produce GNP anywhere in the wide range, \( Y_1 \) to \( Y_2 \).

Thus, a model with these extended channels is complex, unwieldy, and subject to considerable potential variability in outcome. Consequently, the Federal Reserve chose to continue to use the interest rate as the intermediate target and to use the money stock, for which it announced targets, only as a check on policy progress. However, by retaining the interest rate as the principal intermediate target, to
Monetary Policy

Monitoring the Interest Rate and The Monetary Aggregates

Note: no availability is assumed in the money demand function, $M^d$. 
take precedence over the monetary aggregates whenever conflict between the two goals arose, the Federal Reserve perpetuated the problem of underestimating the real rate of interest. Policy remained inflationary for most of the period.

Accurate and Timely Data

Thus, the policy models available to the Federal Reserve at the end of the 1970s had substantial deficiencies. The picture was further complicated, by the delay experienced between the application of any policy stimulus and its effects on the economy. In these circumstances, it would have indeed been useful to have data to provide diagnostic checks on the economy's progress. Accurate and timely data on changes in the money aggregates could provide such needed information. As the decade progressed, however, questions about the appropriateness of the Federal Reserve's monetary data became increasingly frequent. The problem was twofold. First, the Federal Reserve placed the most stringent reporting requirements on member banks, particularly on large member banks. Estimates of the economy-wide money stocks were made by multiplying the reported data by a scaling factor. As the decade progressed, interest rates rose and the tax-like effects of reserve requirements gave increasing incentives for member banks to leave the system. As more and more banks, including large banks, left the system, the data coverage was reduced and the national monetary estimates became increasingly unreliable; being subject to later revision when more complete information became available.

Second, banks remaining in the system had increasing incentives to
minimize their reserve holdings by replacing liabilities, which had high reserve requirements, by others which had no, or low, requirements. This incentive for member banks coincided with the public's wishes to earn interest on their money balances: for deposits carrying reserve ratios also carried interest-rate ceilings. Consequently, new instruments, such as ATS accounts, repurchase agreements, and Eurodollar balances, came into being to benefit both banks and the public. The question then arose whether the old definitions of the monetary aggregates, which excluded these innovated assets, remained relevant to the contemporary economy. Further, some monetary services were being provided by norbanks, as NOW accounts and money market mutual funds extended the provision of transaction accounts to thrifts and nondepository institutions.

The question of the definition of the money aggregates was not of paramount importance to policy-makers as long as interest rates provided the channels for policy stimuli. But, as time went on and as money came increasingly to be used as an indicator of policy performance, and later as monetarists pressed the Federal Reserve to switch to a monetary aggregate intermediate target, the need to redefine the aggregates became more urgent.

The New Monetary Policy

The policy failures of the mid and late 1970s led the Federal Reserve to the repeated and seemingly unco-ordinated emergency actions of November, 1978, October 1979, and March 1980. These measures also failed. The failures, together with the mounting criticism of the
Federal Reserve performance both at home and abroad, led the Board to revise its operating procedures, in October 1979. Henceforth, the Board would use the quantity of reserves rather than the federal funds rate as the instrument of policy. This announcement marked the initiation of a three-pronged attack on the monetary policy problem. It was followed, in February 1980, by the redefinition of the monetary aggregates, and in the following month by the omnibus Act.

Using the monetary base as the policy instrument avoids the problem of estimating the anticipated inflation rate at the tactical stage of policy-making. Further, it is hoped that the variability in the relationship between reserves and the stock of money would be less than that between the federal funds rate and the stock of money. If the quantity of money were also used as the intermediate target, the problem of undersetting the interest rate could be avoided also at the strategic level. Analysts have hoped, therefore, that the Federal Reserve would jettison interest rates as the operating target and use instead a stochastic quantity theory relationship to describe the connection between money and GNP. Such a change would also reduce the number of links in the Federal Reserve's policy chain. Policy would then run from the monetary base, to the stock of money, and then directly to GNP.

These relationships would, of course, be subject to variability. For example, in Figure 3, setting the monetary base at B* could produce money stocks in the range M₁ to M₂. Money stocks in this interval could result in GNP levels ranging between Y₁ and Y₂. In this representation the potential variability in GNP has been substantially reduced from that observed in Figure 2. Whether this improvement would be found in
Monetary Policy

Monetarist Operating Procedures
the practical conduct of policy, will not be known unless the Federal Reserve adopts the approach and relinquishes use of the short-term interest rate as its intermediate target. At present, as recent statements to the press indicate, the Board continues to pay attention to interest rates at the strategic level.

At the time when the change to an interest rate instrument was made, several practical considerations prevented the complete adoption of the monetarist model. First, the monetary aggregates needed to be redefined. This task has now been, at least partially, addressed. Second, monitoring quantities rather than prices meant that interest rates would become more volatile than previously. (It has already been observed that the federal funds rate moves more quickly and over a wider range than before October 1979.) To change behavior and to successfully implement policy, the movements of the federal funds rate must be reflected in interest rates throughout the economy. Such adjustments are incompatible with the existence of interest rate ceilings in various sectors of the economy. The omnibus Act seeks to remove these ceilings. It is essential to do so, if the new approach to policy is to succeed.

Further, the variability in the relationship between the supply of the monetary base and the quantity of money needed to be strengthened. Reduction in the variability at the tactical policy step is addressed by the codification of reserve requirements undertaken in the Act. The solution of the membership problem should also strengthen the effect of Federal Reserve policy by reducing regulation-avoidance opportunities. Finally, the granting of powers for the Federal Reserve to revise data
requirements can be used to increase the relevance and reliability of monetary data. 17
The Money Multipliers

The tactical relationship between the Federal Reserve’s policy instrument, represented either by reserves or the monetary base, and the money stock is traditionally expressed proportionally in terms of the money multiplier. The redefinition of the monetary aggregates and the reconstitution of reserve requirements have rendered the old multiplier configurations obsolete and new ones need to be established.\(^{18}\)

Five money aggregates are defined in the revisions of February 1980. Of these, M1A, the sum of currency in circulation (C) and deposits at commercial banks (D), is used mainly to provide historical continuity with the old aggregates and seems unlikely to be widely used in the future for policy purposes. Instead, the principal target of policy will be M1B, which includes transaction accounts at nonbanks in addition to M1A. M2 expands beyond M1B by including the public’s holdings of overnight repurchase agreements (ORP), overnight Eurodollars (OU), money market mutual funds (MF), and saving and small time deposits (S). M3 includes term RP’s (TRP) and large time deposits, both negotiable and non-negotiable, (T) beyond M2. The broadest measure, L, adds such liquid assets (LA) as term Eurodollar holdings, bankers acceptances, commercial paper, savings bonds, and Treasury bills to M3.

When the Act is fully implemented, the new reserve requirements will be simpler than the old. All transaction accounts, D\(^*\), will carry a reserve ratio, g.\(^{19}\) Reserves will be held against nonpersonal time deposits (T) and bank Eurodollar borrowings (U) at a lower rate, h. No other deposit, liquid asset, or credit component will be reservable,
Table 1

Definitions and Symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>the monetary base.</td>
</tr>
<tr>
<td>C</td>
<td>currency in circulation</td>
</tr>
<tr>
<td>c</td>
<td>ratio of currency to transactions balances: C/D*</td>
</tr>
<tr>
<td>D</td>
<td>demand deposits at commercial banks</td>
</tr>
<tr>
<td>D'</td>
<td>transactions balances, including demand deposits and other transactions accounts.</td>
</tr>
<tr>
<td>DC</td>
<td>total depository institution credit supply (equation 9)</td>
</tr>
<tr>
<td>DL</td>
<td>total value of depository institution liabilities (equation 8)</td>
</tr>
<tr>
<td>E</td>
<td>depository institution holdings of excess reserves</td>
</tr>
<tr>
<td>e</td>
<td>ratio of excess reserves to D*</td>
</tr>
<tr>
<td>g</td>
<td>reserve requirement on transaction accounts</td>
</tr>
<tr>
<td>h</td>
<td>reserve requirement on Eurodollar holdings and nonpersonal time deposits</td>
</tr>
<tr>
<td>L</td>
<td>broadest measure of the monetary aggregates (equation 7)</td>
</tr>
<tr>
<td>LA</td>
<td>the public's holdings of liquid assets, including term Eurodollar holdings of U.S. residents other than banks, commercial papers, bankers acceptances, savings bonds, and liquid Treasury obligations</td>
</tr>
<tr>
<td>MIA</td>
<td>narrowly defined money stock; demand deposits plus currency (equation 3)</td>
</tr>
<tr>
<td>MIB</td>
<td>MIA plus nonbank transactions accounts (equation 4)</td>
</tr>
<tr>
<td>M2</td>
<td>MIB plus close money substitutes (equation 5)</td>
</tr>
</tbody>
</table>
M3  M2 plus term repurchase agreements (equation 6)
m  the money multiplier (equation 2)
MF  money market mutual funds
ML  other liabilities managed by depository institutions
ml  ratio of ML to D
NW  depository institution net worth
nw  ratio of NW to D
ORP  overnight repurchase agreements
orp  ratio of ORP to D
OU  the public’s holdings of overnight Eurodollars
ou  ratio of OU to D
r  the economy’s short-term interest rate
rf  the federal funds rate
S  personal time and savings deposits
s  ratio of S to D
T  nonpersonal time deposits
t  ratio of T to D
TRP  term repurchase agreements
trp  ratio of TRP to D
U  depository institution purchases of Eurodollars
unless the Federal Reserve issues emergency regulations to that ef-
fact.  

Now as previously, the monetary base (B) may be used either as
currency or reserves. Henceforth, reserves will be held against
transaction accounts, nonpersonal time deposits and depository
institution borrowing of Eurodollars. Transaction accounts are defined
as, "a deposit or account on which the depositor or account holder is
permitted to make withdrawals by negotiable or transferable instrument,
payment orders of withdrawal, telephone transfers, or other similar
device for the purpose of making payments or transfers to third persons
or others".  
That is, the monetary base is held as,

\[ B = C + gD' + h(T+U) + E \]  \hspace{1cm} (1)

Here, transaction accounts include both bank and nonbank deposits and E
represents excess reserves.

The new money multiplier, m, will relate the value of transaction
accounts to the monetary base. Dividing equation (1) by \( D' \) and
expressing the ratios of other liabilities to \( D' \) in terms of lower case
letters, the money multiplier becomes,

\[ m = \frac{1}{g + h(t+u) + e + c} \]  \hspace{1cm} (2)

The various money aggregates can then be expressed as the products of
the money multiplier, and a factor specific to each aggregate. That is,

\[ \text{M1A} = mB(d+c) \quad (3) \]
\[ \text{M1B} = mB(l+c) \quad (4) \]
\[ M2 = mB(l+c+ou) + ORP + S + MF \quad (5) \]
\[ M3 = mB(l+c+ou+t) + ORP + S + MF + TRP \quad (6) \]
\[ L = mB(l+c+ou+t) + ORP + S + MF + TRP + IA \quad (7) \]

Here the symbol, \( d \), used in the description of M1A, refers to the ratio of bank demand deposits to all transaction balances.

Given the simple form of the reserve requirements, these results are surprisingly inelegant. The exception is the equation for M1B; here the relationship is straightforward. This fact supports the authors' belief that the Board will concentrate its attention in the future conduct of monetary policy on the M1B definition of money.

The Federal Reserve has no direct line of control over the unreserved items in the monetary aggregates, that is, over repurchase agreements, personal time and saving deposits, money market mutual funds and the liquid assets included in \( L \). This suggests that the Federal Reserve considers them to be of subsidiary importance to the conduct of monetary policy, despite the fact that bank saving deposits (always) and RPs (of late) have carried reserve requirements. Thus, the reserve requirements, introduced by the omnibus Act, appear to be inconsistent in some instances, with the redefinitions of the monetary aggregates.
In establishing a hierarchy of monetary aggregates, the Board argued that closeness in the substitutability for money was a criterion for positioning within the hierarchy. Thus, money market mutual funds, overnight repurchase agreements, and overnight Eurodollars were considered to be very close substitutes for money. Consequently, not only are they included in M2, but also they are reported as addenda items in the tables of the monetary aggregates. Similarly, personal time and savings deposits are included in M2. Nevertheless, henceforth, neither RPs nor savings deposits will carry reserve requirements. At the same time, nonpersonal time deposits, which enter the aggregates at a point further removed from MLB than either RPs or savings deposits, are reserved. No doubt, nonpersonal time deposits and Eurodollar borrowings are reserved because of their role in liability management and the supply of credit. However, even on this criterion the Board has not been consistent, because it has not placed reserve requirements on the borrowings of RPs and federal funds from nondepository institutions. In short, the newly imposed requirement configuration is inconsistent both with the Board’s earlier redefinitions of the monetary aggregates and with research which shows the similarities in use between large CDs, bank Eurodollar borrowings, and RPs.

If it is true, as the monetarists believe, that money rather than the supply of credit is what governs economic activity, then there is a choice among criteria on which to base reserve requirements. First, requirements could be placed on money and on nothing else. Second, equal requirements could be placed on all assets which have monetary
characteristics, in order to discourage the substitutions which can thwart policy. Third, requirements could be regarded as a tax which should be graduated according to the moneyness of the asset. That is, the highest ratio should be placed on those assets which have all of the characteristics of money and successively lower lower requirements should be placed on substitute assets that have successively fewer of these attributes.

The present Act and the Regulation D adopted to implement it adopt none of these alternative criteria; instead they compromise among the three principles. Under a monetarist philosophy, however, any liability management rationale for reservability would be jettisoned, because depository institutions manage liabilities in order to enhance their supply of loans: and loans are not money. Here also the Board's position is ambiguous: at present it reserves what is money (MLB) and also some, but not all, liability management options. Apparently, the Board's conversion to monetarism is not complete.

The Supply of Credit

Despite the apparent shift by the Federal Reserve toward a monetarist approach, it still expresses considerable concern about the availability of credit. For example, the administration in February 1980, instituted an extensive number of credit control measures to deal with the rapid increase in consumer spending and in the value of credit outstanding in order to break the public's inflationary psychology. This unprecedented appeal to the Credit Control Act of 1969 indicated that the Federal Reserve considered that it had, within its armory of
traditional policy instruments, insufficient powers to control the availability of credit.

Before October 1979, when the Federal Reserve used the interest rate both as a policy instrument and as an operating target, the channels of policy influence over the supply of credit were clearly defined, in principle. The Board governed the credit markets directly by controlling the price of loans and, on some occasions, it also rationed the supply of deposit-institution credit by promoting disintermediation. Under the new, more monetarist approach, however, the path of the central bank's influence over credit are less clearly recognized and a question arises as to how it can effect its policy in the environment created by the omnibus Act and the other recent changes in the modus operandi of policy.

Simpson [48] presents a model of monetary policy which can be used to answer this question. The model relates the supplies not just of money and liquid assets, but also of bank credit to the Federal Reserve's monetary base and reserve requirement instruments. In Simpson's derivation of the bank credit multiplier, total bank liabilities are written as ratios to demand deposits which are then related to the monetary base though the money multiplier. Here, this derivation will be extended to encompass the activities, not only of banks but of all depository institutions.

Total depository institution liabilities (DL) can be classified as transaction balances, personal time and savings deposits, nonpersonal time deposits, overnight Eurodollar deposits, other managed liabilities
(ML), and net worth (NW). That is,

\[ DL = D^* + S + T + CU + ML + NW \]  \hspace{0.5cm} (8)

The supply of credit from all depository institutions (DC) consists of the value of their total liabilities less their total reserves, both required and excess. Other liabilities can be expressed as ratios to transaction deposits, which ratios are written as lower case letters in the equation (9) below. Finally, a depository institution credit multiplier can be obtained by relating the value of transaction deposits to the monetary base via the monetary multiplier that was derived earlier in equation (2). That is,

\[ DC = MB[1 - g - e + s + ml + (t+ou)(1-h) + nw] \]  \hspace{0.5cm} (9)

This equation can be used to show the effects of changes in the monetary base and in reserve requirements on the supply of depository institution credit.

Equation (9) gives the impression that the monetary control features of the omnibus Act provide the Federal Reserve with considerable power to control the total amount of depository institution credit. The impression is, however, misleading for it presupposes that the ratios, s, e, ml, t, ou, and nw will remain constant, or at least that they will change in a predictable way, so that their shifts can be countermanded in a policy setting. Yet, changing reserve ratios
is equivalent to altering relative prices. Except in unusual circumstances, changing relative prices would be expected to change behavior and, therefore, the values of the ratios. Further, changing the availability of the monetary base alters the incentives for depository institutions to avoid reserve requirements by switching from transaction deposits to alternatives which carry lower reserve ratios. Thus, it is not likely that the multiplier ratios will remain unchanged during shifts in policy. In fact, the historical performance of these ratios over the past three years (the period for which data are available) show that the ratios have not been constant.

For example, the ratios of currency, savings and small time deposits, large CDs, and RPs to transaction balances all rose: from .3332 to .3888; from .3304 to .3896; from .5805 to .8371; and from .0773 to .1842, respectively. These changes appear substantial, considering the shortness of the period over which they were made. The value of the money multiplier changes in response to changes in its component ratios. Thus, except in the unlikely event that the ratios move compensatingly, their alterations present the possibility of substantial variability in the value of the money multiplier. Table II demonstrates this possibility. It presents the results of a thought-experiment in which the ratios are set according to values (their average values plus or minus two standard deviations) which would lead to a maximum or a minimum value of the multiplier.27

Klein [33] argues that the incentives to shift from demand deposits to existing or newly innovated assets is reduced by the new Act and that this change will reduce the variability in the component ratios of the
money multiplier. It is true that there are now interest-earning alternatives to demand deposits available to the consumer. It is also true that reserve requirements are (almost) uniform on consumer transaction accounts. These factors may reduce the incentive to innovate in the consumer area. However, the Act does not entirely remove this incentive. NOW and similar accounts still pay substantially less than market interest rates, so that the shift to money market mutual funds, for example, will continue. Equal reserve requirements have not been placed on business and government transaction balances; for overnight repurchase agreements, which many regard as transaction balances, carry no reserve requirements. Thus the movement from deposits to RPs will continue and may spread to smaller accounts, if nominal interest rates remain high. Consequently, changes in the ratio components of the money multiplier may be expected to continue despite the Act.

Further, while it is possible that the variability in the tactical relationship may be ended when the Act is fully implemented, especially if the anomaly of RPs being unreserved is removed, uncertainty in the multiplier relationship may actually be increased during the phase-in period of the Act.

Thus, the Act goes a considerable way toward providing an environment conducive to the adoption of a full monetarist model that uses monetary quantities at both the tactical and strategic stages of policy formation. In doing so, the Act is part of a continuing process, initiated in October 1979, toward undertaking an experiment in monetarist policy-making. That process is not, however, complete.
### TABLE II

Multiplier Relationships

<table>
<thead>
<tr>
<th>Money Multiplier(^2)</th>
<th>Credit Multiplier(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>2.0163</td>
</tr>
<tr>
<td>Max</td>
<td>3.8200</td>
</tr>
</tbody>
</table>

**Notes:**

1. In the calculations, \( g = .12, e = 0, s = .3766, .1413, \\
   cm = .1506 \ .0338, t = .6410 \ .0997, cu = nw = 0. \)

2. The money multiplier is the relationship of the monetary base to MLB, as given by equation (4).

3. The credit multiplier is the relationship of the monetary base to total depository institution credit, as given by equation (9).
VI.

THE FUTURE: PROBLEMS REMAIN

The 1980 Act is oriented toward the domestic financial system and does not, and perhaps should not, address problems of international financial structure and policy. Despite the dramatic changes in the international and domestic economies during the past year, the foreign exchange markets have continued to function adequately. The shift from a fixed to a "managed" floating exchange rate system in the early 1970s has established a more orderly international financial structure that has not, to date, exhibited the same type of problems characteristic of the internal financial system. There is, nevertheless, one interesting exception to the domestic orientation of the Act is that it authorizes the use of foreign debt as collateral for U.S. currency and open market operations. This feature will provide the Federal Reserve with more latitude to participate in, and to influence, foreign bond and financial markets. This facility might become important in view of the exposure of the U.S. banking system to losses on its foreign loan portfolios.

The omnibus Act has broken new ground and after the transition period, it should contribute to a more efficient financial system and a more effective monetary policy. At the same time, serious problems remain. These can be divided into five general categories: (1) differences in the approaches to maintaining the "viability" of depository institutions during the transition period, (2) the possibility of a continuation or even a re-introduction (or re-regulation) of various
constraints on financial transactions, (3) the perpetuation of term structure risk as faced by depository institutions, and (4) the existence of problems (both during and after the transition) in the conduct of monetary policy.

Maintaining the Viability of Depository Institutions

The term, "a viable financial institution", has received various interpretations in the discussion of financial reform and will surely become a subject of considerable debate during the implementation of the recent legislation. Ultimately, the onus of promoting the success of the Act lies with the regulators, especially the Deregulation Committee. The Committee has the task of effecting the deregulation and structural reform of the financial system. It has been given considerable flexibility in the Act's implementation.

How it goes about its task is crucial. If it interprets its responsibility to promote the viability of depository institutions to mean that it should encourage the industry to efficiently and, without overburdening constraints, serve the public's needs, the Act can succeed. However, as was pointed out above, the natural outcome of this process will be an increased rate of failure, consolidations, and new forms of competitive pressures confronting financial institutions. If then, the Committee responds to these possibilities by interpreting viability to mean that only a few institutions should be allowed to fail and that the flow of mortgage credit should continue at artificially stable rates of interest, the deregulation process will fail. Attempts to ensure the survival of the weakest institutions and those that have
been able to survive in the past only because of regulation will not serve the public well. The Committee's task is difficult because it will be subject to substantial criticism and lobbying pressure.

Remaining Constraints and "Re-regulation"

The omnibus Act goes a considerable distance in removing some of the more serious binding constraints on the flow of funds; however, a number of important impediments remain. There are legal restrictions on the expansion of depository institutions across state borders and within unit banking states. These artificial restrictions on the size of the financial enterprise do not promote the efficiency of the system nor do they strengthen its ability to compete against international banks. If the deregulation process continues as anticipated and various types of financial institutions find that they cannot function in the more competitive environment, there will need to be a considerable liberalization of the regulatory constraints that now limit the expansion of financial enterprises.

For example, during the search for partners with which to merge weak institutions, the regulators may be unable to find any which do not violate the anti-trust laws. Then pressure will grow to repeal these laws. Relaxation of the laws will first be made to cover such emergency situations. Later it will be generalized so as not to discriminate against stronger institutions. The resulting geographical aggrandisement could take several forms. Rather than directly permitting nation-wide expansion, it could begin more gradually with permission to branch and acquire within designated metropolitan (SMSA) areas. Such an approach
has been used in the Washington-Maryland-Virginia SUSA. More ambitious plans would allow expansion across contiguous states or within broad geographical regions.

The omnibus Act has encountered a conflict between two principles: States' rights and the equality of opportunity for financial institutions and their clients. The Act has ruled in favor of the second principle by overriding, unless explicitly re-instated, State usury ceilings on mortgages and large agricultural and business loans. Should states move to reject those overrides prior to the cut-off date of April 1, 1983, the process of deregulation would be seriously affected.

However, the Act provides a competitive environment for federally chartered institutions that state laws cannot overlook. The monetary control provisions of the Act apply to all depository institutions whether federally or state-chartered. The deregulatory provisions, while they apply formally only to federally chartered institutions, will put pressure on states to remove their state specific constraints. Where state laws continue to put state chartered institutions at a competitive disadvantage, these enterprises will have the incentive to change to federal charters. Where a state's laws penalize all its depository institutions (both state or federally chartered), an incentive exists to move some, if not all operations to another state. In such a disadvantaged state, the provision of services to the public would suffer because existing institutions would be restrained, new institutions would be reluctant to open there, and foreign banks would choose to establish their U.S. subsidiaries elsewhere. Already, therefore, there is evidence that state laws are being revised to remove
some constraints; Ohio's and New York State's recent revisions of their usury ceilings provide cases in point.

Kane [28] has pointed out that deposit insurance, as it is currently administered, produces an anti-competitive solution, because the insurance premium is calculated as a percentage of deposits and no allowance is made for the risks which an institution is undertaking. By omitting to make the costs of participating in the plan reflect an institution's risk exposure, insurance encourages deposit-institutions to reduce the equity share of their funding to the minimum level prescribed by regulators. Such behavior increases the exposure of an institution to all forms of risk: interest rate, liquidity, and default. In so doing, it places unacceptable, potential strains on the insurance fund. Consequently, the pricing of FDIC, FSLIC, and NCUA insurance services needs to be revised after careful study is given to the pricing problem.

In a similar fashion, the mutual stock form of ownership precludes competitive behavior. The power of stock-holders to require both returns and levels of risk-exposure that are competitive with alternate, market-determined assets, is lacking in institutions using the mutual, nonprofit, form of ownership (Riordan and Hartzog [43]).

There is one other constraint that should be mentioned. At present, savings and loan associations must maintain at least 82 percent of their total assets in, and obtain at least 75 percent of their income from, qualified assets (primarily mortgages) in order to qualify for a favorable tax treatment. This feature of the Internal Revenue Code has provided as strong incentive for savings and loan associations to
allocate a large part of their assets to mortgages. At the same time, the omnibus Act has authorized thrifts to expand their portfolios to include consumer credit, commercial paper, and corporate debt. Some modification of the tax treatment of thrifts will be required if these institutions are to take much advantage from their expanded powers.

In Section III it was argued that credit unions achieved two significant benefits from the Act. At the same time, as a result of their cooperative nature, credit unions are exempt from federal income taxation. This unique feature violates the concept of horizontal equity in taxation and may confer an unfair advantage to the credit union industry. Some would argue that if the credit unions are to participate in the benefits of deregulation, they should also be subject to the same taxation treatment as other depository institutions. Credit unions grew rapidly until 1978, so that the question of the taxation of credit unions will remain an issue to be addressed; as will their role in the financial system of the future.

Term Structure Risk

Term structure risk has been a serious problem for depository institutions since the late 1960s when inverted yield curves have occurred during periods of rapid inflation. While positive yield spreads between long and short rates are neither necessary nor sufficient for profitable financial operation, the periodic occurrence of narrow or negative spreads does raise serious problems for a depository institution. Where the episodes of yield curve inversion are only periodic and are not continual, management's solution is one of canny timing of both
loan and liability origination (Kaufman [30]). Management needs to develop satisfactory forecasts and to withhold lending activity until those periods when lending will be profitable in the long run; however, there are problems with this strategy. Apart from the fatuousness of recommending thrift management to forecast well, the timing strategy may be operationally difficult to implement.

The deleterious effects of exposure to interest rate risk can be ameliorated in any or all of three ways. First, institutions could reconstitute their portfolios to avoid this risk. They could do this, for example, by lengthening the maturity of their liabilities and reducing that of their assets. While the Act does give thrifts powers to make some shorter-term loans, which may help to reduce the average maturity of their assets, it fails to take other actions which would better work to this end. For example, the Act says nothing on the question of the revision of mortgage instruments, to make them more responsive to changes in market interest rates. It should be possible for innovators to devise financial instruments which are both profitable to lenders and acceptable to borrowers.

The power to govern the terms of the mortgage instruments remain with the industry regulators. At the same time, the contract-design process is subject to considerable public scrutiny and political pressure. Consequently, the ability to offer "creative-financing," in the form of variable-rate and shared-appreciation mortgages has been slow to develop. It may be that the "double-dip" recession of 1980 in the housing industry could have been ameliorated, if not avoided, by the availability of more flexible mortgage instruments. The regulatory
process needs to be more responsive. If it cannot become so, it would be better to end the control and to leave the design of mortgage instruments to competitive market surveillance.

Second, institutions may protect themselves from interest rate risk by hedging their activities in the futures markets. The Act, however, does nothing to encourage the greater use by banks and thrifts of interest-rate hedging instruments. Powers to control access to these markets remain with the regulators, who have been slow to sanction such use. Again the role of the regulators needs to be reconstituted or removed.

Third, where institutions cannot, or choose not to, avoid interest rate risk, they should be empowered to charge for carrying its burden. As Thygerson [52] shows, several of the traditional components of both mortgage and deposit contracts carry implicit options that expose depository institutions to interest rate risk. For example, the ability of savings-certificate holders to withdraw their monies before maturity, places the burden of risk exposure on the borrower. Here, the depository institution provides a service to the saver. Pricing of this service is currently set by the regulators without regard to the modern theory of option-pricing. Similarly, many home-buyers, borrowing on fixed-rate mortgages, have the ability to refinance their loans when interest rates fall. This asymmetric contract provision places the major risk of loss from changes in the interest rate on the lender. Currently, appropriate charges for the assumption of this risk are not made. True costs are reflected neither in prepayment penalties nor in any surcharge accruing to a fixed rate loan above the market-rate set on a variable rate
mortgage. Once again current regulations are too inflexible.

The problem of interest rate risk may go even deeper than this, however. Cargill and Meyer [11] have presented evidence that inflationary expectations are more readily incorporated into short-term interest rates than long. If this is to continue, then better forecasting and market timing will not ensure the viability of depository institutions engaging in time mediation from short to long. Negative, or at least low, yield spreads will persist as long as inflation is expected to continue, and it becomes increasingly difficult, if not impossible, to earn a profit from long-term lending. Then, allowing lending rates to adjust, even instantaneously, to market rates, will not guarantee profitability. The success of this type of financial inter-mediation, which is characteristic of depository institutions, remains questionable.

The Conduct of Monetary Policy

Problems remain in insuring sufficient independence from political pressure for the Federal Reserve to pursue its anti-inflationary policies. Problems also remain in the conduct of monetary policy. These are both structural and transitional. In the latter case, for example, to successfully monitor and control the monetary aggregates, the Federal Reserve needs to know the value of the money multiplier with as much accuracy as possible. While the relationship of the money base to M1B will be clear and direct when the Act is fully implemented, that relationship will be subject to uncertainty in the interim. During the transition period, as the old reserve requirements are phased out and the
new ones are introduced and as nonmember institutions are edged into the system, effective reserve ratios will be evolving. The money multiplier will be constantly changing in value and difficult to predict, making more uncertain its relationship to the monetary aggregates and confounding the conduct of monetary policy.

Even after the transition period is complete, informational problems will remain. The ratio of currency to demand deposits has risen substantially since 1961. Since January 1976, when data are first available, the ratio of currency to transaction balances has shown the same phenomenon, rising from .333 to .389 by March 1980. The reason is that, while the present concept of transaction balances embodied in the February 1980 revision includes the demand deposit alternatives that are available to households, they exclude those utilized by government and business: the RP. RP usage varies with the cyclical pattern of interest rates and the incidence of reserve requirements. Thus, as the shift from demand deposits to this and other money substitutes continues, the currency ratio will evidence both a trend and cyclical variation.

The usefulness of the money multiplier relationship is predicated on the stability, or rather on the predictability, of the ratios of nondeposit liabilities to transaction balances. These cannot be expected to remain constant so that what experience there is in assessing and predicting their behavior may no longer be relevant. [26.a] In future, large CDs and Eurodollar borrowings will be reservable under the revision of Regulation D adopted in September 1980, but RPs will not carry reserve requirements. Thus, substitution can be expected to take place among these assets as their effective relative prices change. The
substitution will alter the ratios of nonpersonal time deposits and Eurodollar borrowings to D* and these alterations will affect the value of the money multiplier. Given our lack of understanding of these markets, the changes will be difficult to anticipate and to counteract in the process of controlling the money supply.

The reserve requirement tax provides an incentive for depository institutions to replace reservable liabilities by nonreservable ones. It is also likely that shifts in lending activities from regulated to nonregulated institutions will continue. The movement toward money market mutual funds, the commercial paper and off-shore markets will not cease with the implementation of financial reform. That is, while the removal of Regulation Q should eventually solve the problems of cross intermediation among depository institutions, it will not entirely remove the shift toward nonregulated institutions. This shift will also alter the value of the money multiplier. As a result of experiencing difficulties in using the money multiplier relationship, the Federal Reserve may resume paying attention to interest rates. There is a further problem in pursuing a monetary aggregate target. When the Board is using a monetary aggregate, M1B, as its principal target and indicator of monetary policy, it is important that the stock be measured relevantly for its tasks. The recent discussions preceding the redefinition of the monetary aggregates, indicate that it is becoming increasingly difficult to recognize what is money and what should be the subject of monetary policy.31

There are problems with the theoretical model used to represent the channels for the transmission of monetary policy to the economy. For
example, the nexus between money and credit is not fully understood. While the way in which interest rates influence economic activity is popularly understood, the effects of the money stock are less clearly recognized. Policy-makers, therefore, retain a preference for using interest rates. As has been seen above, however, when interest rates are used as the sole instrument of policy, the correct policy setting is difficult to identify. When both interest rates and money aggregates are used together, they make produce conflicting signals. Further, the role of credit is not fully understood: is it a determinant of economic activity or is it, merely, an economic by-product? Belief among policy-makers that credit is a determinant of economic activity keeps them resolved to control not only the quantity of money but also the availability of credit.

Use of a depository institution credit multiplier, such as that given in equation (9), gives the impression that the Federal Reserve has, in the regular conduct of monetary policy, considerable control over the supply of credit, including mortgages. The argument presented in Section V above offers a contrary view. There it is stressed that the Board has no direct control over the unreserved liabilities of depository institutions and other financial intermediaries. If loan demand is strong, institutions will seek to expand managed liabilities in order to meet profitable loan opportunities. The money multiplier approach does not show how the Federal Reserve will constrain this activity. The credit multiplier relationship can be used to examine the effects of policy changes in the monetary base and in reserve ratios only as long as the behavioral ratios remain constant or predictable.
The Board has shown continued interest in the behavior of money and credit supplies and interest rates. Attempting to govern all three will present no problems when they behave in constant and known relationships to each other. Traditionally, this has been assumed to be the case. Then, cutting the supply of money should reduce the supply of credit and raise interest rates, or conversely. However, recent research suggests that such direct relationships do not continue to hold in the current environment of substantial volatility in interest rates [24]. Then, while the Federal Reserve's traditional policy instruments (open market operations and changes reserve requirements) will give rise to the expected responses, increases in uncertainty have perverse effects. For example, increasing uncertainty about interest rates will increase the supply of demand deposits (which is usually interpreted to be an easing of monetary policy), but at the same time it will decrease the supply of loans and raise interest rates (which effects are usually held to represent a tightening of monetary policy). Thus, increasing uncertainty about interest rates gives conflicting signals as to the tenor of monetary policy. Policy makers, policy analysts and the public may be confused by these conflicting signals. Such confusion could cause, and perhaps has caused, the Federal Reserve to countermand its policy stance. In turn, changing the stance produces even more variability in interest rates and the problem is confounded. Consequently, a better understanding of the channels of monetary policy in the current highly uncertain environment is needed before policy can become effective.
Lagged Reserve Accounting

Finally, the Act does not solve the problem of lagged reserve accounting. In a situation in which depository institutions need reserves this week to support deposits held two weeks previously, the Federal Reserve's freedom to conduct monetary policy is removed. Here, the central bank is faced with an unenviable option. On the one hand, it can provide whatever level of reserves is necessary to permit banks and thrifts to meet their obligations. On the other hand, it can provide insufficient reserves so that institutions will be forced to renege on their obligations. Such latter behavior by the central bank would be contrary to its prime historical function of assisting institutions to fulfill their obligations. Consequently, the Federal Reserve can merely validate what has already taken place.

Even though the Federal Reserve since October 1979 has significantly widened the range permitted for movements in the federal funds rate, its ability to let this rate vary remains constrained. For example, a decision not to supply the validating reserves would result in such extreme fluctuations in the federal funds rate that political opposition to its actions would be so strong as to force it to abandon the quest and even to revert to monitoring interest rates. Thus, the system of lagged reserve accounting seriously impedes any concerted attempt to control the monetary aggregates. Persistence in the calculation of reserve requirements in this fashion has, no doubt, contributed to the extreme swings in the growth rates of the money supply during the past twelve months.

In principle, however, it would be possible for the Board to successfully conduct monetary policy even with lagged reserve
accounting. To do so, it would have to use the discount rate to penalize institutions forced to borrow at the discount window. In this situation, while it would remain possible for banks to meet their obligations, they would know in advance that it would be unprofitable to so extend loans and deposits that they needed to borrow reserves from the Federal Reserve System. In the practice of policy now and in the recent past, however, the discount rate, even after allowing for the surcharge which has recently been attached to persistent borrowings, is kept below market interest rates. Consequently, use of the discount facility does not carry the needed penalty. In short, in order for the Board to effect its policies, it must either move to a system of contemporaneous reserve accounting or it must make it unmistakably clear that it will set the discount rate high enough to impose a cost, perhaps a substantial cost, on the use of the discount facility. It would, however, be preferable for the Federal Reserve to move to a system of contemporaneous accounting rather than to strengthen the present system by more penalizing use of the discount rate, because the first choice gives less discretion to the Federal Reserve and, therefore, exposes it to less political pressure.

For monetary policy to be successful, a better understanding of the interrelationships of money and credit are necessary. To date, this has not been achieved. In fact, since the shift from interest-rate to monetary-aggregate policy targets, monetary policy has been no more successful than under the previous regime. Cynics can even claim that the situation has deteriorated. The Board relinquished control over nominal interest rates ostensibly in order to better control money. However, in the outcome, it has achieved control over neither. Both
interest rates and the growth rates of the aggregates have shown greater
variability over the past fifteen months than before.
VII.

SUMMARY AND CONCLUSIONS

In recent years there have been efforts to remove some of the restrictions under which U.S. industries have been operating. The Depository Institutions Deregulation and Monetary Control Act of 1980 marks the formal initiation of this process for the banking and thrift industries. One of the objectives of the Act is to remove artificial restrictions so that the industries can operated more efficiently. In so doing, they become both more profitable and, therefore, more viable. At the same time they are better able to provide more or cheaper financial services to the public. However, while the Act does remove some impediments to efficient operations, it does not remove all. In fact in extending reserve requirements to nonbank institutions, it actually increases the degree of regulation to which nonmember banks and thrift institutions are exposed. Consequently, while by equalizing reserve burdens and widening thrift asset powers, it may help in the competitive battle within the depository institution industry, it will not remove the advantages of unregulated financial intermediaries, such as money market mutual funds and international financial agencies, nor eliminate their competition.

The Act addresses the competitive environment between thrifts and banks. Here on a first look at the provisions of the Act, it appears that banks have gained less than thrifts, but after closer inspection, the disparity is less apparent. In fact, the balance of advantages
appears to have been finely drawn: the Act's basic philosophy is to achieve a "level playing field" for competition among the depository institutions. Thus, the outcome of the competition between thrifts and banks will depend on management expertise, the actions of the DIDC, and the course of future economic events.

The Act removes some of the inequities between large corporate and government users of financial services and the small consumer. In particular, it intends to give the latter a better opportunity to earn market rates of interest on savings. The speed with which this goal will be achieved depends on the priority it is given by the DIDC as opposed to furthering the short-term interests of the thrift and housing industries.

The Act aims to increase the Federal Reserve Board's power to control the supplies of money and credit. The Act can achieve this objective, when it is fully implemented, as long as the financial system has not evolved in the interim to make its provisions obsolete. During the phase-in period, however, the Act and the accompanying changes in Federal Reserve operating procedures, will serve to increase the degree of uncertainty accompanying the execution and interpretation of monetary policy. In turn, this greater uncertainty confounds the conduct and evaluation of monetary policy. To risk-averse money and credit users, the increase in uncertainty inhibits behavior. Thus, the outcome may be a deceleration in the growth of traditional financial instruments, accompanied by a shift in activity toward the provision of hedging instruments.

Several laws which prevent the free operation of the financial
markets remain to the repealed. Here the prohibitions on branching, both within and across states, are cases in point. Other examples are the antitrust laws which prevent banks from purchasing thrifts and conversely. The free market is also constrained by regulatory restrictions on the form of mortgage and savings deposit contracts, on hedging activities, and the pricing of services. Many of these restrictions are counter-productive and require revision in the new, more competitive environment and in response to greater understanding of the principles of option pricing.

In short, while the Act points in the right direction, it cannot be regarded as a panacea. Many problems remain and new ones will arise. The financial system will need, therefore, to become more flexible and it behooves legislators and the industry regulators to be mindful of this need.
Footnotes

*The authors are, respectively, Professor of Economics at the University of Nevada/Reno, and National Fellow, Hoover Institution, Stanford University, on leave from the University of California, Berkeley. The paper's first draft was written while the authors were Visiting Scholars at the Office of the Comptroller of the Currency. The views expressed in this paper are those of the authors and in no way reflect those of the Office of the Comptroller. The authors thank Steven Weiss, Thomas Mayer, Thomas Moore, and David Pyle for comments on earlier drafts of this paper.

1. The collapse of the banking system in the 1930s is the most dramatic example of malfunctioning in the financial system; however, other periods, such as the banking panics of 1837, 1893, and 1907-08 were associated with serious interruptions in the flow of funds.

2. An overview of the major developments of the U.S. financial system can be found in [17], [26], and [53].

3. The paper discusses the financial reform features of the omnibus Act ahead of the monetary control features; however, it is not clear that this is the proper order. The legislation places the financial reform (deregulation) aspect as first in the title but the monetary control aspect is placed first in the body of the legislation. The paper begins with the financial reform features because these have received the most extensive discussion since the mid-1960s. The financial reforms are similar to earlier legislative attempts at change.
and to the recommendations of well-known studies. The structural difficulties of the financial system, as they emerged during the 1970s, largely account for the proposal and passage of the omnibus Act.

4. The various forms of implicit interest rate payment either on demand deposits (zero ceiling rate) of savings/time deposits (non-zero ceiling rate) are commonly referred to as "premiums." There is considerable controversy at present as to whether premiums should be eliminated during the phase-out of Regulation Q ceilings. Premiums have become an important method of avoiding the ceiling constraints in the past few years as interest rates on unregulated instruments have increased. An interesting attempt to measure the implicit interest rate paid on demand deposits over the period from 1954 through 1975 is provided by R. Startz [50].

5. For a discussion of the traditional argument, see Carl Gambs [18] and George Benston [4]. The more recent view argues that the failure of the banking system was due primarily to inappropriate policies followed by the Federal Reserve during the first years of the decline. The most detailed and well-known argument along this line was provided by Milton Friedman and Anna J. Schwartz [17] in 1963. Clark Warburton had earlier reached a similar conclusion [9] [57].

6. The essential elements of the debate can be found in Thomas Mayer [34] and Franco Modigliani [37]. The specific issue of the causes of the Great Depression are discussed in Friedman and Schwartz [17] and Peter Temin [51].

7. Some economists have argued that the erosion in Federal Reserve membership had little to do with the Board's ability to exercise
effective monetary control. Rather they believe that the Federal Reserve's long campaign was an attempt to augment its constituency and its power and to increase its standing among world central banks.

8. The Thrift Task Force Study was published by the U.S. Treasury in June 1980 [55]. The Study reviews a number of measures to improve the viability of thrift institutions; however, no specific action was deemed necessary because interest rates fell dramatically during May and June 1980, and the financial crisis and period of high interest rates was thought to be over.

9. The Massachusetts Supreme Court in May 1972 ruled that state law did not prohibit mutual savings banks from offering NOW accounts. Shortly thereafter other depository institutions began to issue NOW accounts in several New England states and in March 1976, Congress authorized NOW accounts for all six New England states.

10. However, Federal Reserve services are mandated by the Act to be priced to meet the direct and indirect costs of their provision. Thus, contrary to the argument presented in the text, it is conceivable that the Federal Reserve will lose some of its service-provision business (and thus its area of influence) to "cream skimmers" in the private sector.

11. Kane [28] presents evidence to show that thrifts have branched more rapidly than banks during the past decade and a half. Consequently, thrifts may not be at a relative disadvantage in this regard.

12. The causes of the slowness in the adoption of variable rate mortgages are not clear. However, when interest rates are low and expected to rise, but loan supply is abundant, consumers may success-
fully avoid accepting variable rate mortgages and their risk of higher rates. When rates are high, but expected to fall and funds are in short supply, thrifts may prefer to offer fixed rate loans in an attempt to "tie-in" the high rates. Industry spokesmen claim that the regulators have set terms for the mortgage contracts which make them unattractive to institutions. Consumer advocates claim, conversely, that the terms are unacceptable to consumers.

13. Poole [41] first examined IS and LM curves (as these relationships are frequently called) in a stochastic formulation.

14. This analytical approach is due to R. Friedman [14].

15. Garcia, and Pak [22] and Wenninger and Sivesind [59], for example, have argued that monetary aggregates redefined to include such financial innovations as repurchase agreements and money market mutual funds better describe and forecast the economy than did the measured stocks of the 70's.

16. Three moves toward monetary and credit stringency were made. First, on November 1, 1978, the discount rate was raised to increase market interest rates, reduce monetary growth, reduce inflation and economic growth and support the dollar. Second, on October 6, 1979, the Federal Reserve replaced the federal funds rate as its policy instrument by bank reserves, imposed reserve requirements on managed liabilities, and raised the discount rate. Finally on March 14, 1980, the Federal Reserve experimented with credit controls via a "voluntary" 6-9 percent limit on the expansion of domestic bank loans to domestic customers, the imposition of reserve requirements on extensions of consumer credit by
both bank and nonbank lenders. It also tightened constraints on the use of managed liabilities, instituted reserve requirements on any expansion in money market mutual fund liabilities, and introduced a penalty discount rate for persistent borrowers.

17. The provisions permitting the extension of data reporting requirements are contained in section 102.2 of the Act.

18. Money multipliers are widely discussed in texts on money and banking. See, for example, Cargill [10], Simpson [48].

19. The first band of deposits (initially the first $25 million, will carry a lower reserve requirement. Initially, the low requirement is to be 3 percent and the higher one, 12 percent.

20. There is a "catch 22" element here. The Federal Reserve has latitude in what it defines as a transactions or nonpersonal time deposit or account. Consequently, assets, not initially covered by reserves, may later be encompassed.

21. The interpretation and the quotation are taken from the Federal Reserve Board’s announcement of the revision of Regulation D in the Bulletin of September 1980, p. 761.


23. The measure of Eurodollars included in the monetary aggregates (overnight Eurodollar deposits held by U.S. nonbank residents at Caribbean branches of U.S. banks) differs from the Eurodollars which are reserved (net borrowings from foreign depository institutions, loans by and sales of assets to overseas branches).
24. Monetary aggregate data are given, for example, in Federal Reserve's Table "Money Stock Measures and Components," Table 1.21, page A14, of the Bulletin [6].

25. An analysis of bank liability management is given in Kane [27] and Garcia and Pak [24].

26. This technique can also give the Federal Reserve the appearance of firm control over the monetary aggregates. Expressing the unreserved components of the aggregates as ratios to demand deposits and other transactions accounts (and making the unwarranted assumption that the ratios are constant) makes the value of the aggregates direct and uncomplicated functions of Federal Reserve (reserve ratio and monetary base) policy instruments.

27. The maximum value of the ratio is taken as the average of the beginning and end period value plus (or minus) twice the standard deviation of these values. The minimum value is similarly calculated.

28. Attention to this provision of the Act was first drawn by a paper by Berman and Olbrycht [5]. The authors, however, do not share their apprehension that this provision will remove constraints on the ability of the Federal Reserve to expand the money supply.

29. It may be that the tax treatment of mortgages in the past has provided less of an incentive to engage in mortgage lending and more of a subsidy-reward in recognition of the already mandated portfolio confinement.

30. A survey of credit union literature can be found in Cargill [7]. Smith, Cargill, and Meyer [49] present a theoretical framework to
analyze the behavior of credit unions. Black and Dugger [3] outline a number of important policy and regulatory issues facing the credit union industry.

31. Work is currently being done at the Federal Reserve on the definition of the monetary stocks based on modern aggregation theory (Barnett [2] and Offenbacher [38]).

32. When issuing the final form for Regulations A and D to implement the Act, the Federal Reserve announced that it is considering the introduction of contemporaneous reserve accounting.
References


